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## plan

#### The United States Federal Government should reduce greenhouse gas new source performance standards for coal fired energy generation units, clarifying that the Environmental Protection Agency lacks the authority to implement these standards under the Clean Air Act.

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#### GHG NSPS rule prohibits new coal production—kills the industry

Peter Glaser, Troutman Sanders, LLP, 5/31/12, ADMINISTRATION ENERGY POLICIES, Congressional Testimony, Lexis

EPA's proposed GHG NSPS would also kill new coal-fueled units. The rule sets a performance level for new coal units equivalent to what EPA says a combined cycle natural gas combustion turbine can meet - 1000 lbs. CO2/MWh. Yet EPA recognizes that even a modern, efficient supercritical coal plant can only meet a standard of 1800 lbs. CO2/MWh. EPA says that a coal plant with carbon capture and storage (CCS) could meet the 1000-lb. standard, but it also recognizes that CCS technology is not commercially competitive. It cites to Department of Energy/National Energy Technology Laboratory "estimates that using today's commercially available CCS technologies would add around 80 percent to the cost of electricity for a new pulverized coal (PC) plant." CCS is a technology that holds promise, but it has not been demonstrated to be commercially available at scale. As important, the basic legal and regulatory architecture is not in place to make CCS a reality. There is no comprehensive permitting system for storing CO2 underground for the very long time periods required, nor is there a liability structure in place to cover potential liabilities over this long term. A July 22, 2009 paper prepared for the American Public Power Association entitled Geologic CO2 Sequestration, Issue Spotting and Analysis White Paper, details the numerous legal and regulatory impediments that must be resolved before CCS can become a commercial reality. Nearly three years later, these impediments remain unresolved. As the Administration's CCS task force explains:

In addition to the challenges associated with cost, these projects will need to meet regulatory requirements that are currently under development. Long-standing regulatory programs are being adapted to meet the circumstances of CCS, but limited experience and institutional capacity at the Federal and State level may hinder implementation of CCS-specific requirements. Key legal issues, such as long-term liability and property rights, also need resolution.

August 2010, at 2. Hence, for EPA to say that new coal generation can be built if it uses CCS is no different than EPA saying that no new coal plants can be built for the foreseeable future. EPA states in the proposed GHG NSPS rule that the rule will incent CCS and that CCS costs will come down over time as more units are built, but the opposite is the case. It may be true in general that the cost of the first unit in a new industry is high, while the cost of the thousandth unit is lower, but that maxim won't apply in an industry where no one is allowed to build coal plants. There will be no way to get from the first unit to the thousandth unit. EPA also states that new coal plants installing CCS can average their emissions over 30 years to meet the 1000- lb. standard. EPA states that a new unit meeting an 1800-lb. standard in the first ten years of operation will be deemed to meet the standard over 30 years if it eventually installs CCS and its 30-year average emission are 1000 lbs. But this proposal is just a mirage. No unit can get financed if it will violate EPA standards in 10 years unless it installs technology that, at best, is only projected to be available in 10 years. Lending institutions putting more than a billion dollars at risk will require considerably more certainty than the possibility that the unit will avoid violating regulatory standards if in 10 years CCS technology proves to be ready both commercially and as matter of law and regulation.

#### Crushes electricity reliability—causes cascading blackouts

Scott Segal, Electricity Reliability Coordinating Council Director, 6/25/12, ERCC Comments Submitted to EPA on the New Source Performance Standards for Power Plant Carbon Emissions, www.electricreliability.org/ercc-comments-submitted-epa-new-source-performance-standards-power-plant-carbon-emissions

Given the regulatory uncertainty related to future EPA regulations on a wide variety of energy sources—and not just coal—keeping all options on the table for energy generation, as the President has suggested multiple times, is essential to maintaining America’s energy supply.

In recent years, coal-fired power plants have provided 40 to 50 percent of the electricity used by US consumers and businesses each year. The number is lower now due to pending EPA regulations and market conditions associated with the price of natural gas, but even today, notwithstanding the historically low cost of natural gas and newly adopted regulatory obstacles for coal, several power producers in the U.S. are seeking to develop new state-of-the-art coal-fired power plants for a variety of reasons. Some of them are concerned about the historic volatility in natural gas prices and their inability to obtain long-term contracts with stable pricing for natural gas, preferring the long-term price stability that comes with coal. Some of them are developing new plants in areas that have localized, economical supplies of coal or other solid fuel. Others simply do not want to put all their eggs in one basket and want to maintain fuel diversity in their generation mix. Despite EPA’s recognition that the CAA requires the agency to consider “energy requirements” in connection with proposed standards of performance, the proposed rule does not even consider these important energy policy issues.[13] As aging coal-fired power plants are forced to shut down due to other EPA air pollution regulations and additional plants are temporarily idled to install mandated pollution controls, we need to ensure a reliable stream of electrical power is available to meet the nation’s energy needs.

As a result of the combination of EPA’s regulations, including the proposed rule and the inevitable 111(d) rule for existing coal-fired units, the country may experience a shortage of electricity, and the reliability of our electricity grid will face substantial risks. The loss of future coal-fired generation, investment in current coal-fired generation, and closures of existing coal-fired generation capacity that may result from the combination of the proposed rule and other EPA regulatory actions risks a variety of reliability problems. In most cases, coal-fired plants cannot be replaced overnight by natural gas plants, as the time it takes to install pipeline and other infrastructure necessary even to begin conversion of an old plant or construction of a new one is considerable. Additionally, as NARUC Chair David Wright testified recently, coal-fired generation is an important aspect of “resource diversity,” and EPA needs to “recognize the needs of States and regions to deploy a diverse portfolio of cost-effective supply-side and demand-side resources based on their own unique circumstances and characteristics.”[14] ERCC is concerned that the proposed rule establishes a future for electricity generation that is narrowly prescribed to a small group of technologies, some of which do not even exist commercially at this time, and that EPA’s plan for the future risks disruption in the reliable supply of electricity.

EPA needs to carefully consider the consequences of polices that may not allow for a flexible and reliable supply of electricity, because the impacts of reliability problems can be devastating. The downside impacts of reduced electric reliability are substantial and must be taken into account in any responsible analysis of the proposed rule. As ISO New England has stated:

A reliable supply of electricity is a foundation of our prosperity and quality of life. Without it, our world literally grinds to a halt—businesses cannot plan and operate productively, hospitals and schools cannot provide their essential services, and residents cannot depend on the electricity they need simply to live their daily lives. Without reliable electricity, the financial and societal costs would be enormous.[15]

The Institute of Electrical and Electronics Engineers of the U.S. (IEE-USA) has further observed that even minor occurrences in the electric power grid can sometimes lead to catastrophic ‘cascading’ blackouts, and that the loss of a single generator can result in an imbalance between load and generation. The resulting blackouts cause incalculable economic damage. For example, the direct costs to high-technology manufacturing in the San Francisco Bay Area alone during the California blackouts alone ran as high as one million dollars a minute due to lost production, and the relatively brief Northeast blackout of 2003 cost business about $13 billion in lost productivity.[16] These are costs that the our economy and communities cannot afford to bear, and EPA needs to carefully consider reliability concerns before moving forward with the proposed rule.

#### Grid impact d is wrong—cascading blackouts likely

Peter Glaser, Troutman Sanders, LLP, 5/31/12, ADMINISTRATION ENERGY POLICIES, Congressional Testimony, Lexis

Impacts of the EPA Rules on the Reliability of the Electric Grid

The wave of retirements caused by EPA's rules - combined with the fact that most coalfueled units that are not retiring must be temporarily pulled from service in the next 2-3 years to install extensive pollution control equipment - threatens to undermine the reliability of the electric grid and to increase electric rates to consumers. The North American Electric Reliability Corporation (NERC), in its most recent long-term assessment of grid reliability, termed EPA regulation the number one risk to reliability. According to NERC, 1350 electric generating units at 525 stations will be required by these rules either to install controls or retire in the next several years.

This risk is being experienced across the gird, and the issue is not just whether the lights will stay on but how much it will cost to keep the lights on. Both the Electric Reliability Corporation of Texas (ERCOT), which is responsible for grid operations in most of Texas, and the Southwest Power Pool, which is responsible for grid operations in all or parts of 8 southwestern states, concluded that CSAPR threatens the ability of those organizations to keep the lights on. According to an SPP September 9, 2011 letter to EPA on CSAPR, there will be "negative implications to the reliable operation of the electric grid in the SPP region raising the possibility of rolling blackouts or cascading outages that would likely have significant impacts on human health, public safety and commercial activity." (Emphasis supplied.)

The Midwest Independent System Operator (MISO), which is responsible for interstate grid operations in a region consisting of all or parts of 11 U.S. states and the Canadian province of Manitoba estimates that 61 of 71 GW of baseload coal in the MISO region will require some action to comply with EPA's regulations over the next three years or sooner. Of those 61 GW, 13 GW are at immediate risk of retirement, according to MISO. MISO estimates that it will cost ratepayers $33 billion to retrofit or replace the 61 GW. MISO describes reserve margins as "plummeting." For example, "[r]etirement of 13 GW of coal-fired generation would cause MISO's current projected reserve margin for 2016 to plunge to 8.3 percent - 9.1 percent short of our required 17.4 percent reserve margin."

The problem may be similar in the 13-state (and District of Columbia) PJM region, where, according to PJM, 14 GW of generation have already announced plans to retire between May 2012 and 2015, "enough generation to produce enough power to supply Indiana's needs for a year." To alleviate the reliability problem, PJM recently approved nearly $2 billion to fund the cost of 130 separate electric transmission upgrades during this period. This is an unprecedented number of projects occurring simultaneously in the region, and with transmission development always being controversial and some of these projects requiring new rights-of-way, the prospect that all of these projects will not get built in time is concerning.

The recent PJM capacity auction for 2015-16 may be a harbinger of things to come. Capacity prices for PJM have been significantly increasing in the last several annual auctions, so that capacity payments for electricity delivered in 2015 - the year the UMACT takes effect - would be $137 per megawatt/month for most of PJM as compared to $16 today. This effect is most pronounced in northern Ohio, including Cleveland, which has significant transmission bottlenecks. In this area, capacity prices in the most recent auction skyrocketed to $357. These high capacity prices may occur in other regions to the extent PJM transmission upgrades do not keep up with EPA-forced coal plant retirements, and new bottlenecks emerge.

EPA's response to all of this is to say that any grid reliability problems are local and can be solved. It is true that, as EPA belatedly recognizes, the perhaps the greatest problem its regulations pose to grid reliability is "local" in the sense that many of the retiring units, although they don't run frequently, are needed for local reliability reasons - in order to provide voltage support and black-start capability, and to provide critical additional power to the grid on the hottest days of the year. But calling a problem "local" does not mean it is confined to someone's neighborhood. Last year's blackout in San Diego and other areas of the southwest that affected more than a million people began with the actions of a single utility worker in Yuma, Arizona. The Northeast blackout of 2003 that affected an estimated 10 million people in Ontario and 45 million people in eight U.S. states began with conditions on one utility's system in the same area of northern Ohio where the current bottleneck exists.

Failure to Study and Adequately Address Grid Reliability Problem

Perhaps the most interesting facet of how EPA's regulations will affect the grid is that no one, not EPA, not FERC or anyone else, has attempted to study what the actual impact will be - and therefore what the cost of maintaining grid reliability will be. EPA's assessment of the effect its own rules will have on grid reliability consists of rule-by-rule resource adequacy analyses that examine whether the number of retirements that EPA (under)predicts will cause regional generation to fall below reserve requirements. In conducting that assessment, EPA assumed that power on the grid flows freely within broad regions and between regions. But that assumption is demonstrably wrong, as the grid is subject to bottlenecks that impede the flow of power and local reliability requirements that require local generation or additional transmission.

As the Federal Energy Regulatory Commission (FERC), NERC, regional transmission organizations (RTOs) and Independent System Operators (ISOs), and others have told EPA, the key concern for grid reliability is where retirements occur, as a unit in a particular location that is forced to retire could cause cascading reliability problems even in a region with overall excess power reserves. As FERC Chairman Wellinghoff testified at a September 14, 2011 hearing before the Subcommittee on Energy and Power of the House Energy and Commerce Committee, regional and national resource adequacy studies of the type EPA conducted are "irrelevant" in assessing reliability. (Emphasis added). And as FERC Commissioner Moeller stated in an August 1, 2011 response to Senator Murkowski, referring to issues that relate to localized reliability concerns, "[a]ccording to the information that I received from Commission staff, they have pointed out to EPA that a reliability analysis should explore transmission flows on the grid, reactive power deficiencies related to closures, loss of frequency response, black start capability, local area constraints, and transmission deliverability." Yet this study was never done.

#### Extinction

Marlo Lewis, Senior Fellow Competitive Enterprise Institute, 6/25/2008, House Permanent Select Committee on Intelligence, House Select Committee on Energy Independence and Global Warming, http://cei.org/cei\_files/fm/active/0/Statement%2520of%2520Marlo%2520Lewis.pdf

Notice what they leave out. The report does not consider whether climate change policy could adversely affect the U.S. industrial base, the combat readiness of U.S. armed forces, global food and energy supplies, or international stability. Nor does it advise DOD to assess these risks in future studies.

So let’s consider some of the geopolitical risks global warming policies may create.

“Money,” an old adage declares, “is the sinews of war.” If we learned anything from the Cold War, it is that economic power is the foundation of military power. The Soviet Union imploded because it lacked the economic base to support its military and geopolitical empire. U.S. economic might was critical to winning the Cold War—as it was to winning World War I and World War II.

At the risk of belaboring the obvious, there is always in democratic politics a tradeoff between guns and butter. It is harder in tough economic times than in prosperous times to raise the funds required to recruit, train, and equip the armed forces. It is harder to sustain public support for military interventions abroad when unemployment and malaise are rising on the home front.

So to the extent that climate policies pose a risk to U.S. economic growth, they also pose a risk to U.S. military strength and defense preparedness.

In this light, let’s consider the Lieberman-Warner bill, which would require a 70-percent reduction in U.S. carbon dioxide emissions by 2050. CEI commissioned University of Guelph economist Dr. Ross McKitrick to assess both the economic impacts of the Lieberman-Warner bill and the Energy Information Administration’s analysis of the bill. The EIA estimates that up to 1 million manufacturing jobs could by lost by 2030.8 However, this is likely an underestimate, because the EIA’s reference case assumes rates of population growth, emissions growth, and income growth that are significantly lower than the long-term rates over the past 45 years.9

In his forthcoming paper, Dr. McKitrick explains that a society’s total emissions are a product of three factors: population, per capita GDP, and the carbon intensity of production. To reduce aggregate emissions, it is necessary to reduce one or more of those three factors. And there’s the rub.

Population is growing at +1.1 percent per year. There is not much Congress can do about that. Real income is growing at about +2.2 percent per year, and presumably Congress wants that to continue. So to reduce emissions 70 percent by 2050, the other factor— emissions intensity—must decline by the following approximate amounts:

• 4.4% per year on average between 2006 and 2012

• 5.2% per year on average between 2006 and 2030

• 6.2% per year on average between 2006 and 2050

Dr. McKitrick comments: “There is no historical precedent for such rapid reductions in carbon dioxide intensity.” Indeed, the historic rate of emissions intensity decline over the past 45 years is 1.6 percent per year.

If these somewhat miraculous reductions in carbon intensity do not occur, then the only way to reach the 70-percent emission reduction target will be through big increases in energy prices leading to big declines in economic growth. This is a recipe for stagflation and worse.

In another paper CEI has commissioned, Dr. McKitrick shows what happens to per capita GDP under several climate bills if population growth and emission intensity decline continue at their historic rates.

Instead of per capita GDP more than doubling between 2005 and 2060, it falls by half or more. The American dream becomes the American nightmare.

Does it have to happen that way? No. Technology breakthroughs that dramatically lower the cost of cutting emissions may occur. But it is in the nature of breakthroughs that they are difficult to plan or even predict. Thus, under these emission reduction mandates, there is a significant risk of severe economic damage.

So again let me state the obvious: An economically weakened America would be less able to sustain its defense commitments, keep the peace, and remain vigorously engaged in the world.

The top agenda item of many global warming activists today is stopping the construction of new coal-fired power plants. No new coal power plants should be built, we are told, unless they are equipped with carbon capture and sequestration. But it could take a decade to determine whether carbon capture and storage is economical under a range of emission reduction scenarios, years to develop the regulatory framework for a carbon capture system, years to overcome NIMBY opposition, and a decade to build the infrastructure on an industrial scale.10

In the meantime, U.S. electricity demand is growing, and coal is the fuel of choice in many markets. The EIA forecasts that between 2007 and 2030, coal will provide 67 percent of all new electric generation in the United States, and new coal generation will constitute 15 percent of all U.S. electric power in 2030.11

Moratoria that effectively ban new coal-based power could create a severe supply-demand imbalance. This would not only inflate electricity and natural gas costs (demand for coal would be diverted to natural gas as an electricity fuel), it would also jeopardize electric supply reliability. Indeed, some parts of the country may experience chronic energy crises characterized by repeated power failures and blackouts.

From a national security standpoint, this poses two main risks. One is that America will increasingly resemble a Third World country where nothing works very well. We will lose our international prestige and ability to lead by example. The other risk is that terrorists will view America’s over-stretched, failure-prone electricity grid as a tempting target. They may calculate: If America’s electric supply system is tottering on the edge, why not give it a few helpful shoves?

The anti-coal campaign is, of course, not limited to the United States. Global warming activists seek to ban new coal-fired power plants not only here but also in China, India, and other developing countries. This is essential to their agenda, and for a very simple reason. The emissions from new coal plants here and elsewhere will swamp all of the emission reductions that Europe, Japan, and Canada might, in theory, achieve under the U.N. global warming treaty, the Kyoto Protocol.12 Either the global warming movement kills coal, or coal will bury Kyoto.

The campaign to ban new coal worldwide raises additional national security concerns. First, how would a global moratorium on new coal plants be enforced, and by whom? Presumably this would be accomplished, initially, via trade sanctions. Already European and U.S. leaders are calling for carbon tariffs to penalize goods from countries like China and India that refuse to limit their emissions.13 Warning: Trade wars are not always resolved peacefully! In any event, if the United States vigorously presses for a ban on new coal plants around the world, it will continually butt heads with China, India, and many other developing countries.

We often hear that the world must reduce global emissions 50 percent by 2050 to avert the more dangerous effects of global warming. Those who say this may not realize the kind of sacrifice they are asking developing countries to make. Almost all the growth in emissions over the next few decades is expected to occur in developing countries.

Analysis by the Department of Energy shows that even if the industrialized countries somehow go cold turkey by 2050 and achieve zero net emissions, developing countries would still have to cut their emissions 57 percent below baseline projections to reduce global emissions 50 percent below 2005 levels.

The “energy source” is wood chopped from the forest. The “energy transmission” system is the backs of women and girls, hauling the wood a U.N.-estimated average of 3 miles each day. The “energy use” system is burning the wood in an open fire indoors for heat and light.

These villagers breathe indoor air that is much dirtier than outdoor air in the world’s most polluted cities. Respiratory disease among this large segment of humanity is rampant and kills more than a million people a year, most of them women and children. Reliance on traditional biomass also takes a heavy toll on forests and wildlife habitat.

A coal-fired power plant would improve the lives of those villagers in Kenya in many ways. Women would be freed from backbreaking toil and could pursue more fulfilling activities. People would be healthier because indoor air quality would improve. Refrigeration would make food preparation easier and safer. Electric lighting would allow people to read and study at night. Computers and Internet access would follow. The beautiful forests and the species dependent on them would be saved.

Denying these people—and millions of others like them—access to coal-based power would be a humanitarian disaster. Some might even call it a crime against humanity. Trapping people in energy poverty will very likely make them hungry, desperate, and angry. The potential for conflict within and among countries under a global ban on coal-based power may be quite large.

Schwartz and Randall warn that abrupt climate change would cause food shortages and destabilize governments. Well, during the past six months food riots have broken out in more than 30 countries, and in at least one case—Haiti—rioters brought down the government.15 Big jumps in the price of staples—corn, wheat, and rice—are pushing millions of people below the absolute poverty line.16

Today’s food price inflation has several causes including a weak dollar, high oil prices, drought, and surging demand in India and China. But one factor fueling this crisis is a global warming policy—government subsidies and mandates for corn ethanol production.17 Biofuels provide only about 1.5 percent of total motor fuel liquids, yet they accounted for almost half the increase in global consumption of major food crops in 2006-07, according to the World Bank.18 More aggressive efforts to replace petroleum with biofuels could literally starve the hungry, creating chaos and conflict.

Schwartz and Randall warn that abrupt climate change will create millions of environmental refugees fleeing across borders to escape from hunger and water shortages. Millions of illegal migrants already cross the U.S. southern border from Mexico. Poor Mexicans obtain 40 percent of their daily calories from tortillas, and the U.S. ethanol program, by inflating the price of corn, contributed to a “tortilla crisis” in Mexico.19 Burning food in gas tanks exacerbates the poverty that is a root cause of illegal migration. Expect an increase in ‘biofuel refugees’ as the mandates ramp up.

Schwartz and Randall warn that abrupt climate change, by intensifying winter storms and expanding sea ice, could reduce the availability of gas and oil, leading to conflict over dwindling resources. Well, this implies that non-abrupt climate change, which is far more likely, could make gas and oil more available by opening up the long-sought Northwest Passage.20

More importantly, since Kyoto-style policies aim to restrict access to fossil fuels, they too have the potential to engender conflicts over energy. Cap-and-trade programs force participants to compete over slices of a shrinking pie. That is how cap-and-trade is supposed to work. When it doesn’t work that way—as in phase one of the European Emissions Trading System—it is because companies and/or governments are cheating.21

#### NSPS collapses the economy and competitiveness

Bernard L. Weinstein, Ph.D. associate director of the Maguire Energy Institute and an adjunct professor of business economics in the Cox School of Business at Southern Methodist University in Dallas, September 2011, Proposed EPA Power-Sector Air Rules: Weakening Economic Recovery and Putting America’s Most Competitive Manufacturing Industries at Risk, http://pressdocs.cox.smu.edu/maguire/SMU\_Utility\_MACT\_Report.pdf

The causes of America’s economic malaise are many. In the aftermath of 2007’s financial crisis, credit has remained tight, especially for small and medium-sized businesses. With so many people unemployed or underemployed, consumer spending and retail sales are flat. Home prices continue to fall in many parts of the U.S., eating into home equity which for many households is their primary asset. Construction spending remains about 35 percent below its peak a few years ago due mainly to the drop in home building. And with a glut of foreclosure homes and distress sales on the market, home construction is not likely to rebound for several years. Household wealth has been further eroded by the recent drop in the stock market, and many families have chosen to use what resources they have to reduce their debt burdens rather than increase consumer spending.

Perhaps the only bright spot on the economic horizon of late has been a rise in manufacturing output and employment (see Figure 1). Though still below its 2007 peak, production from America’s factories has risen steadily for the past 18 months. In part, this reflects a modest recovery in the U.S. auto industry, but it is also a result of the growing competitiveness of American manufactured goods in the global marketplace. For example, last year U.S. exports of goods rose 21 percent to $1.28 trillion, the sharpest rise since 1988 (see Figure 2), and accounted for more than half of the economy’s growth. This increase enabled the United States to pass Germany and again become the world’s second-largest exporter, behind China. In addition, rising production costs in Asia coupled with a falling U.S. dollar have induced many American manufacturers to repatriate production that had moved abroad in years past.

The best hope for engendering a sustainable economic recovery is maintaining the growth and competitiveness of America’s industrial sector. Unfortunately, a spate of proposed environmental regulations may derail the renaissance in U.S. manufacturing, especially in industries that are energy-intensive.

II. Affordable and Reliable Electric Power: Critical for Viable U.S. Manufacturing

The federal government’s flagship energy efficiency program, EnergyStar, put the matter succinctly: “Manufacturing operations are among the most energy-intrusive in the U.S. . . . Manufacturers produce heat and operate machinery using a variety of energy types ranging from conventional sourced, such as electricity and natural gas, to non-conventional fuels . . . Energy should be managed with the same expertise as other parts of the business.”1

Should any combination of policies serve to increase electricity price, reduce the reliability of energy sources, and also increase natural gas prices, the clear impact on economic growth in the manufacturing sector will be negative. As Dr. Margo Thorning has testified, “Higher energy prices slow economic growth.” In the case of environmental standards that burden or reduce coal capacity and create the basis for fuel shifting to natural gas or other more expensive fuels, the effect can be profound. Dr. Thorning in modeling the effect of carbon legislation—a policy choice similar on impact to energy-intensive industries—found adverse impacts as high as 1.8 million jobs by 2020 and 4.1 million jobs by 2030.2

The manufacturing sector is acutely sensitive to change in energy cost. Even if the particular manufacturer does not fall within the traditional definition of energy-intensive, the extraction of commodity inputs necessary for manufacturing and the supply and distribution after the point of manufacturing are likely to be energy dependent as well, thus making the most efficient of manufacturers nevertheless dependent on affordable and reliable power.

Beyond input and distribution costs, an escalating price for energy also creates a drag on investment confidence in the manufacturing sector. Observing that manufacturers “use large amounts of electricity made from fossil fuels, especially coal,” Professor Hayden Murray of Indiana University found that, “One of the most significant reasons for lack of investor confidence in the economy is the enormous cost of environmental regulation.”3 Sensitivity to energy costs can directly result in displacement of manufacturing jobs. A report from the International Trade Administration (ITA) of the U.S. Department of Commerce found that “the relative sensitivity between the domestic manufacturing sector to the changes in the price of energy intensive inputs such as electricity could create substantial labor displacement in the U.S. economy.”4

The conclusion drawn from the foregoing analyses is clear: the United States cannot create manufacturing jobs of sufficient quantity and quality to recover from the current economic downturn without maintaining a moderate price and affordable supply of energy.

Thorning found:

higher energy prices will make it harder to restart U.S. economic and jobs growth. Each one percent increase in U.S. GDP growth is accompanied by a 0.3 percent increase in energy use. Therefore, the higher the price of energy, the slower the rate of economic recovery.5

The wider effect on the economy at large is clear. As the manufacturing sector is held in check, so too is the economy at large. As IECA noted, “The U.S. cannot grow the economy without using more volume of [industrial] products. The only question is whether the product will be supplied from domestic sources or imports.”6

III. Projected Cost Impact on Manufacturing of Two New EPA Regulations

Many of America’s most globally competitive industries are energy-intensive. Indeed four industries alone—iron and steel, aluminum, paper and pulp, and chemicals—account for nearly half of the energy consumed by U.S. manufacturing industries and more than 10 percent of total U.S. energy production.7 The preferred energy delivery method for these and most other manufacturing industries is electricity.

As indicated in Figure 3, coal accounts for about 45 percent of America’s electric power generation capacity. Though coal’s share of power generation has decreased somewhat over the past decade, coal-fired electricity is the cheapest to produce and has helped maintain America’s competitive advantages in many energy-intensive manufacturing industries. What’s more, coal is an abundant domestic resource.

The U.S. Environmental Protection Agency (EPA) has proposed two new air quality rules that will result in substantial threats to both employment and competitiveness of U.S. manufacturers. The first is the Cross-State Air Pollution Rule (CSAPR) that would cap key emissions that cross state lines, and the second is the Utility Maximum Achievable Control Technology (Utility MACT) Rule that would set absolute limits on mercury and other chemical emissions. As proposed, the Utility MACT would be the most expensive direct rule in EPA history. Indeed, the EPA itself has estimated it would impose costs of about $11 billion a year on the U.S. economy, though third-party estimates of compliance costs are considerably higher.8 For example, a recent analysis by National Economic Research Associates (NERA) finds that complying with the proposed standards would cost power companies close to $18 billion per year for the next twenty years.9

Some coal-fired plants would be so expensive to retrofit that they would simply be shut down. The NERA study projects that about 48 gigawatts of coal generation would be retired over the next five years, representing a 13 percent decline. New natural gas generators would be the most likely substitutes for these shuttered facilities, and the increased demand for gas is estimated by NERA to push up gas prices by about 17 percent by 2016. Higher prices, in turn, would increase natural gas expenditures by the residential, commercial, and industrial sectors of the economy by $85 billion (present value over 2011-2030 in 2010$) or $8.2 billion per year. Average retail electricity prices would jump by about 12 percent with some parts of the country recording increases as high as 24 percent.

In addition to CSAPR and Utility MACT, EPA has promulgated several other rules with compliance deadlines before 2015 that will affect the utility sector. These include greenhouse gases from new and modified sources, air quality standards for sulphur dioxide and nitrous oxide, and new standards for ash and other residuals from coal combustion. Taken together, these regulations will impact about 400,000 megawatts of oil and coal-fired power generation, almost 40 percent of currently available U.S. capacity. Should all of the proposed implementation deadlines remain unchanged, the reliability of the entire U.S. power grid could be compromised.

The utility industry is already laboring to comply with these and a myriad of other EPA mandates. If the agency sticks to its three year compliance timeline, the result could well be a reduction in reserve margins, making less power available during periods of peak demand or plant outages. Imagine what would have happened in Texas and other southern states that rely heavily on coal-fired generation during the record summer heat wave of 2011 if adequate reserve power had not been available? Not only would many energy-intensive industries have been forced to shut down, but rolling blackouts could have put the public’s health at risk in the face of 100 degree plus temperatures week after week.

This prospect was highlighted in a recent statement by the Electric Reliability Council of Texas, which operates the state grid, to the effect that likely production cuts in 2012 to comply with the CSAPR rules would “threaten the state’s ability to keep the lights on.”10 American Electric Power Company has stated it will retire nearly 6,000 megawatts (MW) of generating capacity in response to the CSAPR rules while Duke Energy will shutter 862 MW and Georgia Power another 871 MW.11

At the same time, by substituting higher-cost electricity (natural gas) for lower-cost electricity (coal), the cost of energy for consumers will invariably rise. Additionally, as a recent report by Bloomberg New Energy Finance has noted, consumers are also likely to bear the increased cost of capacity payments (the cost for utilities to go into the wholesale market and purchase actually available energy) which Bloomberg estimates will also rise rapidly by 2015 as “intermittent resources like wind and solar force [Independent System Operators] to pay to keep gas-peaking plants online even though they’re not used enough to be profitable based on electricity sales.”12 These increased energy costs mean that many energy-intensive industries would see their overall production costs rise while their competitive advantages in the global marketplace decline. At risk are not only tens of thousands of high-paying jobs but a worsening of America’s balance of trade.

There can be little doubt that the suite of rules contemplated by EPA—imposed as they are on U.S. manufacturing interests and not on their foreign competitors—are likely to have profound adverse economic consequences for energy-intensive manufacturing. The consensus of economic literature regarding carbon caps is instructive. McMackin (2009) observed that because, “Energy costs are a substantial portion of these producers’ manufacturing cost,” it is likely that, “production of energy intensive goods may well shift to unregulated countries.”13 The Yudkin/High-Road Strategies report also found that unequal imposition of regulatory burden can send energy-intensive manufacturers overseas. They wrote, “If nothing is done to help these companies, many of them will close or move overseas.”14 ACEEE (2011) describes a “prevalent concern” among energy-intensive manufacturers that environmental standards applied on a national basis “will increase energy costs and potentially compromise the global competitiveness of these energy-intensive and trade-exposed industries.”15 The Nicholas Institute at Duke University (2009) likewise noted that regulations “might provide a comparative advantage” to other less regulated countries, “leading to loss of competitive advantage” and a potential “migration of manufacturing” overseas.16 ITA (2010) speaks to “potential domestic effects and international trade shifts that could be affected by changing energy costs. . . higher energy input costs may cause U.S. production to shift to countries that have not matched” regulation in the United States.17

IV. The Importance of Energy-Intensive Manufacturing to the U.S. Economy

Though manufacturing employment has declined markedly over the past half-century, the industrial sector still accounts for 12 percent of gross domestic product (GDP) and millions of high-wage jobs. It is also the sector that has posted the sharpest productivity gains over the past 40 years. For example, real output per worker in manufacturing was $60,000 in 1970, but by 2010, real output per worker had jumped to $150,000 (see Figure 4).

What’s more, manufacturers typically have strong backward and forward linkages with other sectors of the economy. According to the IMPLAN input-out model, most manufacturing industries reveal very high employment “multipliers,” meaning that one job in manufacturing may support many other jobs across the economy.18

The employment multipliers for “energy-intensive” manufacturers are especially high. For example, a multi-billion dollar refinery or petrochemical plant may only employ several hundred workers on site. However, the inputs to the manufacturing process, along with transportation, distribution and sale of refined products, generate substantial upstream and downstream employment. Indeed, according to IMPLAN, the jobs multiplier for petroleum refineries is 36.3, the highest of any industry in the country. For iron and steel, the multiplier is 12.3 and for pulp and paper it’s 9.7.

The most recent U.S. Census of Manufacturers found that the 10 most energy-intensive manufacturing industries employed almost 1.2 million workers across the U.S.A. (see Table 1). Using a conservative employment multiplier of eight, we can say these 10 industries are supporting at least 9.6 million additional workers across the economy. What this suggests, of course, is that when energy-intensive manufacturing is expanding, the spillover benefits to the rest of the economy are huge.

However, employment multipliers work in both directions. Should America’s manufacturers, and in particular our energy-intensive industries, be forced to reduce capacity and lay off workers in response to externally-imposed energy cost increases such as those that would inevitably attend the rapid implementation of CSAPR and MACT, job losses would be recorded in many other industries as well. Put differently, for every job lost in an energy- intensive manufacturing industry, many more jobs will disappear across the economy.

A study prepared a decade ago on the manufacturing job losses associated with the 1970 and 1977 Clean Air Act Amendments found that in the first 15 years after the Amendments became law (1972-1987), nonattainment counties lost approximately 590,000 jobs, $37 billion in capital stock, and $75 billion (1987$) of production activity.19 And these were just the “direct” losses. Based on a multiplier of eight, up to 4.7 million additional jobs may have been destroyed across the U.S. as a consequence of the 1970 and 1977 Amendments.

The likely job losses from implementation of CSAPR and Utility MACT as proposed would also be significant. While it is not possible to know exactly what job loss or plant closures may result from loss of comparative energy advantage to manufacturing, these estimates derive from BEA employment data, an average multiplier resulting from the IMPLAN input-output model and historical studies like ITA which indicate the potential for “substantial labor displacement” in the event of pricing changes to energy-intensive inputs. Should implementation of the rules result in a 10 percent reduction of employment in America’s 10 most energy-intensive industries listed above, 117,300 on site jobs would disappear. However if we use a conservative employment multiplier of eight, those direct losses would translate into more than one million total job losses across the nation over the next decade.20 And these estimates do not include potential job losses among less energy-intensive manufacturing industries, the coal industry, and electric utilities.21

V. Small Businesses and Consumers Affected by CSAPR and Utility MACT

As mentioned above, the recent NERA study projects higher retail electric prices between 12 and 24 percent by 2016 under the proposed implementation of CSAPR and MACT. Unlike large companies, small businesses and individual households don’t have the market power to negotiate lower rates with utility companies and therefore have to pay full retail for the power they consume. For example, an analysis by the Illinois Power Agency concludes “each power generator will have to decide whether the investment required to meet environmental regulations can be justified based on its projection of market prices and the cost of capital. In any case, those costs will be passed through to consumers.”22

At a time when the economy may be poised for a double-dip recession, with thousands of small businesses and millions of households struggling to pay their bills, higher electricity costs will surely diminish the pace of hiring by small businesses while further eroding the discretionary income of American households. Despite this, based on the analysis it has placed in the regulatory docket, it is entirely unclear whether and to what extent EPA even analyzed and considered the impact of Utility MACT on small businesses—an analysis required of rulemaking agencies under the Regulatory Flexibility Act. As the Small Business Association’s Office of Advocacy noted in its comments on the proposed rule, “EPA has not presented evidence that it has seriously considered the impact this rule will have on small entities or available regulatory alternatives that would minimize that impact . . . EPA has . . . proposed a rule that imposes greater costs on small entities than is necessary under the Clean Air Act.” This prospect does not bode well for an early economic rebound.

VI. A Sensible and Reasonable Path Toward Improved Air Quality

In short, EPA’s CSAPR and Utility MACT rules, when combined with a plethora of other proposed and planned regulations, will retard the prospects for America’s economic recovery and will result in significantly higher costs for America’s slowly recovering manufacturing industries, especially those that require large amounts of energy in their production processes.

Growth in our manufacturing sector, with its strong export orientation, offers the best hope for a sustainable economic recovery. With unemployment stuck at more than nine percent and many Americans too discouraged to even look for a job, it makes little sense to erode the global competitive advantages of our most productive industries. At the same time, the aggressive nature of EPA’s proposals will raise the costs of providing electricity at both the wholesale and retails levels putting additional rate burdens on businesses and households during a time of serious economic stress.

#### Studies prove energy costs are key

Margo Thorning, Ph.D., Senior Vice President and Chief Economist American Council for Capital Formation, 2/9/11, The Impact of EPA Regulation of GHGs under the Clean Air Act on U.S. Investment and Job Growth, http://accf.org/wp-content/uploads/2011/02/House-Energy-Commerce-Testimony-292011-FINAL.pdf

While it is true that a certain number of jobs may be created in some industries that build the energy efficient equipment mandated by regulators, overall, however, the evidence suggests that the total impact on U.S. net job growth will be negative. The main effect of EPA mandating BACT for GHG reduction under the CAA will be to make energy more expensive and to increase production costs (relative to a baseline forecast). Substituting more expensive energy and higher production costs for cheaper energy and lower production costs causes a slow down in productivity growth and economic activity. Historically, each one percent increase in U.S. GDP growth is accompanied by a 0.2 percent increase in energy use; therefore, the higher the price of energy, the slower the rate of economic recovery. As costs rise in energy intensive industries, output tends to fall, there are fewer new jobs created because the total economic “pie” grows more slowly, relative to a baseline forecast.

The initial adverse impact on job growth may be due to delays in getting PSD and Title V permits (which means delays in starting construction). However, in the longer term, the reason that overall job growth is likely to be slower when EPA begins to mandate BACT for GHG reductions is that companies will have to try to pass on the higher costs of the new BACT requirements to their customers and also pass back the additional costs to workers and shareholders in the form of lower wages and smaller returns on equity investments.

The economic impact of EPA regulation of GHG emissions of stationary sources is likely to be more severe than if a market-based approach were employed. Therefore, analyses like the one performed on the Kerry/Lieberman bill can be used to benchmark the harm from EPA’s Clean Air Act GHG program. The results of the ACCF/SBEC macroeconomic analyses on the Kerry/Lieberman bill show that higher energy prices and more costly production methods will make it harder to keep the U.S. economic recovery going and to reduce the unemployment rate (see study at: http://www.accf.org/publications/137/accf-sbe-council-study-on-kerry-lieberman-bill).

Other results of rising costs driven by EPA’s GHG regulations are loses in investment in U.S. production and losses of domestic and export market share by U.S. firms. One of the factors that causes businesses to locate new investment abroad is policies or market-driven events that raise energy costs or other costs of production. This, in turn, leads to a shift in the share of global production from domestic producers to firms located oversees. As a result, “leakage” of both jobs and GHG emissions occurs. Where the “leakage’ is to countries with lax environmental controls and more energy-intensive production methods, the result is a net increase in global GHG emissions. In addition, under EPA’s GHG permitting requirements, there will be no “border tax adjustments” as there are in recent U.S. cap and trade bills to help energy intensive industries adjust to higher production and energy costs.

U.S key to the global economy

**Caploe 9** (David Caploe is CEO of the Singapore-incorporated American Centre for Applied Liberal Arts and Humanities in Asia., “Focus still on America to lead global recovery”, April 7, The Strait Times, lexis)

IN THE aftermath of the G-20 summit, most observers seem to have missed perhaps the most crucial statement of the entire event, made by United States President Barack Obama at his pre-conference meeting with British Prime Minister Gordon Brown: 'The world has become accustomed to the US being a voracious consumer market, the engine that drives a lot of economic growth worldwide,' he said. 'If there is going to be renewed growth, it just can't be the US as the engine.' While superficially sensible, this view is deeply problematic. To begin with, it ignores the fact that the global economy has in fact been 'America-centred' for more than 60 years. Countries - China, Japan, Canada, Brazil, Korea, Mexico and so on - either sell to the US or they sell to countries that sell to the US. This system has generally been advantageous for all concerned. America gained certain historically unprecedented benefits, but the system also enabled participating countries - first in Western Europe and Japan, and later, many in the Third World - to achieve undreamt-of prosperity. At the same time, this deep inter-connection between the US and the rest of the world also explains how the collapse of a relatively small sector of the US economy - 'sub-prime' housing, logarithmically exponentialised by Wall Street's ingenious chicanery - has cascaded into the worst global economic crisis since the Great Depression. To put it simply, Mr Obama doesn't seem to understand that there is no other engine for the world economy - and hasn't been for the last six decades. If the US does not drive global economic growth, growth is not going to happen. Thus, US policies to deal with the current crisis are critical not just domestically, but also to the entire world. Consequently, it is a matter of global concern that the Obama administration seems to be following Japan's 'model' from the 1990s: allowing major banks to avoid declaring massive losses openly and transparently, and so perpetuating 'zombie' banks - technically alive but in reality dead. As analysts like Nobel laureates Joseph Stiglitz and Paul Krugman have pointed out, the administration's unwillingness to confront US banks is the main reason why they are continuing their increasingly inexplicable credit freeze, thus ravaging the American and global economies. Team Obama seems reluctant to acknowledge the extent to which its policies at home are failing not just there but around the world as well. Which raises the question: If the US can't or won't or doesn't want to be the global economic engine, which country will? The obvious answer is China. But that is unrealistic for three reasons. First, China's economic health is more tied to America's than practically any other country in the world. Indeed, the reason China has so many dollars to invest everywhere - whether in US Treasury bonds or in Africa - is precisely that it has structured its own economy to complement America's. The only way China can serve as the engine of the global economy is if the US starts pulling it first. Second, the US-centred system began at a time when its domestic demand far outstripped that of the rest of the world. The fundamental source of its economic power is its ability to act as the global consumer of last resort. China, however, is a poor country, with low per capita income, even though it will soon pass Japan as the world's second largest economy. There are real possibilities for growth in China's domestic demand. But given its structure as an export-oriented economy, it is doubtful if even a successful Chinese stimulus plan can pull the rest of the world along unless and until China can start selling again to the US on a massive scale. Finally, the key 'system' issue for China - or for the European Union - in thinking about becoming the engine of the world economy - is monetary: What are the implications of having your domestic currency become the global reserve currency? This is an extremely complex issue that the US has struggled with, not always successfully, from 1959 to the present. Without going into detail, it can safely be said that though having the US dollar as the world's medium of exchange has given the US some tremendous advantages, it has also created huge problems, both for America and the global economic system. The Chinese leadership is certainly familiar with this history. It will try to avoid the yuan becoming an international medium of exchange until it feels much more confident in its ability to handle the manifold currency problems that the US has grappled with for decades. Given all this, the US will remain the engine of global economic recovery for the foreseeable future, even though other countries must certainly help. This crisis began in the US - and it is going to have to be solved there too.

#### Extinction

Kemp 10

Geoffrey Kemp, Director of Regional Strategic Programs at The Nixon Center, served in the White House under Ronald Reagan, special assistant to the president for national security affairs and senior director for Near East and South Asian affairs on the National Security Council Staff, Former Director, Middle East Arms Control Project at the Carnegie Endowment for International Peace, 2010, The East Moves West: India, China, and Asia’s Growing Presence in the Middle East, p. 233-4

The second scenario, called Mayhem and Chaos, is the opposite of the first scenario; everything that can go wrong does go wrong. The world economic situation weakens rather than strengthens, and India, China, and Japan suffer a major reduction in their growth rates, further weakening the global economy. As a result, energy demand falls and the price of fossil fuels plummets, leading to a financial crisis for the energy-producing states, which are forced to cut back dramatically on expansion programs and social welfare. That in turn leads to political unrest: and nurtures different radical groups, including, but not limited to, Islamic extremists. The internal stability of some countries is challenged, and there are more “failed states.” Most serious is the collapse of the democratic government in Pakistan and its takeover by Muslim extremists, who then take possession of a large number of nuclear weapons. The danger of war between India and Pakistan increases significantly. Iran, always worried about an extremist Pakistan, expands and weaponizes its nuclear program. That further enhances nuclear proliferation in the Middle East, with Saudi Arabia, Turkey, and Egypt joining Israel and Iran as nuclear states. Under these circumstances, the potential for nuclear terrorism increases, and the possibility of a nuclear terrorist attack in either the Western world or in the oil-producing states may lead to a further devastating collapse of the world economic market, with a tsunami-like impact on stability. In this scenario, major disruptions can be expected, with dire consequences for two-thirds of the planet’s population.

#### Our impact is statistically robust

Jedidiah **Royal 10**, Director of Cooperative Threat Reduction at the U.S. Department of Defense, “Economic Integration, Economic Signalling And The Problem Of Economic Crises”, in Economics of War and Peace: Economic, Legal and Political Perspectives, ed. Goldsmith and Brauer, p. 213-215

Second, on a dyadic level. Copeland's (1996. 2000) theory of trade expectations suggests that 'future expectation of trade' is a significant variable in understanding economic conditions and security behaviour of states. He argues that interdependent states are likely to gain pacific benefits from trade so long as they have an optimistic view of future trade relations. However, if the expectations of future trade decline, particularly for difficult to replace items such as energy resources, the likelihood for conflict increases, as states will be inclined to use force to gain access to those resources. Crises could potentially be the trigger for decreased trade expectations either on its own or because it triggers protectionist moves by interdependent states.4 Third, others have considered the link between economic decline and external armed conflict at a national level. Blomberg and Hess (2002) find a strong correlation between internal conflict and external conflict, particularly during periods of economic downturn. They write, The linkages between internal and external conflict and prosperity are strong and mutually reinforcing. Economic conflict tends to spawn internal conflict, which in turn returns the favour. Moreover, the presence of a recession lends to amplify the extent to which international and external conflicts self-rein force each other. (Blombcrj! & Hess. 2002. p. 89) Economic decline has also been linked with an increase in the likelihood of terrorism (Blomberg. Hess. & Weerapana, 2004). which has the capacity to spill across borders and lead to external tensions. Furthermore, crises generally reduce the popularity of a sitting government. "Diversionary theory" suggests that, when facing unpopularity arising from economic decline, sitting governments have increased incentives to fabricate external military conflicts to create a 'rally around the flag' effect. Wang (1996), DeRouen (1995), and Blombcrg. Mess, and Thacker (2006) find supporting evidence showing that economic decline and use of force are at least indirectly correlated. Gelpi (1997), Miller (1999). and Kisangani and Pickering (2009) suggest that the tendency towards diversionary tactics arr greater for democratic states than autocratic states, due to the fact that democratic leaders are generally more susceptible to being removed from office due to lack of domestic support. DeRouen (2000) has provided evidence showing that periods of weak economic performance in the United States, and thus weak Presidential popularity, are statistically linked to an increase in the use of force.

#### Competitiveness decline triggers great power wars

Baru 9 (Sanjaya, Visiting Professor at the Lee Kuan Yew School of Public Policy in Singapore Geopolitical Implications of the Current Global Financial Crisis, Strategic Analysis, Volume 33, Issue 2 March 2009 , pages 163 – 168)

The management of the economy, and of the treasury, has been a vital aspect of statecraft from time immemorial. Kautilya’s Arthashastra says, ‘From the strength of the treasury the army is born. …men without wealth do not attain their objectives even after hundreds of trials… Only through wealth can material gains be acquired, as elephants (wild) can be captured only by elephants (tamed)… A state with depleted resources, even if acquired, becomes only a liability.’4 Hence, economic policies and performance do have strategic consequences.5 In the modern era, the idea that strong economic performance is the foundation of power was argued most persuasively by historian Paul Kennedy. ‘Victory (in war),’ Kennedy claimed, ‘has repeatedly gone to the side with more flourishing productive base.’6 Drawing attention to the interrelationships between economic wealth, technological innovation, and the ability of states to efficiently mobilize economic and technological resources for power projection and national defence, Kennedy argued that nations that were able to better combine military and economic strength scored over others. ‘The fact remains,’ Kennedy argued, ‘that all of the major shifts in the world’s military-power balance have followed alterations in the productive balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the major Great Power wars, where victory has always gone to the side with the greatest material resources.’7

#### Our theory of economics is true

Edward Alden 2-4, senior fellow at CFR, “Why Manufacturing Really Matters: Gary Pisano and Willy Shih on Innovation”, http://blogs.cfr.org/renewing-america/2013/02/04/why-manufacturing-really-matters-gary-pisano-and-willy-shih-on-innovation/

If there is any consensus in the debate over how to revitalize the American economy, it is over innovation. Innovation, we can all readily concur, is the only way for an advanced economy like the United States – which cannot grow by copying and imitating others – to continue to boost productivity and raise living standards. But understanding why useful innovations occur, and what if anything governments can do to foster them, quickly degenerates into a clash between free market absolutists and industrial policy aficionados.

In their book Producing Prosperity: Why America Needs a Manufacturing Renaissance, Harvard Business School professors Gary Pisano and Willy Shih cut through the confusion. In just 138 pages – a perfect read for the Washington to New York Acela – they offer the most compelling case I have read for why making things matters, even if it will produce very few manufacturing jobs in the future. Pisano is an economist with particular expertise in the biotechnology industry, and Shih is a professor of management practice who spent a career in senior executive positions at IBM, Digital Equipment, Silicon Graphics, and Kodak. I had the pleasure of hosting both at a roundtable meeting at the Council on Foreign Relations in New York on February 1. (We had scheduled the meeting for several months ago but our plans were blown away by Hurricane Sandy.)

They demolish the comforting story that many economists have offered to dismiss concerns over the shrinking role of manufacturing in the U.S. economy. The conventional argument goes like this: it makes more economic sense to locate the actual production of goods in lower-wage countries, while the United States maintains the skilled parts of the supply chain – R&D, branding, marketing, etc. The classic example here is Apple: most of the value of an iPhone or iPad comes from the design, software, branding and retailing, not from the assembly. Therefore, U.S.-headquartered Apple can become the most valuable company in the world even while making virtually nothing in the United States.

But it turns out this model is not very replicable (and may not even work very well for Apple in the longer run). The reason is that new technological innovations often come from what is learned in the manufacturing and development of earlier technologies. It is not enough to have a good idea: Bell Labs invented the photovoltaic (PV) cell, but production has been almost entirely in Asia, where all the key component suppliers are located and the manufacturing knowledge now largely resides.

The loss of manufacturing production can have lasting knock-on effects. Willy Shih, who led the consumer digital business for Kodak in the late 1990s, tells the story of how Kodak missed the digital camera revolution. It was not through ignorance – in fact the company had long been working on digital technologies and produced one of the first consumer digital cameras, in 1994. But Kodak had largely exited the camera business in the 1960s, deciding (quite logically at the time) that the real profits were in film. The camera business moved offshore to Japan. As a result, when Kodak decided to begin making digital cameras in the United States, there was no supplier network; all the critical components were being made in Japan. In 1998, Kodak shut down its digital assembly line in Rochester and moved it to Japan to be closer to suppliers.

One of the compelling things about their analysis is that they do not argue that it always, or even mostly, makes sense for U.S. companies to manufacture in the United States. Only in certain sorts of industries is it critical that research and manufacturing be kept in close proximity. For mature technologies with established production processes – such as desktop computers, consumer electronics, commodity semiconductors – outsourcing is a sensible business strategy. But where production processes are rapidly evolving – advanced semiconductors, biotech drugs, and nanomaterials to name just a few – the loss of production can quickly lead to the loss of any innovative edge. And over time the research capabilities will follow production. Applied Materials, for example, moved its chief technical officer to Asia in 2010 because it made more sense to locate research capabilities closer to the company’s largest customers in China, Taiwan, and South Korea.

Nor do Pisano and Shih promise that manufacturing will again become a big jobs engine for the United States. Companies that are investing in U.S. manufacturing are also investing heavily in automation. Manufacturing will still produce some good jobs, but the compelling reason to retain and attract manufacturing is not for employment, but to retain the production know-how and supplier networks that are the key to future innovation – which will in turn spin off new job opportunities.

#### Coal’s key to cloud computing

PennEnergy, 4/23/12, Cloud computing relying on coal-fired generation, www.pennenergy.com/articles/pennenergy/2012/04/cloud-computing-relying.html

A recent report released by environmental group Greenpeace highlighted that many of the country's largest internet companies, some of those responsible for the emerging shift toward cloud computing, are increasingly relying on coal-fired generation.

Cloud computing has been a growing field in the U.S., both for commercial use and for private consumption, requiring a dramatic increase in energy usage as more and more data centers spring up around the country.

The industry has traditionally been tied to Silicon Valley, the center of the initial digital revolution, where coal-fired power plants play a limited role in power generation. As the industry has grown, however, many companies have moved their data centers steadily eastward where they can be closer to ultimate end users and electricity prices are sometimes lower.

Although the percentage of power coming from coal-fired generation has steadily declined in the East Coast, it still accounts for a substantial proportion. It is important to note that beyond location, technology companies have only marginal control over the source of electricity powering their data centers, which is generally managed on a state level .

#### That’s key to sustain the internet

Mark Mills, senior fellow of the Manhattan Institute, 5/31/11, Opportunity In The Internet's Voracious Energy Appetite: The Cloud Begins with Coal (and fracking), www.forbes.com/sites/markpmills/2011/05/31/opportunity-in-the-internets-voracious-energy-appetite-the-cloud-begins-with-coal-and-fracking/

High-tech products require an astounding 1,000 times more energy per kilogram to manufacture than the materials that dominated the 19th and 20th centuries. Few things are as energy-intensive to produce as the miraculous silicon graphics-processing units and memory chips which are the building blocks of the 21st century ubiquitous video paradigm. It takes a couple of kilowatt-hours to make a tiny square centimeter of silicon device that weighs about four-one-thousandth of a pound. You can make several pounds of steel with that much electricity. And we manufacture silicon devices countable in square miles each year.

Overall, it takes roughly 35 times more energy just to make a pound of smart phone or notebook PC, as it does to make a pound of book. And we keep books, at least those of us that still buy books, for years, even centuries. It takes on the order of 20 times more energy to make the network video hardware (allocated pro-rata) than to manufacture a plastic DVD. Everything takes energy to build. But unlike cars and a lot of other goods which see service for a decade or more, most digital hardware has a useful life averaging three years. So when annualizing energy costs of digital device manufacturing, you amortize over a short time.

And the grand total, the “net net” for the Cloud’s appetite when you count all four aspects of energy associated with digital hardware? Well, certainly much more than the oft-cited fact that ‘only’ two percent of U.S. electricity is used by data centers, since that counts, well, just data centers. Account for the other three factors around and in the Cloud and the total appetite is north of 10 percent of national electricity use. So the U.S. digital economy uses roughly as much electricity the entire country of England, likely more.

For some, this may seem like an environmental problem. For many, it is more of an operational challenge in achieving yet more growth with minimal fiscal, not just environmental, energy-related costs. In a now ten-year-old pioneering study, The Internet Begins With Coal, and a related co-authored Forbes article (Dig More Coal: The PCs Are Coming) I set off a firestorm of environmental protest (and frankly, some puerile commentary). The main problem with past and many current protestations about estimating the digital economy’s energy appetite lies in a myopic focus on data centers, and failure to consider all aspects of the digital infrastructure.

As for the future, doubtless we’ll continue to hear what we’ve heard for years. Technology will make digital stuff more efficient so the energy ‘problem’ will be ameliorated if not conquered. We’ve seen this play before. Radical efficiency gains have occurred; but these efficiency gains are precisely what created, and creates more overall demand. And more efficiency gains are coming.

Intel [NASDAQ: INTC] has announced it will cut energy appetite of microprocessors almost three-fold. Data storage is practically free and getting cheaper in both energy and dollar terms per byte – consider what it costs for a 10 GB memory stick today compared to a few years ago, or terabytes of back-up at Carbonite. Overall data center efficiency has also soared in recent years as “virtualization” algorithms have radically improved the utilization of the thousands of servers under roof.

The technical literature is filled with ideas, designs and materials in power electronics and software with potential to increase energy efficiency in cell towers, data centers and handhelds, some by as much as 30 to 50 percent. A similar trend characterized the emergence of the auto age.

Car engine energy efficiency improved 500 percent pound-for-pound from early years to the late 20th century. Greater efficiency made it possible to make better, more featured, safer, usually heavier and more affordable cars. So rising ownership and utilization lead to 400 percent growth in transportation fuel use since WWII. The flattening of automotive energy growth in the West is a recent phenomenon as we finally see near saturation levels in road-trips per year and cars-per-household. We are a long way from saturation on video ‘trips’ on the information highways.

Efficiency gains are precisely what creates and increases overall traffic and energy demand; more so for data than other service or products. From 1950 to 2010, the energy efficiency of information processing improved ten trillion-fold in terms of computations per kWh. So a whole lot more data-like machines got built and used — consequently the total amount of electricity consumed to perform computations increased over 100-fold since the 1950s – if you count just data centers. Count everything we’re talking about here and the energy growth is beyond 300-fold.

Fundamentally, if it were not for more energy-efficient logic processing, storage and transport, there would be no Google or iPhone. At the efficiency of early computing, just one Google data center would consume more electricity than Manhattan. Efficiency was the driving force behind the growth of Internet 1.0 as it will be for the wireless video-centric Internet 2.0. In energy terms, video traffic is the equivalent of migrating all car drivers from Civics to Tahoes. So power use and hardware to produce and manage it will get dragged along for the ride.

Who is playing in these energy fields? Not surprisingly, all the data guys themselves, from Google, as noted, to Microsoft [NASDAQ: MSFT], HP [NYSE: HPQ], Cisco [NASDAQ: CSCO], IBM [NYSE: IBM], Juniper [NYSE: JNPR], Intel – all of them.

Running below the typical excitement radar is a constellation of traditional old-world electric-equipment companies, both large and small, who make all the power electronics components, devices and services that are now the ascendant and often primary costs across the data domain, especially in data centers, commercial enterprises, and manufacturing plants. Familiar names like GE [NYSE: GE], Eaton [NYSE:ETN], Emerson [NYSE: EMR], Siemens [NYSE: SI], ABB [NYSE: ABB], Honeywell [NYSE: HON], Johnson Controls [NYSE: JCI], and Schneider [FR: SU-FR]. Check any of their web sites and you’ll see lots of chest-thumping about powering the digital economy.

There is a grand convergence going on between the old economy’s electrical infrastructure, and the new economy’s digital infrastructure. There is, as well, a symmetrical convergence taking place over in the utility sector’s smart grid – a story for another episode.

Drill down a layer deeper in the ecosystem of engineering players and you find less well-known and often smaller players – in America still, sometimes today’s small is tomorrow’s giant — and a vast landscape of public and private companies, to name a very few to illustrate the diversity; Celestica [NYSE: CLS], , Quest, Intergy and Raritan. Add to the list of emerging players many start-ups and small companies like Power Analytics which (where, full disclosure, I am a board member and we are investors) has pioneered enterprise-level software to visualize and predict the complexities of data center power to marry the oppositional forces of reliability and efficiency.

Drill down further into the basic component layer and we find lots of device and component companies. Of particular interest are those developing next-generation power semiconductors – notably those using silicon carbide, and gallium nitride rather than silicon – which will enable smart power networks the way microprocessors enabled smart communications networks. Our old friends at Cree [NASDAQ: CREE], better known for making LEDs, are one of the power-semi leaders with recent silicon-carbide device releases.

Another bubble brewing on the energy-tech front? You bet. But anchored in the reality of the physics of information, not perceptions of consumer proclivities. Certainly the growth of Facebook, Twitter, LinkedIn, Netlix, and Vevo, and many similar emerging is the face of growth and even froth. You may have trouble knowing where to place bets on the downstream domain, but **the winners upstream are easier to bet on because all Internet companies require underlying infrastructure**.

No surprise then that the pace of data center construction is picking up, from Microsoft’s new 10-football-field-sized Quincy, Washington data center, to Equinix’s recent announcement to build its eighth data center in New York.

One recent survey found up to one-half of data centers need to expand over the next two years, with over two-thirds of data centers expecting to run out of power before the end of next year. The same survey found virtualization has pretty much wrung-out the maximum from installed hardware. Virtualization has been the biggest single energy relief valve, and it’s largely over. Another survey found that 95 percent of data centers experienced at least one unplanned outage over the past couple of years – power was the central issue two-thirds of the time– with an average cost of over $0.5 million per outage. The energy issue has moved to front-and-center.

Hans Thirring in his 1958 book, Energy For Man, was probably the first person to consider and calculate the total energy cost of information and communications. (A citation to his work appears probably for the first time in nearly 50 years in the book I co-authored, The Bottomless Well.) Thirring was prescient. Only now is the technical community starting to give this issue its just due. Maybe the investment community will follow.

Meanwhile, the coming wireless broadband explosion promises to create a vortex of electricity demand. Lots of companies will prosper bringing new technologies and innovations to the digital energy ecosystem.

Some see the energy appetite of the Cloud as a problem. Others amongst us see it as evidence of a new global tech boom that echoes the arrival of the automotive age. We’re back to the future, where the microprocessor today as an engine of growth may not be new, anymore than the internal combustion engine was new in 1958. It’s just that, once more, all the components, features and forces are aligned for enormous growth. With that growth we will find at the bottom of this particular digital well, the need to dig more coal, frack more shale….

#### Extinction

Eagleman 10

[David Eagleman is a neuroscientist at Baylor College of Medicine, where he directs the Laboratory for Perception and Action and the Initiative on Neuroscience and Law and author of Sum (Canongate). Nov. 9, 2010, “ Six ways the internet will save civilization,”
 http://www.wired.co.uk/magazine/archive/2010/12/start/apocalypse-no]

Many great civilisations have fallen, leaving nothing but cracked ruins and scattered genetics. Usually this results from: natural disasters, resource depletion, economic meltdown, disease, poor information flow and corruption. But we’re luckier than our predecessors because we command a technology that no one else possessed: a rapid communication network that finds its highest expression in the internet. I propose that there are six ways in which the net has vastly reduced the threat of societal collapse. Epidemics can be deflected by telepresence One of our more dire prospects for collapse is an infectious-disease epidemic. Viral and bacterial epidemics precipitated the fall of the Golden Age of Athens, the Roman Empire and most of the empires of the Native Americans. The internet can be our key to survival because the ability to work telepresently can inhibit microbial transmission by reducing human-to-human contact. In the face of an otherwise devastating epidemic, businesses can keep supply chains running with the maximum number of employees working from home. This can reduce host density below the tipping point required for an epidemic. If we are well prepared when an epidemic arrives, we can fluidly shift into a self-quarantined society in which microbes fail due to host scarcity. Whatever the social ills of isolation, they are worse for the microbes than for us. The internet will predict natural disasters We are witnessing the downfall of slow central control in the media: news stories are increasingly becoming user-generated nets of up-to-the-minute information. During the recent California wildfires, locals went to the TV stations to learn whether their neighbourhoods were in danger. But the news stations appeared most concerned with the fate of celebrity mansions, so Californians changed their tack: they uploaded geotagged mobile-phone pictures, updated Facebook statuses and tweeted. The balance tipped: the internet carried news about the fire more quickly and accurately than any news station could. In this grass-roots, decentralised scheme, there were embedded reporters on every block, and the news shockwave kept ahead of the fire. This head start could provide the extra hours that save us. If the Pompeiians had had the internet in 79AD, they could have easily marched 10km to safety, well ahead of the pyroclastic flow from Mount Vesuvius. If the Indian Ocean had the Pacific’s networked tsunami-warning system, South-East Asia would look quite different today. Discoveries are retained and shared Historically, critical information has required constant rediscovery. Collections of learning -- from the library at Alexandria to the entire Minoan civilisation -- have fallen to the bonfires of invaders or the wrecking ball of natural disaster. Knowledge is hard won but easily lost. And information that survives often does not spread. Consider smallpox inoculation: this was under way in India, China and Africa centuries before it made its way to Europe. By the time the idea reached North America, native civilisations who needed it had already collapsed. The net solved the problem. New discoveries catch on immediately; information spreads widely. In this way, societies can optimally ratchet up, using the latest bricks of knowledge in their fortification against risk. Tyranny is mitigated Censorship of ideas was a familiar spectre in the last century, with state-approved news outlets ruling the press, airwaves and copying machines in the USSR, Romania, Cuba, China, Iraq and elsewhere. In many cases, such as Lysenko’s agricultural despotism in the USSR, it directly contributed to the collapse of the nation. Historically, a more successful strategy has been to confront free speech with free speech -- and the internet allows this in a natural way. It democratises the flow of information by offering access to the newspapers of the world, the photographers of every nation, the bloggers of every political stripe. Some posts are full of doctoring and dishonesty whereas others strive for independence and impartiality -- but all are available to us to sift through. Given the attempts by some governments to build firewalls, it’s clear that this benefit of the net requires constant vigilance. Human capital is vastly increased Crowdsourcing brings people together to solve problems. Yet far fewer than one per cent of the world’s population is involved. We need expand human capital. Most of the world not have access to the education afforded a small minority. For every Albert Einstein, Yo-Yo Ma or Barack Obama who has educational opportunities, uncountable others do not. This squandering of talent translates into reduced economic output and a smaller pool of problem solvers. The net opens the gates education to anyone with a computer. A motivated teen anywhere on the planet can walk through the world’s knowledge -- from the webs of Wikipedia to the curriculum of MIT’s OpenCourseWare. The new human capital will serve us well when we confront existential threats we’ve never imagined before. Energy expenditure is reduced Societal collapse can often be understood in terms of an energy budget: when energy spend outweighs energy return, collapse ensues. This has taken the form of deforestation or soil erosion; currently, the worry involves fossil-fuel depletion. The internet addresses the energy problem with a natural ease. Consider the massive energy savings inherent in the shift from paper to electrons -- as seen in the transition from the post to email. Ecommerce reduces the need to drive long distances to purchase products. Delivery trucks are more eco-friendly than individuals driving around, not least because of tight packaging and optimisation algorithms for driving routes. Of course, there are energy costs to the banks of computers that underpin the internet -- but these costs are less than the wood, coal and oil that would be expended for the same quantity of information flow. The tangle of events that triggers societal collapse can be complex, and there are several threats the net does not address. But vast, networked communication can be an antidote to several of the most deadly diseases threatening civilisation. The next time your coworker laments internet addiction, the banality of tweeting or the decline of face-to-face conversation, you may want to suggest that the net may just be the technology that saves us.

## adv 2

#### US courts should strike down the coal NSPS rule—precedent key to prevent fossil fuel regulatory death and EPA carbon caps

Marlo Lewis, Competitive Enterprise Institute, Energy and Environmental Policy Senior Fellow, 11/14/12, Why You Should Care That Courts Overturn EPA's Carbon Pollution Standard, www.forbes.com/sites/realspin/2012/11/14/why-you-should-care-that-courts-overturn-epas-carbon-pollution-standard/print/

The 2012 elections ensure that President Obama’s “war on coal” will continue for at least two more years. The administration’s preferred M.O. has been for the EPA to “enact” anti-coal policies that Congress would reject if such measures were introduced as legislation and put to a vote. Had Gov. Romney won the presidential race and the GOP gained control of the Senate, affordable energy advocates could now go on offense and pursue a legislative strategy to roll back various EPA global warming regulations, air pollution regulations, and restrictions on mountaintop mining. But Romney lost and Democrats gained two Senate seats.

Consequently, defenders of free-market energy are stuck playing defense and their main weapon now is litigation. This is a hard slog because courts usually defer to agency interpretations of the statutes they administer. But sometimes petitioners win. In August, the U.S. Court of Appeals struck down the EPA’s Cross State Air Pollution Rule (CSAPR), a regulation chiefly targeting coal-fired power plants. The Court found that the CSAPR exceeded the agency’s statutory authority. Similarly, in March, the Court ruled that the EPA exceeded its authority when it revoked a Clean Water Act permit for Arch Coal’s Spruce Mine No. 1 in Logan Country, West Virginia.

A key litigation target in 2013 is EPA’s proposal to establish greenhouse gas (GHG) “new source performance standards” (NSPS) for power plants. This so-called carbon pollution standard is not based on policy-neutral health or scientific criteria. Rather, the EPA contrived the standard so that commercially-viable coal plants cannot meet it. The rule effectively bans investment in new coal generation.

We Can Win This One

Prospects for overturning the rule are good for three main reasons.

(1) Banning new coal electric generation is a policy Congress has not authorized and would reject if proposed in legislation and put to a vote. Once again the EPA is acting beyond its authority.

The proposed “carbon pollution” standard requires new fossil-fuel electric generating units (EGUs) to emit no more than 1,000 lbs of carbon dioxide (CO2) per megawatt hour (MWh). About 95% of all natural gas combined cycle power plants already meet the standard, according to the EPA. No existing coal power plants come close; even the most efficient, on average, emit 1,800 lbs CO2/MWh.

A coal power plant equipped with carbon capture and storage (CCS) technology could meet the standard, but the levelized cost of new coal plants already exceeds that of new natural gas combined cycle plants, and “today’s CCS technologies would add around 80% to the cost of electricity for a new pulverized coal (PC) plant, and around 35% to the cost of electricity for a new advanced gasification-based (IGCC) plant,” the EPA acknowledges.

In short, the EPA has proposed a standard no economical coal plant can meet. Not surprising given President Obama’s longstanding ambition to “bankrupt” anyone who builds a new coal power plant and his vow to find other ways of “skinning the cat” after the 2010 election-day “slaughter” of 29 cap-and-trade Democrats. But the big picture is hard to miss: Congress never signed off on this policy.

The only time Congress even considered imposing GHG performance standards on power plants was during the debate on the Waxman-Markey cap-and-trade bill. Section 216 of Waxman-Markey would have established NSPS requiring new coal power plants to reduce CO2 emissions by 50% during 2009-2020 and by 65% after 2020 – roughly what the EPA is now proposing. Although Waxman-Markey narrowly passed in the House, it became so unpopular as “cap-and-tax” that Senate leaders pulled the plug on companion legislation.

Team Obama is attempting to accomplish through the regulatory backdoor what it could not achieve through the legislative front door. The “carbon pollution” rule is an affront to the separation of powers.

(2) The “carbon pollution” standard is regulation by misdirection – an underhanded ‘bait-and-fuel-switch.’

In Massachusetts v. EPA (April 2007), the Supreme Court held that GHGs are “air pollutants” for regulatory purposes. This spawned years of speculation about whether the EPA would define “best available control technology” (BACT) standards for “major” GHG emitters so stringently that utilities could not obtain pre-construction permits unless they built natural gas power plants instead of new coal power plants.

In March 2011, the EPA published a guidance document assuring stakeholders that BACT for CO2 would not require a permit applicant “to switch to a primary fuel type” different from the fuel type the applicant planned to use for its primary combustion process. The agency specifically disavowed plans to “redefine the source [category]” such that coal boilers are held to the same standard as gas turbines.

The EPA reiterated this assurance in a Q&A document accompanying the guidance. One question asks: “Does this guidance say that fuel switching (coal to natural gas) should be selected as BACT for a power plant?” The EPA gives a one-word response: “No.”

This bears directly on the legal propriety of the “carbon pollution” standard. In general, NSPS are less stringent than BACT. NSPS provide the “floor” or minimum emission control standard for determining an emitter’s BACT requirements. BACT is intended to push individual sources to make deeper emission cuts than the category-wide NSPS requires.

Yet despite the EPA’s assurance that BACT, although tougher than NSPS, would not require fuel switching or redefine coal power plants into the same source category as natural gas power plants, the “carbon pollution” rule does exactly that.

In April 2011, the House passed H.R. 910, the Energy Tax Prevention Act, sponsored by Rep. Fred Upton (R-Mich.), by a vote of 255-172. H.R. 910 would overturn all of the EPA’s GHG regulations except for those the auto and trucking industries had already made investments to comply with. Sen. James Inhofe’s companion bill (S. 482) failed by one vote. In June 2010, Sen. Lisa Murkowski’s (R-Alaska) Congressional Review Act resolution to strip the agency of its Mass v. EPA-awarded power to regulate GHGs failed by four votes. One or both of those measures might have passed had the EPA come clean about its agenda and stated in 2009 it would eventually propose GHG performance standards no affordable coal power plant can meet.

(3) The “carbon pollution” standard is weirdly contorted, flouting basic standards of reasonableness and candor.

Under the Clean Air Act, an emission performance standard is supposed to reflect “the degree of emission limitation achievable through the application of best system of emission reduction” that has been “adequately demonstrated.” The EPA picked 1,000 lbs CO2/MWh as the NSPS for new fossil-fuel EGUs because that is the “degree of emission limitation achievable through natural gas combined cycle generation.”

But natural gas combined cycle is not a system of emission reduction. It is a type of power plant. The EPA is saying with a straight face that natural gas combined cycle is an emission reduction system that has been adequately demonstrated for coal power plants. By that ‘logic,’ zero-carbon nuclear-, hydro-, wind-, or solar-electric generation is an emission reduction system that has been adequately demonstrated for natural gas combined cycle.

A coal power plant could meet the standard by installing CCS, but, as the EPA acknowledges, CCS is too costly to qualify as “adequately demonstrated.” The only practical way for utilities to comply is to build new gas turbines instead of new coal boilers. This is the first time the EPA has defined a performance standard such that one type of facility can comply only by being something other than what it is.

The EPA sets performance standards for specific categories of industrial sources. A coal boiler is different from a gas turbine, and up to now the agency reasonably regulated them as different source categories, under different parts of the Code of Federal Regulations – Subpart Da for coal boilers, Subpart KKKK for gas turbines. The EPA now proposes to regulate coal boilers and gas turbines as a single source category — “fossil-fuel EGUs” — under a new subpart numbered TTTT. But only for CO2! Coal boilers and gas turbines will continue to be regulated as separate source categories for criteria and toxic pollutants under Subparts Da and KKKK.

Why hold coal boilers and gas turbines to different standards for those pollutants? The EPA’s answer: “This is because although coal-fired EGUs have an array of control options for criteria and toxic air pollutants to choose from, those controls generally do not reduce their criteria and air toxic emissions to the level of conventional emissions from natural gas-fired EGUs.”

The same reasoning argues even more strongly against imposing a single GHG standard on coal boilers and natural gas turbines. Coal boilers do not have an “array of control options” for CO2 emissions, and have no “adequately demonstrated” option for reducing CO2 emissions to the level of gas-fired EGUs. Subpart TTTT is an administrative contortion concocted to kill the future of coal generation.

Why Care Even If You Don’t Mine or Combust Coal for a Living

At this point you may be wondering why anyone outside the coal industry should care about this cockamamie rule. There are several reasons.

First and most obviously, banning new coal generation could increase electric rates and make prices more volatile. For generations, coal has supplied half or more of U.S. electricity, and still provides the single largest share. The “carbon pollution” standard is risky because coal’s chief competitor, natural gas, has a history of price volatility and a future clouded by the environmental movement’s hostility to hydraulic fracturing, the technology transforming gas from a costly shrinking resource to an affordable expanding resource.

The “carbon pollution” standard itself could put the kibosh on new gas-fired generation if the EPA concludes, as MIT researchers contend, that fugitive methane emissions from hydraulic fracturing make gas as carbon-intensive as coal.

The EPA is also developing GHG performance standards for refineries. “Unconventional” oil production from shale and oil sands is booming in North America, creating thousands of jobs, generating billions of dollars in tax revenues, and reducing U.S. dependence on OPEC oil. But unconventional oil production is energy-intensive and therefore carbon-intensive. It is unknown whether or how the forthcoming GHG standard for refineries will address the carbon intensity of unconventional oil. What we do know is that the environmental groups who litigated the EPA into proposing these standards are arch foes of unconventional oil.

In any event, the “carbon pollution” standard for power plants is just the start of a regulatory trajectory, not its end point. The EPA’s settlement agreement with environmental groups and state attorneys general obligates the agency to extend the standard to “modified” coal power plants and establish emission “guidelines” for non-modified units.

Moreover, the standard sets a precedent for promulgating NSPS for other GHG source categories – including natural gas. As indicated above, if gas can set the standard for coal, then wind and solar can set the standard for gas, and the refinery standard could undermine the profitability of unconventional oil. Although initially directed against new coal, the standard puts all fossil-energy production in an ever-tightening regulatory noose.

Pandora’s NAAQS

Taking a longer view, the “carbon pollution” rule moves the U.S. economy one step closer to the ultimate environmental policy disaster: national ambient air quality standards (NAAQS) for GHGs.

In December 2009, the EPA issued a rule under Section 202 of the Clean Air Act declaring that GHG emissions from new motor vehicles endanger public health and welfare. The endangerment rule was both prerequisite and trigger for the agency’s adoption, in January 2011, of first-ever GHG motor vehicle standards. The agency now claims that it need not issue a new and separate endangerment finding under Section 211 to adopt first-ever GHG performance standards for power plants, because subsequent science confirms and strengthens its Section 202 finding.

An implication of this argument is that the EPA need not make a new endangerment finding to promulgate NAAQS for GHGs under Section 108, because the Section 202 finding would suffice for that as well.

Section 108 of the Clean Air Act requires the EPA to initiate a NAAQS rulemaking for “air pollution” from “numerous or diverse mobile or stationary sources” if such pollution “may reasonably be anticipated to endanger public health and welfare.” Carbon dioxide obviously comes from numerous and diverse mobile and stationary sources, and the EPA has already determined that the associated “air pollution” – the “elevated concentrations” of GHGs in the atmosphere – endangers public health and welfare. Logically, the EPA must establish NAAQS for GHGs set below current atmospheric concentrations.

Eco-litigants have already put this ball in play. The Center for Biological Diversity and 350.Org petitioned the EPA more than two years ago to establish NAAQS for CO2 at 350 parts per million (roughly 40 parts per million below current concentrations) and for other GHGs at pre-industrial levels.

The potential for mischief is hard to exaggerate. Not even a worldwide depression that permanently lowers global economic output and emissions to, say, 1970 levels, would stop CO2 concentrations from rising over the remainder of the century. Yet the Clean Air Act requires States to adopt implementation plans adequate to attain primary (health-based) NAAQS within five or at most 10 years. A CO2 NAAQS set at 350 parts per million would require a level of economic sacrifice vastly exceeding anything contemplated by the Waxman-Markey cap-and-trade bill or the Copenhagen climate treaty, which aimed to stabilize CO2-equivalent emissions at 450 parts per million by 2050.

The EPA has yet to decide on the CBD-350.Org petition. Perhaps this is another case of punting unpopular regulatory decisions until Obama’s second term. The one instance where the administration addressed the issue is not reassuring. In a brief submitted to the Supreme Court in American Electric Power v. Connecticut, the Obama Justice Department described Section 108 as one of the provisions making the Clean Air Act a “comprehensive regulatory framework” for climate change policy.

Ultimately, only the people’s representatives can protect coal generation, hydraulic fracturing, and unconventional oil from hostile regulation. But nixing the “carbon pollution” standard would be a big setback to both the EPA and the eco-litigation fraternity, and would help safeguard America’s energy options until a future Congress reins in the agency.

#### Coal NSPS establishes a precedent that leads to broader GHG regulation—destroys range of industries

Chamber of Commerce et al, 6/25/12, Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, Docket ID No. EPA –HQ–OAR–2011–0660; FRL– 9654–7, 77 Fed. Reg. 22,392 (April 13, 2012), The National Association of Manufacturers, the American Chemistry Council, American Forest & Paper Association, American Fuel & Petrochemical Manufacturers, American Iron and Steel Institute, American Petroleum Institute, American Wood Council, Brick Industry Association, Corn Refiners Association, Council of Industrial Boiler Owners, National Oilseed Processors Association, Portland Cement Association, The Fertilizer Institute, and the U.S. Chamber of Commerce, http://www.nam.org/~/media/53E86E050C7A495A9CC84F9778BA1F10/Association\_GHG\_NSPS\_Comments\_June\_25\_2012.pdf

The Associations represent the nation’s leading manufacturing sectors which form the backbone of the nation’s industrial ability to grow our economy and provide jobs in an environmentally sustainable and energy efficient manner. Although the EPA’s proposed New Source Performance Standard (“NSPS”) addresses specifically the utility sector, we collectively have significant concerns regarding the EPA’s first-ever regulation of greenhouse gas (“GHG”) emissions from a source category under Section 111, both because of the impact these regulations will have on energy prices and reliability, as well as the potential precedent-setting nature of the approach on manufacturing sectors in the future. It is also possible that the proposed rule may directly apply to future projects of the Associations’ members, including, for example, cogeneration plants owned, operated, or co-located at their facilities. The Associations are key stakeholders on any regulation that impacts energy and which may impact manufacturers directly in the future. For the reasons described below, we urge the EPA to withdraw this proposal given the already significant adverse consequences of the proposal on industry, and to engage instead—if at all—in a process with all interested stakeholders as to whether and how the EPA should approach GHG regulation through NSPS before proposing rules that have an immediate and harmful impact.

As discussed below, the EPA’s NSPS proposal is unprecedented not only in its policy reach, but in the significant number of compounding errors that exceed the EPA’s authority under the Clean Air Act. At the outset, we have an overarching concern that the NSPS proposal crosses a line by expanding the EPA’s 40-year mandate as the preeminent regulator of the environment to become a regulator of energy. In this environmental regulation the EPA is controlling not merely the emissions of air pollutants, but the choice of fuel and energy that a project must utilize if it is to be constructed or operated. The EPA’s approach to force one type of fuel to be switched for another arises out of the proposal’s effort to combine two independent and distinct source categories and regulate them together under a single standard of performance that simply cannot be attained by one of the source categories. In doing so, the EPA is effectively dictating both fuel choice and design choice for new electric utility generating units (“EGUs”), contrary to Congressional intent and the EPA’s authority as a regulator of the environment, not energy. This action will have far-reaching effects, not only for the EGUs themselves, but also for the many other industries that depend upon the energy that they provide and may one day become subject to the same types of regulations.

#### GHG regs on the semiconductor industry kills competitiveness

SIA, SEMICONDUCTOR INDUSTRY ASSOCIATION, 1/31/11, SEMICONDUCTOR INDUSTRY ASSOCIATION PETITION FOR RECONSIDERATION AND REQUEST FOR STAY PENDING RECONSIDERATION OF SUBPART I OF THE FINAL RULE FOR MANDATORY REPORTING OF GREENHOUSE GASES, http://op.bna.com/env.nsf/id/fwhe-8z4l8q/$File/sia.petition.pdf

Individual recipes are among the most closely-guarded trade secrets in the semiconductor industry,36 and several courts have acknowledged that semiconductor chip manufacturing processes and design are protectable as trade secrets.37 To remain globally competitive, a semiconductor company must innovate on a constant basis to bring new and faster products to market. Accordingly, semiconductor manufacturers invest considerable time and money in research and development to perfect the recipes used in the fabrication process. Each company’s recipe portfolio has an inherent intellectual property value in the hundreds of millions to billions of dollars. Final Subpart I, although it does not mandate the submission of any full recipe, does require reporting of certain recipe-specific information. As explained below, this information could provide enough specific knowledge of proprietary device designs and manufacturing processes to allow for reverse engineering of individual recipes and otherwise would compromise the trade secrets within a company’s recipe portfolio.38 In particular, Section 98.96 of the Final Subpart I requires facilities to report the following information:  Type of each gas used for each set of similar recipes;39  Recipe-specific utilization and byproduct rates (i.e., emission factors);40  The film or substrate that was etched or cleaned and the feature type that was etched for each recipe in Part 98.96(f)(1);41  Quantity of each gas used for each set of “similar” recipes, to be reported on an annualized basis;42  All apportioning factors used to apportion F-gas and N2O consumption;43 and Identification of the quantifiable metric used in a facility-specific engineering model to apportion gas consumption.44 The level of intellectual property inherent in the foregoing information is significant. Essentially, SIA understands these reporting requirements to require that a company reveal the quantity of gas being used (1) for each type of “film” being etched (e.g., oxide, nitride) and (2) for each “feature” within that film (e.g., gate, deep trench).45 As result, a company wouldberevealinginformation about its process and particular recipes used in that process which it, in many cases, has never shared publicly and which it regards as intellectual property. For example, a company would need, under these information requirements, to reveal that in its 300 millimeter fabrication process, for a specific group of “similar” recipes it uses X kg of SF6 and Y kg of CHF3 to etch silicon nitride layers in gate stack in year 2010. In addition, Final Subpart I would require each facility to maintain recipe- specific records in order to document compliance with the requirements of the Rule and make such records available to EPA. In particular, Section 98.97(b) of the Rule requires the following records be kept by any facility that estimates emissions using recipe-specific emission factors, i.e., “large” facilities: ￼43 44 45 46 (1) “Complete documentation and final report for measurements for recipe specific [emission factors]”; and (2) “Documentation that recipe-specific [emission factors] developed for your facility are measured for recipes that are similar to those used at your facility, as defined in § 98.98. The documentation must include, at a minimum, recorded to the appropriate number of significant figures, reactor pressure, flow rates, chemical composition, applied RF power, direct current (DC) bias, temperature, flow stabilization time, and duration.”46 Of particular concern to SIA and its members is that these records could become subject to inquiries as to their content and sufficiency not only by EPA in an enforcement context, but also by local residents and other private citizens in future permitting and related contexts (e.g., a Freedom of Information Act Request or through discovery in a citizen suit filed under the Clean Air Act).47 Etch recipes are considered trade secrets and, as such, are tightly controlled. Most semiconductor companies – even very prolific patentees – opt to protect their recipes as trade secrets, rather than through patents, which require disclosure of the recipe. If these records are made public, they could loose their status as trade secrets, allowing competitors to reverse engineer recipes, thereby compromising the value of information worth up to several billion dollars to each company. The loss of trade secret protection for semiconductor etch recipe information through its public disclosure via the Final Rule could amount to a regulatorytakingofintellectualproperty.48 ItdoesnotappearthatEPA(orthe Office of Management and Budget) has undertaken any analysis of this potential erosion of private intellectual property value. In addition to this potential takings issue, disclosure of recipe information may also present national security concerns at those semiconductor facilities that are designated Trusted Foundries by the U.S. National Security Agency.49 Moreover, EPA has not yet finalized its position on what information submitted under the Reporting Rule constitutes “emissions data” that are not subject to confidential treatment under the CAA. Section 114(c) of the Clean Air Act provides that “records, reports or information” submitted to EPA in connection with a rulemaking or “standards” development or as part of an ongoing compliance requirement or through an investigation or enforcement proceeding may be maintained as confidential so long as they do not constitute “emissionsdata.”50 UnderEPA’sregulations,thedeterminationofwhich information is “emissions data” has been made on a case-by-case basis based on information submitted by individual emission sources.51 In July 2010, EPA published a proposal (hereinafter “Proposed CBI Rule”) that, if finalized, will constitute EPA’s prospective determination of which information required to be submitted under Subpart I will qualify as “emissions data” and, therefore, will not be eligible for confidential treatment under the Rule.52 TheProposedCBIRuleidentifieswhichinformationEPAwillconsider “emissions data” by reference to specific sections in Subpart I. At the time of its publication in July 2010, the Proposed CBI Rule referred to the information requirements of Subpart I as they existed then; this was the Re-Proposed Subpart I, which, as described in Section II(B)(1)(a) above, required submission of information, including emission factors under § 98.96(d), only for certain process categories, and not on a recipe-specific basis. Therefore, the determination of which data submitted under Subpart I constitute “emissions data” was made by EPA without any evaluation of the Final Subpart I’s recipe- specific reporting regime. If EPA were to persist in its position articulated in the Proposed CBI Rule, much of the information underlying the Final Subpart I’s emissions calculations,53 including the recipe-specific emissions factors, would constitute “emissions data,” thereby making recipe-specific information vulnerable to public disclosure even more broadly outside the enforcement and permitting contexts described above. Although SIA commented on the Proposed CBI Rule,54 it was obviously impracticable for SIA to comment on the Proposed CBI Rule as it would ultimately apply -- i.e., to the submission of recipe-specific emission factors. The mere fact that the Final Subpart I would probe so deeply into the semiconductor fabrication process as to create such vulnerabilities to intellectual property underscores why an individual recipe-based approach is not sound for the long term, even if EPA were to address the definitional and other issues to render the Final Subpart I technically feasible. In addition, EPA utterly failed to recognize and address these intellectual property threats when promulgating the Final Subpart I, and therefore, EPA must grant reconsideration on this issue to rectify these serious gaps in its legal and policy analysis. c. Exorbitant Costs Section III.B. below addresses the full range of economic impacts of the Final Subpart I not considered by EPA due to flawed assumptions underlying its Economic Impact Assessment. However, an additional element of technical impracticality of an individual recipe-by-individual recipe measurement approach pertains to its exorbitant costs. Thus, we review those exorbitant costs briefly in this context. As explained in Section III.B. below, SIA engaged ISMI to survey large facilities to determine the true burden to the semiconductor industry of complying with a recipe-based measurement approach. This survey requested companies to assume compliance with the Final Subpart I was technically feasible and would require measurement testing of all dis-“similar” recipes. Notably, ISMI estimated -- using conservative assumptions which likely underestimate costs -- $56 million to perform such testing in the first year, and $18 million per year in subsequent years, not even taking into account production downtime.55 These costs dwarf EPA’s estimates,56 which as detailed in Section III.B., rely on flawed assumptions. As further evidence of the exorbitance -- and therefore of technical impracticality -- of an individual recipe-based measurement approach, SIA has performed a comparison of the costs of this approach along with total compliance costs for other industry sectors subject to GHG reporting. EPA’s estimate of compliance costs for all sectors, which SIA determined by totaling estimates provided in the September 2009 Regulatory Impact Assessment (RIA)57 for the initially finalized GHG reporting rule and in the Preambles for subsequently finalized GHG reporting subparts,58 is approximately $165 million in the first year, and $95 million per year in subsequent years. Thus, based on ISMI’s estimate, the cost to the semiconductor industry to develop dis-“similar” individual recipe-specific emissions factors equates to more than one-third (34%) of EPA’s estimate of first year costs for all sectors, and almost one-fifth (18%) of subsequent annual costs for all sectors. This cost proportion would appear wholly unreasonable, especially given that the semiconductor industry’s F-gas emissions comprise only 0.08% of the total GHG emissions inventory.59 A per ton CO2e60 analysis further underscores this point. EPA has estimated both the first year and subsequent annual costs for Subpart I compliance at $0.33/ton. EPA already has acknowledged that these estimated Subpart I costs are the highest CO2e per ton compliance costs of any GHG reporting subpart by a substantial margin.61 That margin grows to an untenable level, however, when applying ISMI’s cost estimates for the Recipe-Specific Utilization and By-Product Formation Rates requirement alone. In particular, applying the ISMI first and subsequent year cost estimates of $56 million and $17 million respectively per year to EPA’s emissions estimate for the semiconductor industry of 5.7 million tons CO2e,62 the per CO2e ton cost of complying with only the s/c etch recipe aspect of Subpart I would be $9.80/ton in the first year, and $2.98/ton per year in subsequent years. These costs are 35 and 20 times greater than the next highest sectors’ first year and subsequent year per ton costs,63 and 122 and 60 times more than the first year and subsequent year averages for all sectors. In view of the ISMI numbers likely underestimating costs and only being for partial compliance, it is clear that the Final Subpart I would require the U.S. semiconductor industry to incur compliance costs lacking any reasonable proportion to the industry’s emissions.64

#### Semiconductors are key to US nuclear modernization

Chandratre et al 7

(V.B. Chandratre et al 7, Menka Tewani, R.S. Shastrakar, V. Shedam, S. K. Kataria and P. K. Mukhopadhyay Electronics Division, Bhabha Atomic Research Centre “AN APPROACH TO MODERNIZING NUCLEAR INSTRUMENTATION: SILICON-BASED SENSORS, ASIC AND HMC” October, <http://www.barc.ernet.in/publications/nl/2007/200710-2.pdf>)

Modernization of nuclear instrumentation is pursued for realizing the goal of compact portable nuclear instruments, detector mount electronics and related instrumentation that can be designed, developed and manufactured, to mitigate contemporary instrumentation challenges. The activity aims at indigenous design and development of crucial components of nuclear instrumentation. Efforts are also undertaken to develop the critical microelectronics technologies to fulfill the gaps in nuclear instruments “ end to end”. The activity’s objective has been fulfilled by working in close collaboration with semiconductor foundries and HMC (Hybrid Micro Circuits) facilities. Various ASIC, sensors, IP cores, HMC, display devices and critical instrumentation modules developed, are discussed. The design and development of nuclear instruments require a variety of high performance components and sensors. Till recently these components were available and activity based on this approach has grown mature, with good expertise in related areas but has availability and obsolescence issues. As the technologies have moved up, various competing devices, techniques and technologies are available today. It’s important and as well prudent to catch up with these cutting edge developments, for a very strong reason that we have not been able to catch up with previous technology movements. Technology updates are difficult and have higher lead times with steeper learning curve. The Electronics Division has taken a modest initiative in fulfilling the gap in this area. Care has been taken to develop critical instrumentation by an approach of “mix and match”, integrating the newer development in the existing instrumentation on the basis of merit and requirements. Nuclear instrumentation has been a strong driver for technology developments worldwide. The low / medium energy instrumentation requirements we meet fairly with combination of NIM, CAMAC, FASTBUS and VME-based instrumentation. With use of the sensors of higher granularity, higher event rate, imaging and tracking requirements coupled with complex trigger mechanism, the approach has changed to low power detector mount electronics or monolithic sensor with electronics. Rapid developments in semiconductor technology have aided in realizing this concept.

#### Nuclear war

John P. Caves 10, Senior Research Fellow in the Center for the Study of Weapons of Mass Destruction at the National Defense University, “Avoiding a Crisis of Confidence in the U.S. Nuclear Deterrent”, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ada514285>

Perceptions of a compromised U.S. nuclear deterrent as described above would have profound policy implications, particularly if they emerge at a time when a nucleararmed great power is pursuing a more aggressive strategy toward U.S. allies and partners in its region in a bid to enhance its regional and global clout. ■ A dangerous period of vulnerability would open for the United States and those nations that depend on U.S. protection while the United States attempted to rectify the problems with its nuclear forces. As it would take more than a decade for the United States to produce new nuclear weapons, ensuing events could preclude a return to anything like the status quo ante. ■ The assertive, nuclear-armed great power, and other major adversaries, could be willing to challenge U.S. interests more directly in the expectation that the United States would be less prepared to threaten or deliver a military response that could lead to direct conflict. They will want to keep the United States from reclaiming its earlier power position. ■ Allies and partners who have relied upon explicit or implicit assurances of U.S. nuclear protection as a foundation of their security could lose faith in those assurances. They could compensate by accommodating U.S. rivals, especially in the short term, or acquiring their own nuclear deterrents, which in most cases could be accomplished only over the mid- to long term. A more nuclear world would likely ensue over a period of years. ■ Important U.S. interests could be compromised or abandoned, or a major war could occur as adversaries and/or the United States miscalculate new boundaries of deterrence and provocation. At worst, war could lead to state-on-state employment of weapons of mass destruction (WMD) on a scale far more catastrophic than what nuclear-armed terrorists alone could inflict.

#### Leads to GHG regulation of aviation and aerospace—kills the industry, modernization, and safety

Clinton J. Woods, House Energy and Environment Committee Staffer, GMU Masters, Spring 2009, Ground Control to EPA: The Regulation of Aviation Greenhouse Gas Emissions under the Clean Air Act, http://digilib.gmu.edu/dspace/bitstream/1920/6541/1/79-318-1-PB.pdf

Due to a variety of recent legal and political developments, aviation interests face the potential regulation of greenhouse gas emissions from aircraft, aircraft engines, and aviation operations by the Environmental Protection Agency (EPA) under Section 231 of the Clean Air Act (CAA). **This significant turn of events could radically alter the regulatory, environmental, economic, and safety landscape confronting the airline and aerospace industries** at the federal level. This paper will assess the driving forces prompting this outcome, including: a more environmentally activist Obama presidency (and the corresponding character of the EPA); the Supreme Court’s 2007 decision in Massachusetts v. EPA; Congressional pressure for a climate change solution; petitions from both state governments and nonprofit organizations to the EPA over aviation emissions; and the EPA’s recently released blueprint for economy-wide greenhouse regulation under the Clean Air Act. Also playing a significant role in this controversy, but not extensively covered in this paper, are recent developments in climate change science by the UN’s Intergovernmental Panel on Climate Change and the international legal ramifications resulting from a unilateral adoption of aviation emissions standards under the Chicago Convention. After discussing the viability and inevitability of EPA aviation regulations, the paper will evaluate the most likely emissions options under the Clean Air Act based on their political and economic implications. I. Background of the Clean Air Act The Clean Air Act, originally enacted in 1970 and with the last major amendments in 1990, authorized state and federal governments to create air pollution emissions regulations for both stationary and mobile sources.1 Section 231 of the Clear Air Act (herein “Section 231”) requires the Administrator of the EPA to commence a study of aircraft emissions to determine “(A) the extent to which such emissions affect air quality in air quality control regions throughout the United States, and (B) the technological feasibility of controlling such emissions.” In the next subdivision of this section, the statute states: (2) (A) The Administrator shall, from time to time, issue proposed emission standards applicable to the emission of any air pollutant from any class or classes of aircraft engines which in his judgment causes, or contributes to, air pollution which may reasonably be anticipated to endanger public health or welfare. (B) (i) The Administrator shall consult with the Administrator of the Federal Aviation Administration on aircraft engine emission standards. (ii) The Administrator shall no t change the aircraft engine emission standards if such change would significantly increase noise and adversely affect safety.2 As a result of recent legal interpretations that conclude greenhouse gas emissions are pollutants that might “endanger public health or welfare,” states and environmental non-profit groups have seized upon the Section 231 requirement that the EPA Administrator “shall” issue aviation standards under the Act.3 Pursuant to the subdivision mentioned, the EPA released a study on aircraft emissions and the feasibility of control in 1972.4 Subsequently, the Agency has enacted regulations to control a variety of aviation pollutants, including smoke, fuel venting, carbon monoxide, nitrogen oxide, particulate matter, and ozone, in 19735, 19976, and 20037. With the more recent finding that carbon dioxide represents a regulated pollutant under the Clean Air Act that could trigger a “public health and welfare” finding, greenhouse gas emissions appear to be the next frontier for EPA regulation. II. Political and Legal Rationale for EPA Regulation under Section 231 Due to a number of political and legal factors, the **regulation of** both in-**use and new aviation greenhouse gas emissions should be viewed as all but inevitable**. The recent election of President Barack Obama is likely to usher in a new era of climate regulations, a fundamental campaign promise, both through an across-the-board cap-and-trade program for greenhouse gas emissions and specific technology-forcing standards developed by the EPA for individual emissions sources. Drawing from statements by several of Obama’s legal advisors, a recent article in the news service Energy & Environment Daily predicted the potential (and probable) actions by the new President: Some envision Obama moving as soon as he takes office Jan. 20, 2009, by issuing a longsought endangerment finding that declares greenhouse gas emissions a threat to public health or welfare, an opening salvo that would clear the way for a wide range of EPA regulations on power plants, automobile and other major sources of heat-trapping gases. Others expect Obama to outline his executive powers in an early speech and then allow EPA and other agencies to work through the details.8 Given the substantial discretion granted to the EPA Administrator under Section 231, the newly approved Administrator in the Obama administration further points to an expanded EPA role in aviation regulation under the Clean Air Act. Both Obama’s eventual selection to head the Agency, Lisa Jackson, formerly New Jersey Environmental Protection Commissioner, and the other name frequently mentioned for this position, Mary Nichols, head of the California Air Resources Board, signal an endorsement of Clean Air Act aviation regulation.9 Both New Jersey and California signed onto a December 2007 petition requesting that EPA exercise its authority under Section 231(a) of the Clean Air Act to regulate greenhouse gas emissions from new and existing aircraft and aircraft engines.10 Furthermore, Congressional action could authorize an expanded EPA role in aviation emissions. In a discussion draft of comprehensive climate change legislation released in October 2008 by then-Chairman of the House Energy and Commerce Committee, John Dingell (D-MI), the proposed provisions would have triggered EPA regulation of aviation emissions: For purposes of paragraph (2)(A) of section 231(a), the Administrator shall be treated as having made a determination under that paragraph that greenhouse gases emitted from new aircraft engines cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.11 This document was widely considered to be the moderate blueprint for legislative efforts to address climate change in the 111th Congress. However, in October 2008 Congressman Henry Waxman (D-CA) ousted Dingell from his Chairmanship of the Energy and Commerce Committee. Waxman is expected to be more environmentally radical than Dingell, making EPA authority over aviation through legislative fiat a very real possibility.12 The Supreme Court’s 2007 decision in the case of Massachusetts v. EPA provides further fuel to the EPA regulatory fire. While the case focused on the ability and obligation of the EPA to regulate greenhouse gas emissions from new motor vehicles under Section 202 of the Clean Air Act, the language interpreted by the Court is nearly identical to the aircraft emissions guidelines in Section 231. For example, Section 202 states “The Administrator shall by regulation prescribe...standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicles, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.”13 In this 5-4 decision, the Court found that “greenhouse gas emissions fit well within the Clean Air Act’s capacious definition of air pollutant” and that the contribution of emissions from the U.S. transportation sector was “enormous” and “a meaningful contribution to greenhouse gas emissions.”14 This sweeping interpretation of the Clean Air Act, combined with recent climate science indications that global warming threatens public health, provides the legal justification for EPA regulation of motor vehicle emissions and, due to the substantially similar language in Section 231, aircraft emissions. In an amicus curiae brief15 responding to the state petition for EPA action under Section 231, lawyers for the Air Transport Association (ATA) and the Aerospace Industry Association (AIA) tried to outline limits on the EPA’s legal authority. They argued that “Section 231 does not require the EPA to issue ‘technology-forcing’ standards, but instead provides that the EPA Administrator, ‘from time to time,’ may issue proposed standards for those emissions which ‘in his judgment causes, or contributes to, air pollution’ and then issue such final regulations ‘as he deems appropriate.’”16 There are also a variety of international legal objections that could arise under the International Civil Aviation Organization and the Chicago Convention if EPA regulation extended to foreign air carriers.17 While both of these positions represent logical justifications for statutory restraint, it appears that the political and legal momentum in favor of regulation is likely to prevail. III. Possible EPA Options under the Clean Air Act Prompted by the Massachusetts v. EPA decision, on July 30, 2008, the EPA released an Advanced Notice of Proposed Rulemaking (ANPR) on “Regulating Greenhouse Gas Emissions Under the Clean Air Act.”18 Prefaced by statements of opposition from a variety of federal agencies and the current EPA Administrator, Stephen Johnson, this sizable document provides a fairly detailed blueprint of the types of regulatory actions available to the EPA to control carbon dioxide and other greenhouse gas emissions under the Clean Air Act. This ANPR, while not binding, lays out technology-forcing mandates, operational requirements, and jurisdictional considerations as it relates to all stationary and mobile sources of pollution (from airplanes to lawnmowers to residential buildings). Finding that greenhouse gas emissions obviously endanger “public health or welfare” and trigger regulatory action under the Act, the EPA spent little time assessing the environmental and scientific problems caused by these pollutants. It is worth highlighting that, unlike the motor vehicle section of the Clean Air Act, Section 231 does not limit EPA regulation to new aircraft or aircraft engines. Therefore, any new regulatory regime established would have an even more significant impact by applying to both new and inuse aircraft.19 In the aviation portion of the ANPR, the EPA makes clear that, while the Federal Aviation Administration (FAA) has the primary role in aviation regulation in the United States, Section 231(a) of the Clean Air Act “authorizes...EPA to set technology-forcing standards to the extent appropriate.”20 The EPA also notes that over the last three decades the Agency has been involved in setting aircraft emissions standards for a variety of non-greenhouse gas pollutants. They further recognize the relatively small contribution of aviation carbon dioxide emissions to overall U.S sources (about 4%).21 The EPA displays a laundry list of technological controls on aircraft and aircraft engines, as well as operational measures to reduce greenhouse gas emissions in this sector. The technological mandates discussed include: balanced engine bypass ratios; aerodynamic drag and weight reductions; film surface grooves; hybrid laminar flow technology; blended winglets; spiroid tips; and alternative fuels. The operational changes mentioned in the ANPR are Reduced Vertical Separation Minimum (RSVM), Continuous Descent Approaches, and single-engine taxiing. While the EPA requests comments on all of these options, perhaps the most likely approach is the development of near-term and long-term aviation sector carbon dioxide or greenhouse gas emissions standards. The EPA says that such a standard, utilizing a fleet average of emissions for each airline, would allow flexibility for carriers to deploy technological efficiency and operational strategies to address the new regulation.22 The ANPR also mentions that, while these proposals would be designed to address emissions from gas turbine engines utilized in commercial aviation, the EPA’s “authority under the Clean Air Act extends to any aircraft emissions” including general or business aviation. While general aviation represents only about 1% of carbon dioxide from U.S. transportation, the EPA requested comments on test procedures and emission standards for this source.23 In addition to these recommendations, there are also a variety of other operational steps that could be applied to inuse aircraft, including: increase in the number of landing operations per hour; reduction of auxiliary power unit usage; coordination with air traffic control centers to select more fuelefficient routes and speeds; and reduction in levels of excess fuel carried.24 IV. Policy Ramifications of EPA Regulation of Aviation Greenhouse Gas Emissions **This** colossal shift in aircraft regulation **would have** a number of **consequences for** the **government, industry, and consumers**. In preliminary comments from the U.S. Department of Transportation (DOT) on the EPA’s ANPR, released as a supplementary document with the Federal Register publication, a number of serious economic and policy concerns are expressed in opposition to expanded EPA authority over aviation emissions.25 While some of the DOT’s (and, in turn, the FAA’s) objections can be chalked up to a bureaucratic turf battle, several of the questions raised need to be answered prior to full-scale EPA mandates of aircraft technology and operations. The first objection raised by DOT is economic in nature. The DOT spells out their reluctance to endorse the Clean Air Act as the best avenue for emissions reductions: We are concerned that attempting to regulate greenhouse gases under the Clean Air Act will harm the U.S. economy while failing to actually reduce global greenhouse gas emissions. Clean Air Act regulation would necessarily be applied unevenly across sources, sectors, and emissions-causing activities, depending on the particular existing statutory language in each section of the Act. Imposing Clean Air Act regulations on U.S. businesses, without an international approach that involves all of the world’s major emitters, **may** well drive U.S. production, jobs, and emissions overseas**, with no net improvement to greenhouse gas concentrations**...If implemented, the actions that the draft contemplates would significantly increase energy and transportation costs for the American people and U.S. industry with no assurance that the regulations would materially affect global greenhouse gas atmospheric concentrations or emissions.26 **This argument is particularly true in** light of an **airline and aerospace industry** that is fully committed to reducing fuel usage for business reasons; the disruption of business operations by a an EPA that lacks extensive regulatory experience in aviation is highly probable. . The costs of complying with new and unproven EPA mandates regarding technology and operations would be significant. As Robert Stavins, professor of Harvard University’s environmental economics program and advocate for federal greenhouse gas restrictions, notes, use of the Clean Air Act would be “extremely costly. It plays into the hands of the opposition. It’s going to make action on climate look silly and costly.”27 The possibility that U.S. regulations could only apply to American carriers as a result of EPA decisions or international legal proceedings would further magnify the potential harm to domestic aviation interests. The broader economic impacts could be substantial, as both ATA and AIA estimate that their industries do nearly $200 billion in business annually.28 Second, regulation by the EPA ignores the potential benefits that will result from Next Generation Air Transportation System or NextGen, the interagency effort to modernize American airspace through satellite-based air traffic navigation. Led by the FAA and with participation from private organizations, the Department of Defense, NASA, the Department of Homeland Security, the National Oceanic and Atmospheric Administration, and the White House Office of Science and Technology Policy, NextGen seeks to deploy technology by 2025 to allow all aircraft and airports in U.S. airspace to adapt to weather, traffic, trajectory, and security issues in real-time.30 Many of the operational changes discussed in the ANPR would be more efficiently accomplished by the deployment of better technology to govern air traffic control, navigation, and congestion. The DOT comments: “Through NextGen, the Department’s Federal Aviation Administration, in cooperation with private sector interests, is actively pursuing operational and technological advances that could result in a 33 percent reduction in aircraft fuel burn and carbon dioxide emissions.”31 It is also worth noting that there is an overwhelming economic justification for airlines to achieve greater fuel economy as U.S. airlines spent $60 billion for fuel in 2008. NextGen offers great promise toward that end. Third, EPA regulation ignores the consensus-driven process of environmental standardsetting that is currently being pursued by the United States through ICAO. Many of the proposals included in the ANPR (fleet averaging or flat carbon dioxide standards) have been considered and rejected as unworkable by ICAO and the aviation community. The FAA is actively working through ICAO to ensure that minimum, market-based, international standards are agreed to. DOT lays out the benefits of the ICAO approach: “The FAA’s emphasis on international collaboration is compelled by the international nature of commercial aviation and the fact that performance characteristics of engines and airframes-environmental and otherwisework best when they maximize consistency among particular national regulations.”32 Finally, EPA regulation under Section 231 would usurp FAA authority and potentially **hinder the safety guidelines that should govern any new aviation standards.** While the EPA goes to great lengths to promise consultation and collaboration with the FAA, they lack the experience and expertise to initiate, issue, or monitor aviation regulations. In particular, the operational controls suggested in the ANPR would go through channels “without consideration of the safety implications that the FAA is legally required to address.”33 There is a risk that overlapping, duplicative, and inconsistent aviation standards could result in confusion and safety lapses. The ATA and AIA find a statutory basis for this safety consideration, emphasizing that “Congress intended the CAA not to require EPA to set the most stringent aircraft emissions standards that technically feasible, but rather, to ensure that its aircraft emissions standards do not affect aircraft safety.”34 These groups underscore this point by arguing that “sound policy considerations thus make the compelling argument that aircraft emissions standards must move forward based upon proven technology, not by testing the edge of the technology envelope.”35 V . Conclusion A simple comparison of the Clean Air Act and the FAA statutes and regulations governing aviation demonstrates that **the Clean Air Act** and the EPA **are ill-suited** instruments to comprehensively address aircraft emissions. The **potential for** great **safety, regulatory, and economic harm** as a result of this new process demands a clear delineation of authority and responsibilities between the EPA and FAA. Despite the problems discussed above, the recentlyaltered political and **legal landscape** regarding climate change policy **makes an EPA seat at the aviation table nearly inevitable**.

#### Critical to US airpower

DavidThompson, President, American Institute of Aeronautics and Astronautics, 2009, The Aerospace Workforce, Federal News Service

Aerospace systems are of considerable importance to U.S. national security, economic prosperity, technological vitality, and global leadership. Aeronautical and space systems protect our citizens, armed forces, and allies abroad. They connect the farthest corners of the world with safe and efficient air transportation and satellite communications, and they monitor the Earth, explore the solar system, and study the wider universe. The U.S. aerospace sector also contributes in major ways to America's economic output and hightechnology employment. Aerospace research and development and manufacturing companies generated approximately $240 billion in sales in 2008, or nearly 1.75 percent of our country's gross national product. They currently employ about 650,000 people throughout our country. U.S. government agencies and departments engaged in aerospace research and operations add another 125,000 employees to the sector's workforce, bringing the total to over 775,000 people. Included in this number are more than 200,000 engineers and scientists -one of the largest concentrations of technical brainpower on Earth. However, the U.S. aerospace workforce is now facing the most serious demographic challenge in his 100-year history. Simply put, today, many more older, experienced professionals are retiring from or otherwise leaving our industrial and governmental aerospace workforce than early career professionals are entering it. This imbalance is expected to become even more severe over the next five years as the final members of the Apollo-era generation of engineers and scientists complete 40or 45-year careers and transition to well-deserved retirements. In fact, around 50 percent of the current aerospace workforce will be eligible for retirement within just the next five years. Meanwhile, the supply of younger aerospace engineers and scientists entering the industry is woefully insufficient to replace the mounting wave of retirements and other departures that we see in the near future. In part, this is the result of broader technical career trends as engineering and science graduates from our country's universities continue a multi-decade decline, even as the demand for their knowledge and skills in aerospace and other industries keeps increasing. Today, only about 15 percent of U.S. students earn their first college degree in engineering or science, well behind the 40 or 50 percent levels seen in many European and Asian countries. Due to the dual-use nature of aerospace technology and the limited supply of visas available to highly-qualified non-U.S. citizens, our industry's ability to hire the best and brightest graduates from overseas is also severely constrained. As a result, unless effective action is taken to reverse current trends, the U.S. aerospace sector is expected to experience a dramatic decrease in its technical workforce over the next decade. Your second question concerns the implications of a cutback in human spaceflight programs. AIAA's view on this is as follows. While U.S. human spaceflight programs directly employ somewhat less than 10 percent of our country's aerospace workers, its influence on attracting and motivating tomorrow's aerospace professionals is much greater than its immediate employment contribution. For nearly 50 years the excitement and challenge of human spaceflight have been tremendously important factors in the decisions of generations of young people to prepare for and to pursue careers in the aerospace sector. This remains true today, as indicated by hundreds of testimonies AIAA members have recorded over the past two years, a few of which I'll show in brief video interviews at the end of my statement. Further evidence of the catalytic role of human space missions is found in a recent study conducted earlier this year by MIT which found that 40 percent of current aerospace engineering undergraduates cited human space programs as the main reason they chose this field of study. Therefore, I think it can be predicted with high confidence that a major cutback in U.S. human space programs would be substantially detrimental to the future of the aerospace workforce. Such a cutback would put even greater stress on an already weakened strategic sector of our domestic high-technology workforce. Your final question centers on other issues that should be considered as decisions are made on the funding and direction for NASA, particularly in the human spaceflight area. In conclusion, AIAA offers the following suggestions in this regard. Beyond the previously noted critical influence on the future supply of aerospace professionals, administration and congressional leaders should also consider the collateral damage to the space industrial base if human space programs were substantially curtailed. Due to low annual production rates and highly-specialized product requirements, the domestic supply chain for space systems is relatively fragile. Many second and third-tier suppliers in particular operate at marginal volumes today, so even a small reduction in their business could force some critical suppliers to exit this sector. Human space programs represent around 20 percent of the $47 billion in total U.S. space and missile systems sales from 2008. Accordingly, a major cutback in human space spending could have large and highly adverse ripple effects throughout commercial, defense, and scientific space programs as well, potentially triggering a series of disruptive changes in the common industrial supply base that our entire space sector relies on.

#### Solves miscalculated nuclear war

Dunlap 6 – Maj. General, deputy judge advocate of the Air Force, National War College graduate with over 30 years of Armed Forces Experience (Charles Jr., Armed Forces Journal, “America’s Asymmetric Advantage”, http://www.armedforcesjournal.com/2006/09/2009013)

So where does that leave us? If we are smart, we will have a well-equipped high-technology air power capability. Air power is America's asymmetric advantage and is really the only military capability that can be readily applied across the spectrum of conflict, including, as is especially important these days, potential conflict. Consider the record. It was primarily air power, not land power, that kept the Soviets at bay while the U.S. won the Cold War. And it was not just the bomber force and the missileers; it was the airlifters, as well. There are few strategic victories in the annals of military history more complete and at so low a human cost as that won by American pilots during the Berlin airlift. Armageddon was avoided. And the flexibility and velocity of air power also provides good-news stories in friendly and low-threat areas. For example, huge U.S. transports dropping relief supplies or landing on dirt strips in some area of humanitarian crisis get help to people on a timeline that can make a real difference. Such operations also illustrate, under the glare of the global media, the true American character the world needs to see more often if our strategic goals are to be achieved. Air power also doesn't have the multi-aspect vulnerabilities that boots on the ground do. It can apply combat power from afar and do so in a way that puts few of our forces at risk. True, occasionally there will be a Francis Gary Powers, and certainly the Vietnam-era POWs — mostly airmen — became pawns for enemy exploitation. Yet, if America maintains its aeronautical superiority, the enemy will not be able to kill 2,200 U.S. aviators and wound another 15,000, as the ragtag Iraqi terrorists have managed to do to our land forces. And, of course, bombs will go awry. Allegations will be made (as they are currently against the Israelis) of targeting civilians and so forth. But the nature of the air weapon is such that an Abu Ghraib or Hadithah simply cannot occur. The relative sterility of air power — which the boots-on-the-ground types oddly find distressing as somehow unmartial — nevertheless provides greater opportunity for the discreet application of force largely under the control of well-educated, commissioned officer combatants. Not a total insurance policy against atrocity, but a far more risk-controlled situation. Most important, however, is the purely military effect. The precision revolution has made it possible for air power to put a bomb within feet of any point on earth. Of course, having the right intelligence to select that point remains a challenge — but no more, and likely much less so, than for the land forces. The technology of surveillance is improving at a faster rate than is the ability to conceal. Modern conveniences, for example, from cell phones to credit cards, all leave signatures that can lead to the demise of the increasing numbers of adversaries unable to resist the siren song of techno-connection. Regardless, eventually any insurgency must reveal itself if it is to assume power, and this inevitably provides the opportunity for air power to pick off individuals or entire capabilities that threaten U.S. interests. The real advantage — for the moment anyway — is that air power can do it with impunity and at little risk to Americans. The advances in American air power technology in recent years make U.S. dominance in the air intimidating like no other aspect of combat power for any nation in history. The result? Saddam Hussein's pilots buried their airplanes rather than fly them against American warplanes. Indeed, the collapse of the Iraqi armed forces was not, as the BOTGZ would have you believe, mainly because of the brilliance of our ground commanders or, in fact, our ground forces at all. The subsequent insurgency makes it clear that Iraqis are quite willing to take on our ground troops. What really mattered was the sheer hopelessness that air power inflicted on Iraq's military formations. A quotation in Time magazine by a defeated Republican Guard colonel aptly captures the dispiriting effect of high-tech air attack: "[Iraqi leaders] forgot that we are missing air power. That was a big mistake. U.S. military technology is beyond belief." It is no surprise that the vaunted Republican Guard, the proud fighting organization that tenaciously fought Iran for years, practically jumped out of their uniforms and scattered at the sound of approaching U.S. aircraft. This same ability to inflict hopelessness was even more starkly demonstrated in Afghanistan. For a millennium, the Afghans have been considered among the toughest fighters in the world. Afghan resistance has turned the countryside into a gigantic military cemetery for legions of foreign invaders. For example, despite deploying thousands of troops, well-equipped Soviet forces found themselves defeated after waging a savage war with practically every weapon at their disposal. So what explains the rapid collapse of the Taliban and al-Qaida in 2001? Modern air power. More specifically, the marriage of precision weapons with precise targeting by tiny numbers of Special Forces troops on the ground. The results were stunning. Putatively invulnerable positions the Taliban had occupied for years literally disappeared in a rain of satellite-directed bombs from B-1s and B-52s flying so high they could be neither seen nor heard. This new, high-tech air power capability completely unhinged the resistance without significant commitment of American boots on the ground. Indeed, the very absence of American troops became a source of discouragement. As one Afghan told the New York Times, "We pray to Allah that we have American soldiers to kill," adding disconsolately, "These bombs from the sky we cannot fight." Another equally frustrated Taliban fighter was reported in the London Sunday Telegraph recently as fuming that "American forces refuse to fight us face to face," while gloomily noting that "[U.S.] air power causes us to take heavy casualties." In other words, the Taliban and al-Qaida were just as tough as the mujahideen who fought the Russians, and more than willing to confront U.S. ground forces, but were broken by the hopelessness that American-style air power inflicted upon them. MORE THAN BOMBS Today it is more than just bombing with impunity that imposes demoralization; it is reconnoitering with impunity. This is more than just the pervasiveness of Air Force-generated satellites. It also includes hundreds of unmanned aerial vehicles that are probing the landscape in Iraq and Afghanistan. They provide the kind of reliable intelligence that permits the careful application of force so advantageous in insurgency and counterterrorism situations. The insurgents are incapable of determining where or when the U.S. employs surveillance assets and, therefore, are forced to assume they are watched everywhere and always. The mere existence of the ever-present eyes in the sky no doubt inflicts its own kind of stress and friction on enemy forces. In short, what real asymmetrical advantage the U.S. enjoys in countering insurgencies in Iraq and Afghanistan relates to a dimension of air power. Strike, reconnaissance, strategic or tactical lift have all performed phenomenally well. It is no exaggeration to observe that almost every improvement in the military situation in Iraq and Afghanistan is attributable to air power in some form; virtually every setback, and especially the strategically catastrophic allegations of war crimes, is traceable to the land forces. While it will be seldom feasible for America to effectively employ any sort of boots-on-the-ground strategy in current or future counterinsurgency situations, the need may arise to destroy an adversary's capability to inflict harm on U.S. interests. Although there is no perfect solution to such challenges, especially in low-intensity conflicts, the air weapon is the best option. Ricks' report in "Fiasco," for example, that Iraq's weapons of mass destruction program never recovered from 1998's Operation Desert Fox and its four days of air attacks is interesting. It would appear that Iraq's scientific minds readily conceded the pointlessness of attempting to build the necessary infrastructure in an environment totally exposed to U.S. air attack. This illustrates another salient feature of air power: its ability to temper the malevolent tendencies of societies accustomed to the rewards of modernity. Given air power's ability to strike war-supporting infrastructure, the powerful impulse of economic self-interest complicates the ability of despots to pursue malicious agendas. American air power can rapidly educate cultured and sophisticated societies about the costs of war and the futility of pursuing it. This is much the reason why air power alone delivered victory in Operation Allied Force in Kosovo in 1999, without the need to put a single U.S. soldier at risk on the ground. At the same time, America's pre-eminence in air power is also the best hope we have to dissuade China — or any other future peer competitor — from aggression. There is zero possibility that the U.S. can build land forces of the size that would be of real concern to a China. No number of troops or up-armored Humvees, new radios or advanced sniper rifles worries the Chinese. What dominating air power precludes is the ability to concentrate and project forces, necessary elements to applying combat power in hostile areas. As but one illustration, think China and Taiwan. Saddam might have underestimated air power, but don't count on the Chinese to make the same mistake. China is a powerful, vast country with an exploding, many-faceted economy with strong scientific capabilities. It will take focused and determined efforts for the U.S. to maintain the air dominance that it currently enjoys over China and that, for the moment, deters them. Miscalculating here will be disastrous becasue, unlike with any counterinsurgency situation (Iraq included), the very existence of the U.S. is at risk.

Contains conflicts

Khalilzad and Lesser, 1

(PhD from the University of Chicago, counselor at CSIS, permanent representative to the UN, \*\*Senior Transatlantic Fellow at the US German Marshall Fund, former Vice President and Director of Studies at the Pacific Council on International Policy, RAND, “Sources of Conflict in the 21st Century”, p.164-5, http://www.rand.org/pubs/monograph\_reports/MR897/MR897.chap3.pdf)

This subsection attempts to synthesize some of the key operational implications distilled from the analyses relating to the rise of Asia and the potential for conflict in each of its constituent regions. The first key implication derived from the analysis of trends in Asia suggests that American air and space power will continue to remain critical for conventional and unconventional deterrence in Asia. This argument is justified by the fact that several subregions of the continent still harbor the potential for full-scale conventional war. This potential is most conspicuous on the Korean peninsula and, to a lesser degree, in South Asia, the Persian Gulf, and the South China Sea. In some of these areas, such as Korea and the Persian Gulf, the United States has clear treaty obligations and, therefore, has preplanned the use of air power should contingencies arise. U.S. Air Force assets could also be called upon for operations in some of these other areas. In almost all these cases, U.S. air power would be at the forefront of an American politico-military response because (a) of the vast distances on the Asian continent; (b) the diverse range of operational platforms available to the U.S. Air Force, a capability unmatched by any other country or service; (c) the possible unavailability of naval assets in close proximity, particularly in the context of surprise contingencies; and (d) the heavy payload that can be carried by U.S. Air Force platforms. These platforms can exploit speed, reach, and high operating tempos to sustain continual operations until the political objectives are secured. The entire range of warfighting capability—fighters, bombers, electronic warfare (EW), suppression of enemy air defense (SEAD), combat support platforms such as AWACS and J-STARS, and tankers—are relevant in the Asia-Pacific region, because many of the regional contingencies will involve armed operations against large, fairly modern, conventional forces, most of which are built around large land armies, as is the case in Korea, China-Taiwan, India-Pakistan, and the Persian Gulf.

# 2AC

## t – restriction

#### NSPS bans coal

Brownell et al 12

F. William Brownell, Henry V. Nickel, Norman W. Fichthorn, Allison D. Wood, Hunton & Williams LLP, 9/6/12, LASBRISASENERGYCENTER,LLC,etal., Petitioners, v. UNITED STATES ENVIRONMENTAL ) PROTECTION AGENCY and LISA PEREZ JACKSON, Administrator, United States Environmental Protection Agency, Respondents, insideEPA database

Here, by contrast, EPA published a proposed CO2 NSPS that cannot be achieved by any new coal-fired EGU to which it applies. By virtue of that standard having becoming “applicable” as of April 13, 2012, it now sets the “floor” for determining BACT for those new units and obligates them to demonstrate that they can comply with a standard that is unachievable, a showing that cannot be made.8

The fundamental “alter[ation]” of the PSD “legal regime” effected by EPA’s publication of the April 13 Notice is much more significant than the impediment to permitting that the Supreme Court in Sackett found sufficient to satisfy the second Bennett criterion. In Sackett, the Supreme Court found that “‘legal consequences . . . flow[ed]’” from EPA’s issuance of a compliance order under section 309 of the Clean Water Act, insofar as such issuance “severely limit[ed] the Sacketts’ ability to obtain a permit for their fill from the Army Corps of Engineers,” in light of the Corps’ regulations. 132 S. Ct. at 1371-72 (quoting Bennett, 520 U.S. at 178) (emphasis added). In contrast, since April 13, 2012, electric generators’ ability to obtain PSD permits for new coal-fired EGUs has been not merely “limited” but eliminated entirely.

#### Counter-interp—restrictions include limiting conditions

Plummer 29 J., Court Justice, MAX ZLOZOWER, Respondent, v. SAM LINDENBAUM et al., Appellants Civ. No. 3724COURT OF APPEAL OF CALIFORNIA, THIRD APPELLATE DISTRICT100 Cal. App. 766; 281 P. 102; 1929 Cal. App. LEXIS 404September 26, 1929, Decided, lexis

The word "restriction," when used in connection with the grant of interest in real property, is construed as being the legal equivalent of "condition." Either term may be used to denote a limitation upon the full and unqualified enjoyment of the right or estate granted. The words "terms" and "conditions" are often used synonymously when relating to legal rights. "Conditions and restrictions" are that which limits or modifies the existence or character of something; a restriction or qualification. It is a restriction or limitation modifying or destroying the original act with which it is connected, or defeating, terminating or enlarging an estate granted; something which defeats or qualifies an estate; a modus or quality annexed by him that hath an estate, or interest or right to the same, whereby an estate may be either defeated, enlarged, or created upon an uncertain event; a quality annexed to land whereby an estate may be defeated; a qualification or restriction annexed to a deed or device, by virtue of which an estate is made to vest, to be enlarged or defeated upon the happening or not happening of a particular event, or the performance or nonperformance of a particular act.

#### This is the middle ground—

LVM Institute 96, Ludwig Von Mises Institute Original Book by Ludwig Von Mises, Austrian Economist in 1940, fourth edition copyright Bettina B. Greaves, Human Action, http://mises.org/pdf/humanaction/pdf/ha\_29.pdf

Restriction of production means that the government either forbids or makes more difficult or more expensive the production, transportation, or distribution of definite articles, or the application of definite modes of production, transportation, or distribution. The authority thus eliminates some of the means available for the satisfaction of human wants. The effect of its interference is that people are prevented from using their knowledge and abilities, their labor and their material means of production in the way in which they would earn the highest returns and satisfy their needs as much as possible. Such interference makes people poorer and less satisfied.

This is the crux of the matter. All the subtlety and hair-splitting wasted in the effort to invalidate this fundamental thesis are vain. On the unhampered market there prevails an irresistible tendency to employ every factor of production for the best possible satisfaction of the most urgent needs of the consumers. If the government interferes with this process, it can only impair satisfaction; it can never improve it.

The correctness of this thesis has been proved in an excellent and irrefutable manner with regard to the historically most important class of government interference with production, the barriers to international trade. In this field the teaching of the classical economists, especially those of Ricardo, are final and settle the issue forever. All that a tariff can achieve is to divert production from those locations in which the output per unit of input is higher to locations in which it is lower. It does not increase production; it curtails it.

#### “On production” means there’s no limits disad

Dictionary.com, http://dictionary.reference.com/browse/on

On

preposition

1.so as to be or remain supported by or suspended from: Put your package down on the table; Hang your coat on the hook.

2.so as to be attached to or unified with: Hang the picture on the wall. Paste the label on the package.

#### Says a restriction isn’t a prohibition, which makes zero sense

Sinha 6

S.B. Sinha is a former judge of the Supreme Court of India. “Union Of India & Ors vs M/S. Asian Food Industries,” Nov 7, http://webcache.googleusercontent.com/search?q=cache:http://www.indiankanoon.org/doc/437310/

There would seem to be no occasion to discuss whether or not the Railroad Commissioners had the power and authority to make the order, requiring the three specified railroads running into the City of Tampa to erect a union passenger station in such city, which is set out in the declaration in the instant case and which we have copied above. [\*\*\*29] It is sufficient to say that under the reasoning and the authorities cited in State v. Atlantic Coast Line R. Co., 67 Fla. 441, 458, 63 South. Rep. 729, 65 South. Rep. 654, and State v. Jacksonville Terminal [\*631] Co., supra, it would seem that HN14the Commissioners had power and authority. The point which we are required to determine is whether or not the Commissioners were given the authority to impose the fine or penalty upon the three railroads for the recovery of which this action is brought. In order to decide this question we must examine Section 2908 of the General Statutes of 1906, which we have copied above, in the light of the authorities which we have cited and from some of which we have quoted. It will be observed that the declaration alleges that the penalty imposed upon the three railroads was for the violation of what is designated as "Order No. 282," which is set out and which required such railroads to erect and complete a union depot at Tampa within a certain specified time. If the Commissioners had the authority to make such order, it necessarily follows that they could enforce a compliance with the same by appropriate proceedings in the courts, but [\*\*\*30] it does not necessarily follow that they had the power and authority to penalize the roads for a failure to comply therewith. That is a different matter. HN15Section 2908 of the General Statutes of 1906, which originally formed Section 12 of Chapter 4700 of the Laws of Florida, (Acts of 1899, p. 86), expressly authorizes the imposition of a penalty by the Commissioners upon "any railroad, railroad company or other common carrier doing business in this State," for "a violation or disregard of any rate, schedule, rule or regulation, provided or prescribed by said commission," or for failure "to make any report required to be made under the provisions of this Chapter," or for the violation of "any provision of this Chapter." It will be observed that the word "Order" is not mentioned in such section. Are the other words used therein sufficiently comprehensive to embrace an order made by the Commissioners, such as the one now under consideration? [\*632] It could not successfully be contended, nor is such contention attempted, that this order is covered by or embraced within the words "rate," "schedule" or "any report,' therefore we may dismiss these terms from our consideration and [\*\*\*31] direct our attention to the words "rule or regulation." As is frankly stated in the brief filed by the defendant in error: "It is admitted that an order for the erection of a depot is not a 'rate' or 'schedule' and if it is not a 'rule' or 'regulation' then there is no power in the Commissioners to enforce it by the imposition of a penalty." It is earnestly insisted that the words "rule or regulation" are sufficiently comprehensive to embrace such an order and to authorize the penalty imposed, and in support of this contention the following authorities are cited: Black's Law Dictionary, defining regulation and order; Rapalje & Lawrence's Law Dictionary, defining rule; Abbott's Law Dictionary, defining rule; Bouvier's Law Dictionary, defining order and rule [\*\*602] of court; Webster's New International Dictionary, defining regulation; Curry v. Marvin, 2 Fla. 411, text 515; In re Leasing of State Lands, 18 Colo. 359, 32 Pac. Rep. 986; Betts v. Commissioners of the Land Office, 27 Okl. 64, 110 Pac. Rep. 766; Carter V. Louisiana Purchase Exposition Co., 124 Mo. App. 530, 102 S.W. Rep. 6, text 9; 34 Cyc. 1031. We have examined all of these authorities, as well as those cited by the [\*\*\*32] plaintiffs in error and a number of others, but shall not undertake an analysis and discussion of all of them. The Central Government announced its Foreign Trade Policy in exercise of its power conferred upon it under Section 5 of the 1992 Act by a notification dated 7th April, 2006. The said policy was issued in public interest. Chapter 1A of the said policy also provides for legal framework. Clause 1.5 thereof reads as under: "1.5 In case an export or import that is permitted freely under this Policy is subsequently subjected to any restriction or regulation, such export or import will ordinarily be permitted notwithstanding such restriction or regulation, unless otherwise stipulated, provided that the shipment of the export or import is made within the original validity of an irrevocable letter of credit established before the date of imposition of such restriction." Clause 2.4 of the policy empowers the Director General of Foreign Trade to specify the procedures required to be followed by an exporter in any case or class of cases for the purpose of implementing the provisions of the 1992 Act, the Rules and the Orders made thereunder and the said policy. Such procedures were to be included in the Handbook which would be published by means of a public notice and such procedures may in the like manner be amended from time to time. It was stated: "The Handbook (Vol.1) is a supplement to the Foreign Trade Policy and contains relevant procedures and other details. The procedure of availing benefits under various schemes of the Policy are given in the Handbook (Vol.1)" The Handbook of Procedures which inter alia supplements the Foreign Trade Policy was also issued on 7th April, 2006 upon giving a public notice therefor. It contains nine chapters. Chapter 9 comprises of miscellaneous matters. Paragraph 9.12 lays down the manner in which date of shipment/ dispatch of exports would be reckoned. It inter alia provides: "However, wherever the Policy provisions have been modified to the disadvantage of the exporters, the same shall not be applicable to theconsignments already handed over to the Customs for examination and subsequent exports upto the date of the Public Notice. Similarly, in such cases where the goods are handed over to the customs authorities before the expiry of the export obligation period but actual Exports take place after expiry of the export obligation period, such exports shall be considered within the export obligation period and taken towards fulfillment of export obligation." HIGH COURT JUDGMENTS Whereas the Gujarat High Court invoking Paragraph 9.12 of the Handbook and having regard to the fact that the customs authorities cleared and permitted the loading of the goods and moreover the bill of lading had also been filed, opined that the respondents were entitled to export the goods in terms of the policy decision despite the said notification dated 27.06.2006, the Delhi High Court declared the notification dated 4.07.2006 as ultra vires. SUBMISSIONS Mr. Vikas Singh, learned Additional Solicitor General for Union of India, has raised the following contentions: (i) Clause 1.5 of the Foreign Trade Policy would not apply to a case where the export of goods are totally being prohibited and not merely regulated or restricted. (ii) Having regard to the definition of export and in particular the provision of Section 51 of the 1962 Act, the procedures laid down thereunder as envisaged under Sections 16 and 39 must be complied and they having not been complied with, the impugned judgment of Gujarat High Court cannot be sustained. (iii) Although the notification dated 4.07.2006 was wrongly worded but as thereby benefit was sought to be conferred on those who were not aware of the ban before 22.06.2006 and had opened letters of credit prior thereto were exempted from operation of the said notification, the order of prohibition shall be effective even if a concluded contract had been arrived at for export of goods. The learned counsel for the respondents, on the other hand, submitted: (i) In view of the Foreign Trade Policy issued by the Central Government under Section 5 of the 1992 Act, the amendments carried out therein shall only have a prospective effect and not a retrospective effect. (ii) As the Handbook of Procedures lays down supplemental provisions to the Foreign Trade Policy issued by the Director General of Foreign Trade in exercise of its power under the 1992 Act, the purported prohibition issued under the notification dated 27.06.2006 would not apply to a case where the formalities contained in Section 51 of the 1962 Act had been complied with. (iii) Clause 1.5 of the Foreign Trade Policy having provided for protection to those who were holders of letter of credit, the retrospective effect purported to have been given in terms of the notification dated 4.07.2006 was unconstitutional being hit by Article 14 of the Constitution of India. Would the terms 'restriction' and 'regulation' used in Clause 1.5 of the Foreign Trade Policy include prohibition also, is one of the principal questions involved herein. A citizen of India has a fundamental right to carry out the business of export, subject, of course to the reasonable restrictions which may be imposed by law. Such a reasonable restriction was imposed in terms of the 1992 Act. The purport and object for which the 1992 Act was enacted was to make provision for the development and regulation of foreign trade inter alia by augmenting exports from India. While laying down a policy therefor, the Central Government, however, had been empowered to make provision for prohibiting, restricting or otherwise regulating export of goods. Section 11 of the 1962 Act also provides for prohibition. When an order is issued under Sub-section (3) of Section 3 of the 1992 Act, the export of goods would be deemed to be prohibited also under Section 11 of the 1962 Act and in relation thereto the provisions thereof shall also apply. Indisputably, the power under Section 3 of the 1992 Act is required to be exercised in the manner provided for under Section 5 of the 1992 Act. The Central Government in exercise of the said power announced its Foreign Trade Policy for the years 2004-2009. It also exercised its power of amendment by issuing the notification dated 27.06.2006. Export of all commodities which were not earlier prohibited, therefore, was permissible till the said date. The implementation of the said policy was to be made in terms of the procedures laid down in the Handbook. The provisions of the 1992 Act, the Foreign Trade Policy and the procedures laid down thereunder, thus, provide for a composite scheme. In implementing the said provisions of the scheme, in the event an order of prohibition, restriction or regulation is passed, the provisions of the 1962 Act mutatis mutandis would apply. Section 50 of the 1962 Act provides for entry of goods for exportation. It enjoins a duty upon an exporter to make entry thereof by presenting a shipping bill to the proper officer in a vessel or aircraft. On receipt of the shipping bill, the proper officer has to arrive at its satisfaction that (i) the export of goods is not prohibited; (ii) the exporter has paid the duty assessed thereon and charges payable thereunder in respect of the said goods. Once he arrives at the said satisfaction, he will make an order permitting clearance and loading of the goods for exportation. The scheme of the Foreign Trade Policy postulates that when the policy provisions are amended which are disadvantageous to the exporters, the modification would not be attracted. It furthermore lays down that although actual export had not taken place but in the event goods are handed over to the custom authorities before expiry of the export obligation period but actual export takes place after expiry thereof, the same shall be considered within the export obligation and taken towards fulfillment of such obligation. Section 51 of the 1962 Act, therefore, does not say that unless and until the shipment crosses the international border, the notification imposing prohibition shall be attracted. Different stages for the purpose of the said Act would, therefore, be different. For interpretation of the provisions of the 1992 Act and the policy laid down as also the procedures framed thereunder vis-`-vis the provisions of the 1962 Act, the rate of custom duty has no relevance. What would be relevant for the said purpose would be actual permission of the proper officer granting clearance and loading of the goods for exportation. As soon as such permission is granted, the procedures laid down for export must be held to have been complied with. Strong reliance has been placed by the learned Additional Solicitor General upon a decision of this Court in Principal Appraiser (Exports), Collectorate of Customs and Central Excise and Others v. Esajee Tayabally Kapasi, Calicut [(1995) 6 SCC 536] wherein this Court was concerned with the change in the rate of duty and in that context the construction of Sections 16(1), 39 and 51 of the 1962 Act fell for its consideration. In relation to the rate of duty it was held that the date of "entry outwards" would be the relevant date with reference to which the rate of custom duty on the exported duty is to be worked out. In that case, the goods were cleared for a vessel known as S.S. Neils Maersk. However, for want of space therein goods were shut out. Necessary space for exporting those were secured in another vessel named S.S. P'Xilas wherefor fresh shipping bill was filed on 9.08.1996. It was in the peculiar fact of that case, this Court opined that the rate of export duty prevalent as on 9.08.1996 would be leviable stating: "...It becomes thus clear that the shipping bill as well as the ultimate entry outwards for the goods concerned sought to be exported must have reference to the vessel through which such goods are to be exported. Therefore, before any goods are exported out of Indian territorial waters which vessel is to be utilised for exporting them, becomes a relevant consideration. The shipping bill concerned has to be lodged with reference to a given vessel which is to carry these goods out of the Indian territorial waters and in connection with such a vessel the entry outwards has to be obtained and only thereafter the master of the vessel should allow the loading of the goods for being exported out of India. The rate of duty payable on such exported goods would, therefore, be the rate of duty that was prevalent at the time when entry outwards through a given vessel is obtained. There cannot be an entry outwards in connection with a vessel which does not actually carry such goods for the purpose of export. In the facts of the present case, therefore, conclusion is inevitable that earlier entry outwards for the vessel S.S. Neils Maersk was an ineffective entry outwards for the purpose of computing the rate of customs duty of export on the goods in question. Only the subsequent entry outwards for vessel S.S. PXilas which actually carried these goods out of Indian territorial waters and effected the export of these goods was the only relevant and operative entry outwards and the rate of duty prevalent on the date of the said entry outwards for vessel S.S. PXilas was the only effective rate of duty payable on the export of these goods. Consequently it must be held that the respondent has made out no case for refund of Rs 4444.96 for which he lodged the claim." We may notice that a Constitution Bench of this Court in Gangadhar Narsingdas Agarwal v. P.S. Thrivikraman and Another [(1972) 3 SCC 475] opined that Section 16 of the 1962 Act speaks of the fictional date only in relation to the order of date of entry outwards of the vessel, but the issue with which we are concerned did not arise therein. The fundamental and statutory right of an exporter, in that case, were not sought to be taken away. Esajee Tayabally Kapasi (supra), therefore, has no application in the instant case. Reliance has also been placed on Union of India and Others v. M/s. C. Damani & Co. and Others [1980 (Supp) SCC 707] wherein the vires of Exports (Control) Fifteenth Amendment Order, 1979 prohibiting pre-ban commitments was in question. It was held that there was no ground to discredit the policy. The question raised therein, viz., the effect of failure to honour foreign contracts owing to change in law imposing ban on goods covered thereby whether would attract the plea of frustration of contract was not decided stating: "...This contention may have to be considered here or elsewhere, but, if we may anticipate our conclusion even here, this question is being skirted by us because the kismet of this case can be settled on other principles. The discipline of the judicial process forbids decisional adventures not necessary, even if desirable." **----NU Card starts---**We may, however, notice that M/s. C. Damani (supra) was explained by this Court in State Trading Corporation of India Ltd. v. Union of India and Others [1994 Supp (3) SCC 40]. It is not necessary for us to advert thereto as the said judgment has no application in the instant case. We are, however, not oblivious of the fact that in certain circumstances regulation may amount to prohibition. But, ordinarily the word "regulate" would mean to control or to adjust by rule or to subject to governing principles [See U.P. Cooperative Cane Unions Federations v. West U.P. Sugar Mills Association and Others [(2004) 5 SCC 430] whereas the word "prohibit" would mean to forbid by authority or command. The expressions "regulate" and "prohibit" inhere in them elements of restriction but it varies in degree. The element of restriction is inherent both in regulative measures as well as in prohibitive or preventive measures. We may, however, notice that this Court in State of U.P. and Others v. M/s. Hindustan Aluminium Corpn. and others [AIR 1979 SC 1459] stated the law thus: "It appears that a distinction between regulation and restriction or prohibition has always been drawn, ever since Municipal Corporation of the City of Toronto v. Virgo. Regulation promotes the freedom or the facility which is required to be regulated in the interest of all concerned, whereas prohibition obstructs or shuts off, or denies it to those to whom it is applied. The Oxford English Dictionary does not define regulate to include prohibition so that if it had been the intention to prohibit the supply, distribution, consumption or use of energy, the legislature would not have contended itself with the use of the word regulating without using the word prohibiting or some such word, to bring out that effect." **---NU Card ends--**However, in Talcher Municipality v. Talcher Regulated Market Committee and Another [(2004) 6 SCC 178], it was opined that regulation is a term which is capable of being interpreted broadly and it may amount to prohibition. [See also K. Ramanathan v. State of Tamil Nadu and another, AIR 1985 SC 660] The terms, however, indisputably would be construed having regard to the text and context in which they have been used. Section 3(2) of the 1992 Act uses prohibition, restriction and regulation. They are, thus, meant to be applied differently. Section 51 of the 1962 Act also speaks of prohibition. Thus, in terms of the 1992 Act as also the policy and the procedure laid down thereunder, the terms are required to be applied in different situations wherefor different orders have to be made or different provisions in the same order are required therefor.

#### Their precision ev is about Canadian case law

## congress cp

#### The functional implementation of the CP still requires all 3 branches

Neomi Rao, GMU Assistant Law Professor, Spring 2009, "PRESIDENTIAL POWER IN THE 21ST CENTURY SYMPOSIUM: ARTICLE: THE PRESIDENT'S SPHERE OF ACTION," 45 Willamette L. Rev. 527, lexis

By contrast, as discussed above, Congress cannot legislate without concurrence from the President (although it can overrule a veto with two-thirds of each house). Similarly, the Supreme Court cannot decide issues sua sponte, but must wait for an appropriate case in which it has jurisdiction. Both Congress and the Supreme Court  [\*553]  require coordinated majorities before acting. Moreover, they require the executive to fulfill their directives. The legislative and judicial powers are not designed for quick action - rather such "energy" belongs with the executive.

#### Obama will veto

James E. McCarthy, Congressional Research Service, Specialist in Environmental Policy, 1/9/12, EPA’s Utility MACT: Will the Lights Go Out?, www.eenews.net/assets/2012/01/19/document\_gw\_03.pdf

Although it may be easier to obtain congressional approval of a CRA resolution, the path to enactment of such a resolution is still a steep one. The Obama Administration has made a significant commitment to promulgation of the Utility MACT and considers it one of the Administration’s major achievements. As a result, legislation restricting EPA’s authority to act, if passed by Congress, would likely encounter a presidential veto. There are no special procedures for Senate consideration of a CRA veto override. Overriding a veto (whether for a resolution of disapproval or other legislation) requires a two-thirds majority in both the House and Senate, and is seen by many as unlikely.

#### Status quo proves Congress can’t reign in EPA GHG regulations—Court GHG precedent necessary to solve

Marlo Lewis, Competitive Enterprise Institute, 1/7/10, EPA’s Tailoring Rule: Temporary, Dubious, Incomplete Antidote To Massachusetts v. EPA’s Legacy of Absurd Results (Part 1), www.masterresource.org/2010/01/epas-tailoring-rule-temporary-dubious-incomplete-antidote-to-massachusetts-v-epas-legacy-of-absurd-results/

An obvious question arises: Under what authority may EPA deviate so blatantly from the text of the statute? In Chevron v. Natural Resources Defense Council (467 U.S. 837, 843, 1984), the Supreme Court held that administrative agencies have considerable discretion to interpret statutes where the text is “silent or ambiguous with respect to the specific issue.” However, there is nothing ambiguous about 100 tons or 250 tons. EPA repeatedly asserts that it must depart from a “literal” application of the PSD and Title V regulatory thresholds. But “literal” is just a sanitized synonym for “legal,” “lawful,” or “statutory.” To justify this assumption of legislative power, **EPA invokes the judicial doctrines** of “absurd results” and “administrative necessity.” EPA argues that applying the law as written to CO2 sources would produce two kinds of absurd results. First, EPA would be forced to violate other statutory requirements. Specifically: CAA Sec. 165(c) requires that the permitting authority grant or deny any completed PSD permit application for a major emitting facility not later than one year after the date of filing the application. “A literal interpretation of CAA sections 165(a)(1) and 169(1) to apply at the 100/250 TPY levels would render compliance with this provision impossible by requiring far more permit applications than permitting authorities could process under the 12-month deadline” (TR, 55308). Similarly, a lawful application of the Title V 100 TPY threshold in CAA sections 502(a), 501(2)(B), and 302(j) would clash with CAA Sec. 503(c), which imposes a time limit of 18 months after a permit application is filed for permitting authorities to issue or deny the permit. “It would be flatly impossible for permitting authorities to meet this statutory requirement if their workload increases from 14,000 permits to 6.1 million. Instead, permit applications would face multi-year delays in obtaining their permits” (TR, 55310). Applying the PSD and Title V regulatory thresholds to CO2 would also be absurd in the sense that the consequences would undermine congressional intent. The Tailoring Rule provides several examples: The PSD program (CAA Sec. 160) is supposed to “insure that economic growth will occur,” albeit in a manner consistent with preservation of clean air resources. However, because PSD is a preconstruction requirement, “increasing permitting authorities’ workload from 300 to 41,000 permits would severely undermine this purpose of facilitating economic growth . . . Each year, many thousands of sources would face multi-year delays in receiving their permits, and as a result, for all practical purposes, they would be forced to place on hold their plans to construct or modify” (TR, 55308). More fundamentally, applying PSD to CO2 would undermine a core purpose of the Act — to protect the “productive capacity” of the U.S. population (CAA Sec. 101). Congress designed PSD to apply to large industrial facilities, “which due to their size, are financially able to bear the substantial regulatory costs imposed by the PSD provisions and which, as a group, are primarily responsible for emissions of the deleterious pollutants that befoul the nation’s air” [quoting Alabama Power v. Costle, 636 F.2d at 353]. Congress wanted to exclude small entities from PSD regulation (TR, 55308-55309). Congress intended through Title V to improve CAA compliance by compiling in a single document all of a major source’s regulatory requirements. However, the vast majority of the 6.1 million CO2 sources that would have to apply for Title V permits have no existing CAA requirements. Compelling them to apply for operating permits “would not improve compliance” (TR, 55311). On the contrary, applying Title V to CO2 would undermine compliance. Many sources that Congress did intend for EPA to regulate would not be regulated due to the enormous backlogs resulting from the application of PSD and Title V to myriad sources Congress did not intend for EPA to regulate (TR, 55311). In sum, the immense volume of permit applications would overload and crash both programs. Clearly, Congress did not intend for the PSD and Title V programs to self-destruct. The Tailoring Rule reviews several court cases in which EPA, the Federal Trade Commission, and the Federal Energy Regulation Commission invoked “administrative necessity” to set aside clear statutory language. In all of these cases, courts rejected the agencies’ attempts to depart from the statute (TR 55312-55314). But, pleads EPA, the “situation we confront is unprecedented”; the burdens EPA would encounter in administering PSD and Title V for CO2 “have no precedent in case law” (TR, 55337, 55318). There is no question that applying the CAA permitting programs to CO2 – the automatic consequence of establishing GHG standards for new motor vehicles – would produce a morass of unprecedented absurdity and administrative impossibility. However, EPA tippy toes around the root of the problem: Mass. v. EPA. IV. Massachusetts v. EPA: Making a Fortress out of a Bowdlerized Dictionary EPA is entirely correct: Congress did not intend to apply PSD and Title V to small entities, did not intend for those programs to implode under their own weight, did not intend for PSD to stop development, and did not intend for Title V to undermine compliance with the Act. However, those are the inexorable consequences of an endangerment finding for greenhouse gases under CAA Sec. 202, which in turn is powerful evidence that Congress did not intend for EPA to regulate GHGs under that provision. Common sense leads to the same conclusion. Congressional support for regulatory climate policy is far stronger today than it was in 1970 and 1977, when Congress enacted and amended CAA Sec. 202. Yet even today, the prospects for cap-and-trade legislation and for U.S. ratification of a legally-binding emission-reduction treaty remain in doubt. The notion that Congress, in 1970 or 1977, implicitly authorized EPA to implement climate policies that recent Congresses have rejected or declined to enact is ludicrous. Only once has Congress enacted legislation directing EPA to reduce GHG emissions – the renewable fuel standard (RFS) established by the Energy Independence and Security Act (EISA). However, this is the exception that proves the rule. Enacted months after Mass v. EPA was decided, the RFS mandates the sale of renewable fuels, which must achieve specified percentage reductions in GHG emissions, based on a life-cycle analysis, compared to petroleum-based fuels. Importantly, EISA Sec. 210(b)(12) clarifies that the RFS does not establish precedent for any additional regulation of CO2 or other greenhouse gases under other CAA provisions: Nothing in this subsection, or regulations issued pursuant to this subsection, shall affect or be construed to affect the regulatory status of carbon dioxide or any other greenhouse gas, for purposes of other provisions (including section 165 [i.e., the PSD program] of this Act [i.e., the Clean Air Act]. In the Tailoring Rule, EPA writes as if Congress, when it enacted or amended the CAA in 1970 or 1977, somehow inserted malicious code — the regulatory equivalent of a computer virus — into the text of the statute. This self-destruct program, we are to suppose, was lurking in there all this time. Then all of a sudden, the dormant bug became active, and now the CAA is going haywire, working at cross purposes with itself, subverting congressional intent, and imperiling the nation’s economic future. Therefore, EPA must step in, play lawmaker, and amend the Act. And if anybody at EPA really believes that, I’ve got a bridge I’d like to sell him. When a court decision leads to absurd results and administrative paralysis, there are only two possibilities. Either (1) absurdity and administrative impossibility were embedded in the statute from the beginning, and the court just brought the statute’s flaws to light. Or (2) the court manufactured the bizarre malfunctioning of the statute by misreading it. The impending PSD/Title V red-tape nightmare is entirely a product of the Massachusetts Court’s agenda-driven decision. The core issue in Mass. v. EPA, which the Court never addressed, is whether Congress, when it enacted and amended CAA Sec. 202 in 1970 and 1977, intended for EPA to apply the Act as a whole, including PSD and Title V and the NAAQS program, to CO2 for global warming purposes. To ask this question is to answer it. To justify the Amending Rule, EPA quotes Judge Learned Hand’s famous injunction “not to make a fortress out of the dictionary” when interpreting a statute (TR, 55306). But that is what the Court majority did in Mass. v. EPA. More precisely, the majority made a fortress out of their own bowdlerized version of the CAA definition of “air pollutant.” To reach the conclusion that CO2 is an “air pollutant” for regulatory purposes, the Court majority had to withhold Chevron deference from respondent EPA’s reasonable reading of CAA Sec. 302(g). EPA argued that emitted substances are “air pollutants” only if they are “air pollution agents.” The majority, following petitioners, held that anything emitted per se is an “air pollutant.” This was in fact the lynchpin of petitioners’ argument and the majority’s conclusion. Obviously, if anything emitted into the ambient air is ipso facto an “air pollutant,” then GHGs are within EPA‘s regulatory reach. But to affirm this conclusion, the majority had to read Sec. 302(g) selectively — no mean feat, since the provision is only two sentences long. Here it is, in full: The term “air pollutant” means any air pollution agent or combination of such agents, including any physical, chemical, biological, or radioactive (including source material, special nuclear material, and by-product material) substance or matter, which is emitted into, or otherwise enters, the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent that the Administrator has identified such precursor or precursors for the particular purpose for which the term “air pollutant” is used. If Congress had meant that any substance emitted into or otherwise entering the ambient air is an “air pollutant,” it could have easily said so. Instead, the text says that any “air pollution agent” or “combination of such agents” emitted into or otherwise entering is an “air pollutant.” An air pollution “agent” is something that causes air pollution — something that dirties, fouls, or contaminates the air. Carbon dioxide emissions do not fit that description. The Court majority read “air pollution agent” as a synonym for “air pollutant” rather than as a criterion for distinguishing pollutants from non-pollutants. This reading makes the first sentence of Sec. 302(g) hopelessly circular. It might as well say: “The term ‘air pollutant’ means any air pollutant or combination of such pollutants…” **This is not what Congress wrote and is not likely what Congress meant**, because circular definitions define nothing. Worse, treating “air pollutant” and “air pollution agent” as interchangeable terms turns the first sentence into a formalism whereby a thing can be an “air pollutant” even if it does not pollute the air. As Justice Scalia quipped in dissent, the majority effectively held that “anything airborne, from Frisbees to flatulence, qualifies as an ‘air pollutant’” (Mass. v. EPA, 558). Indeed, under the majority‘s reading, even completely clean air — air that is 100% pollution-free — is an “air pollutant” if it is “emitted” or “otherwise enters.” That is absurd. From absurd premises come absurd results. The majority not only gave short shrift to “air pollution agent” and “combination of such agents” — key terms in the first sentence — they totally ignored the second sentence. The second sentence of Sec. 302(g) says that a “precursor” of a previously designated air pollutant is also an air pollutant. This sentence would be utterly superfluous if, as the majority held, anything “emitted” or “otherwise entering” is automatically an “air pollutant,” because precursors form air pollutants only by being emitted into or otherwise entering the air. **Courts are not supposed to assume that lawmakers pad statutes with superfluous verbiage**. Rather, they are supposed to make a good faith effort to determine the meaning and implications of each sentence of each provision bearing on the case. Ignoring half the provision in dispute without explanation is not kosher.

## reverse ptx

#### Visa’s not key to reverse brain drain

Wadhwa 9

Vivek Wadhwa, executive in residence/adjunct professor at the Pratt School of Engineering at Duke University and a senior research associate with the Labor and Worklife Program at Harvard Law School, Spring 2009, “A Reverse Brain Drain,” Issues in Science and Technology, <http://www.issues.org/25.3/wadhwa.html>

To our surprise, visa status was not the most important factor determining their decision to return home. Three of four indicated that considerations regarding their visa or residency permit status did not contribute to their decision to return to their home country. In fact, 27% of Indian respondents and 34% of Chinese held permanent resident status or were U.S. citizens. For this highly select group of returnees, career opportunities and quality-of-life concerns were the main reasons for returning home. Family considerations are also strong magnets pulling immigrants back to their home countries. The ability to better care for aging parents and the desire to be closer to friends and family were strong incentives for returning home. Indians in particular perceived the social situation in their home country to be significantly superior. The move home also appeared to be something of a career catalyst. Respondents reported that they have moved up the organization chart by returning home. Only 10% of the Indian returnees held senior management positions in the United States, but 44% found jobs at this level in India. Chinese returnees went from 9% in senior management in the United States to 36% in China. Opportunities for professional advancement were considered to be better at home than in the United States for 61% of Indians and 70% of Chinese. These groups also felt that opportunities to launch their own business were significantly better in their home countries.

#### Aviation’s key to Asia-Pacific interdependence

IATA, 11/9/12, Infrastructure to Support Asian Growth, www.iata.org/pressroom/pr/pages/2012-11-09-01.aspx

The International Air Transport Association (IATA) urged **Asia-Pacific aviation leaders** to **focus on airport and air traffic management infrastructure** as the region’s demand for connectivity continues to grow. “Aviation is a vital part of Asia’s economy, supporting 24 million jobs and nearly half-a-trillion dollars of GDP. Connectivity, facilitated by aviation, is a critical link to markets and a generator of wealth—both material and of the human spirit. **Ensuring the timely development of sufficient and cost-efficient infrastructure capacity is a priority for the continued successful growth of air transport in Asia-Pacific**,” said Tony Tyler, IATA’s Director General and CEO. Tyler was speaking to delegates at the Association of Asia Pacific Airlines (AAPA) Assembly of Presidents in Kuala Lumpur. Airports: IATA advocated for a prudent approach to private investment in the development of airport infrastructure to support demand growth in the Asia-Pacific region. The comments come as a trend is emerging across the region with governments in Vietnam, Indonesia and the Philippines all considering the participation of private investors as they plan for the development of airport infrastructure. The Korean government is considering private equity participation in Incheon airport. “I am not advocating for or against private participation. But there have been enough mistakes made when engaging the private sector in airport development. These should not be repeated. When governments work with private investors to develop infrastructure they must establish an effective economic and service-level regulatory framework to ensure that the national interest is well protected. That means ensuring that air connectivity is both cost-effective and efficient,” said Tyler. Tyler cited the example of Delhi Airport, where the 46% concession fee is making the airport unaffordable for airlines. Despite several appeals from the industry, the Airport Economic Regulatory Authority approved an increase of 346%. “Private sector participation was able to build a great hub facility. But the framework for economic regulation is not sufficiently supporting the long-term need for cost-efficient connectivity to fuel economic growth,” said Tyler. He also noted that when the Hong Kong government looked at airport privatization in 2003-4, the conclusion was to keep Hong Kong International Airport fully under government ownership as the best way to ensure that it delivered maximum benefit to the Hong Kong economy. Air Traffic Management (ATM): IATA urged cross-border regional thinking for the development of Asia-Pacific’s ATM infrastructure. “Asia-Pacific is not immune to air traffic congestion issues, and these will grow acute if they are not well-managed with a regional perspective. The Seamless **Asian Sky initiative is helping to define the way forward by harmonizing procedures and interoperable technology between states**, bearing in mind it needs to be cost efficient at the same time. We must not repeat the mistakes made in Europe where efforts to implement a Single European Sky are stalled because states are not delivering,” said Tyler. The annual cost of airspace fragmentation to the European economy is estimated at over EUR 5 billion annually and the cost to the environment is 16 million tonnes of CO2 emissions.

#### Courts link to politics

Lindsay Harrison, Lecturer in Law at the University of Miami School of Law, 11/18/2005, Does the Court Act As "Political Cover" for the Other Branches?, http://legaldebate.blogspot.com/2005/11/does-court-act-as-political-cover-for.html

Does the Court Act as "Political Cover" for the Other Branches? While the Supreme Court may have historically been able to act as political cover for the President and/or Congress, that is not true in a world post-Bush v. Gore. The Court is seen today as a politicized body, and especially now that we are in the era of the Roberts Court, with a Chief Justice hand picked by the President and approved by the Congress, it is highly unlikely that Court action will not, at least to some extent, be blamed on and/or credited to the President and Congress. The Court can still get away with a lot more than the elected branches since people don't understand the technicalities of legal doctrine like they understand the actions of the elected branches; this is, in part, because the media does such a poor job of covering legal news. Nevertheless, it is preposterous to argue that the Court is entirely insulated from politics, and equally preposterous to argue that Bush and the Congress would not receive at least a large portion of the blame for a Court ruling that, for whatever reason, received the attention of the public.

#### Labor fight kills the bill

Anna Palmer, 3/22/13, Immigration deal in limbo as business, labor clash, dyn.politico.com/printstory.cfm?uuid=1B5B052A-9CA3-4105-8BBE-B24B22287C3E

The Senate’s “Gang of Eight” is preparing to leave town with a deal on immigration reform in limbo, stalled by a fight between Big Labor and Big Business.

On Thursday morning, it had appeared that a deal was in hand over the major remaining sticking point: the outlines of a broad new visa program aimed at balancing the need for foreign workers in low-skilled jobs with the desires of American workers competing for those same jobs.

So much for optimism.

In a closed-door session that stretched late into Thursday night, **things got heated**. Sources said negotiations grew extremely tense after business groups balked. There were more talks on Friday — but no more progress, even though negotiations continued in a rare Friday night session of the Senate.

Now, the Gang of Eight faces a quandary. If senators can’t win the endorsement of labor and business, they must soon decide whether to go their own way — absent the support of the U.S. Chamber of Commerce and AFL-CIO — and hope the powerful interest groups stay neutral when a bill eventually emerges.

The senators said they would continue to negotiate with the interest groups during their two-week recess, with the goal of narrowing their differences, winning their backing and rolling out a proposal in the second week of April. That would set up a Senate Judiciary Committee vote before the end of the month, with floor votes by early summer.

“People have a lot at stake here,” said Sen. John McCain (R-Ariz.). “This is a huge deal. Talking about the lives of 11 million people just to start with, so I understand why passions are high, and sentiments are high."

Late Friday night, tensions were still at a boil. Labor officials accused Republicans and business groups of proposing “congressionally sanctioned poverty” for low-skilled workers. And Chamber officials attacked labor groups for preventing a deal from taking shape.

“The unions have jeopardized the entire immigration reform effort, which would provide a pathway to legalization and citizenship for the 10-11 million undocumented workers, because of their refusal to take a responsible stance on a small temporary worker program,” Randy Johnson, the Chamber’s senior vice president of Labor, Immigration, and Employee Benefits, said in a late Friday night statement. “These types of programs have always been considered a key part of comprehensive immigration reform.”

#### Obama’s not involved

Julie Pace, Associated press whtie house correspondent, 3/27/13, Obama: Immigration bill could pass by summer, www.timesunion.com/news/politics/article/Obama-back-at-forefront-of-immigration-debate-4389183.php

While overhauling the nation's patchwork immigration laws is a top second term priority for the president, he has ceded the negotiations almost entirely to Congress. He and his advisers have calculated that a bill crafted by Capitol Hill stands a better chance of winning Republican support than one overtly influenced by the president. In his interviews Wednesday, Obama tried to **stay out of the prickly policy issues** that remain unfinished in the Senate talks, though he said a split between business and labor on wages for new low-skilled workers was unlikely to "doom" the legislation.

#### No issue spillover

Judson Berger, 3/4/13, Recurring budget crises could put squeeze on Obama's second-term priorities, www.foxnews.com/politics/2013/03/04/recurring-budget-crises-could-put-squeeze-on-obama-second-term-priorities/

Rep. Luis Gutierrez, D-Ill., a vocal advocate for immigration reform, voiced confidence Monday that the administration and Congress could handle the busy agenda.

"The spirit of bipartisan cooperation that is keeping the immigration issue moving forward has not been poisoned by the sequester and budget stalemate, so far," he said in a statement. "The two sets of issues seem to exist in parallel universes where I can disagree with my Republican colleagues strenuously on budget matters, but still work with them effectively to eventually reach an immigration compromise. ... I remain extremely optimistic that immigration reform is going to happen this year."

Immigration reform efforts are still marching along despite the budget drama. Obama met last week on the issue with Sens. John McCain, R-Ariz., and Lindsey Graham, R-S.C., who both are part of a bipartisan group crafting legislation.

## k

#### Forecasting hypothetical impact scenarios based on energy trajectories is critical to effective energy policy

Paul P. Craig 2, Professor of Engineering Emeritus at the University of California, Davis, What Can History Teach Us? A Retrospective Examination of Long-Term Energy Forecasts for the United States, Annu. Rev. Energy Environ. 2002. 27:83–118

The applicable measure of success here is the degree to which the forecast can prompt learning and induce desired changes in behavior. The Limits to Growth model (discussed below) has been widely used to help students understand the counterintuitive nature of dynamical systems (11). Simulations and role-playing games have also been used to teach executives in the utility industry how new markets for SO2 emissions permits or electric power might behave. Experience with exercising these types of models can improve intuition for the behavior of complex systems (12–14).

2.4. Use 4: In Automatic Management Systems Whose Efﬁcacy Does Not Require the Model to be a True Representation

Hodges & Dewar use the example of the Kalman ﬁlter, which can be used to control (for example) the trafﬁc on freeway on-ramps. These ﬁlters can model trafﬁc ﬂow, but only in a stochastic representation that does not pretend to be exact and validated, just useful. Similar ﬁlters can also be embedded in management systems controlling power systems or factory processes. As long as the model cost-effectively controls the process in question, the issue of whether it is an exact representation of reality is not of concern. Neural networks fall into this category (15).

2.5. Use 5: As Aids in Communication and Education

By forcing analysts to discuss data and analysis results in a systematic way, forecasting models can facilitate communication between various stakeholders. The measure of success for this use is the degree to which the model improves understanding and communication, both for individuals and between groups with different mindsets and vocabularies.

For example, the population of a developing country at some future time might depend on childhood survival rates, longevity, female literacy, afﬂuence, income distribution, health care, and nutrition. Modeling these inﬂuences could permit better understanding of interlinkages between them and improve communication between expert groups with diverse backgrounds. Such a model could inform, for instance, a government’s long-term plans. Another example is the U.S. DOE’s Energy Information Administration (EIA) Annual Energy Outlook forecast (16). This widely used forecast, based on the EIA’s latest analysis of the current data and industry expectations, provides a baseline that others can and do use for their own explorations of the future.

When a problem is being analyzed, word leaks out and leads to suggestions, ideas, and information from outside parties. This can add to the analysis directly, or stimulate helpful complementary work by others. A politician facing a thorny problem might commission a study to locate knowledgeable people. Thus, studies can identify talent as a by-product. The National Academy of Sciences Committee on Nuclear and Alternative Energy Systems (CONAES) study, one of those assessed in the DOE review of forecasts from the 1970s (Figure 1) (5), was directly or indirectly responsible for many career shifts. The American Physical Society “Princeton Study” held during the summer of 1973 was explicitly designed with this intent (17). The oil embargos of the 1970s had led many physicists to think about making career shifts. The study gave them an opportunity to learn about energy issues, to meet and get to know experts, and to ﬁnd jobs.

2.6. Use 6: To Understand the Bounds or Limits on the Range of Possible Outcomes

Models can enhance conﬁdence through limiting or bounding cases. The Princeton Study referred to in Use 5 includes many examples (17). This study emphasized energy efﬁciency, with a focus on physical constraints to energy use. The cornerstone of the analysis was the concept of fundamental physical limits such as the ﬁrst and second laws of thermodynamics. This work showed that great potential existed for improving efﬁciency by engineering change. Energy efﬁciency became a major theme of energy policy and remains so to this day.

2.7. Use 7: As Aids to Thinking and Hypothesizing

Forecasts can help people and institutions think through the consequences of their actions. Researchers often begin their exercises with baseline or “business-as usual” forecasts, which attempt to predict how the world will evolve assuming current trends continue. Alternative forecasts are then created to assess the potential effects of changes in key factors on the results. For example, an economic forecaster might use such an analysis to assess the likely effects of a change in property taxes on economic growth in a particular state.

Computer forecasting is an excellent tool to teach people the dynamics of complex systems (12, 13). The behavior of these systems is often counterintuitive, so such forecasting games can help people learn to manage them better. For example, systems dynamics models (described below) were used in the 1960s to explain why building premium housing in urban areas can under some plausible circumstances accelerate, rather than slow, migration to suburbs (14, p. 5)2.

Some forecasts are generated as part of scenario exploration exercises, which can be helpful any time a person or institution faces a critical choice. Oil companies, for example, are well aware that at some point the transportation sector may have to switch to some other fuel. Even though this switch may be a long time in the future, the prospect needs to be part of current contingency planning. Considering a wide range of scenarios can help institutions prepare for the many different ways the future can evolve. Institutions use forecasts to allocate physical and personnel resources. Some businesses have massive infrastructures with long time constants and ﬁnd it useful to forecast over decades (18).

#### Psychoanalysis can’t explain international politics

Sharpe, lecturer, philosophy and psychoanalytic studies, and Goucher, senior lecturer, literary and psychoanalytic studies – Deakin University, ‘10

(Matthew and Geoff, Žižek and Politics: An Introduction, p. 182 – 185, Figure 1.5 included)

Can we bring some order to this host of criticisms? It is remarkable that, for all the criticisms of Žižek’s political Romanticism, no one has argued that the ultra- extremism of Žižek’s political position might reflect his untenable attempt to shape his model for political action on the curative final moment in clinical psychoanalysis. The differences between these two realms, listed in Figure 5.1, are nearly too many and too great to restate – which has perhaps caused the theoretical oversight. The key thing is this. Lacan’s notion of traversing the fantasy involves the radical transformation of people’s subjective structure: a refounding of their most elementary beliefs about themselves, the world, and sexual difference. This is undertaken in the security of the clinic, on the basis of the analysands’ voluntary desire to overcome their inhibitions, symptoms and anxieties.

As a clinical and existential process, it has its own independent importance and authenticity. The analysands, in transforming their subjective world, change the way they regard the objective, shared social reality outside the clinic. But they do not transform the world. The political relevance of the clinic can only be (a) as a supporting moment in ideology critique or (b) as a fully- fl edged model of politics, provided that the political subject and its social object are ultimately identical. Option (*b*), Žižek’s option, rests on the idea, not only of a subject who becomes who he is only through his (mis) recognition of the objective sociopolitical order, but whose ‘traversal of the fantasy’ is immediately identical with his transformation of the socio- political system or Other. Hence, according to Žižek, we can analyse the institutional embodiments of this Other using psychoanalytic categories. In Chapter 4, we saw Žižek’s resulting elision of the distinction between the (subjective) Ego Ideal and the (objective) Symbolic Order. This leads him to analyse our entire culture as a single subject–object, whose perverse (or perhaps even psychotic) structure is expressed in every manifestation of contemporary life. Žižek’s decisive political- theoretic errors, one substantive and the other methodological, are different (see Figure 5.1)

The *substantive problem* is to equate any political change worth the name with the total change of the subject–object that is, today, global capitalism. This is a type of change that can only mean equating politics with violent regime change, and ultimately embracing dictatorial government, as Žižek now frankly avows (*IDLC* 412–19). We have seen that the ultra- political form of Žižek’s criticism of everyone else, the theoretical Left and the wider politics, is that no one is sufficiently radical for him – even, we will discover, Chairman Mao. We now see that this is because Žižek’s model of politics proper is modelled on a pre- critical analogy with the total transformation of a subject’s entire subjective structure, at the end of the talking cure. For what could the concrete consequences of this governing analogy be?

We have seen that Žižek equates the individual fantasy with the collective identity of an entire people. The social fantasy, he says, structures the regime’s ‘inherent transgressions’: at once subjects’ habitual ways of living the letter of the law, and the regime’s myths of origin and of identity. If political action is modelled on the Lacanian cure, it must involve the complete ‘traversal’ – in Hegel’s terms, the abstract versus the determinate negation – of all these lived myths, practices and habits. Politics must involve the periodic founding of



entire new subject–objects. Providing the model for this set of ideas, the fi rst Žižekian political subject was Schelling’s divided God, who gave birth to the entire Symbolic Order before the beginning of time (*IDLC* 153; *OB* 144–8).

But can the political theorist reasonably hope or expect that subjects will simply give up on all their inherited ways, myths and beliefs, all in one world- creating moment? And can they be legitimately asked or expected to, on the basis of a set of ideals whose legitimacy they will only retrospectively see, after they have acceded to the Great Leap Forward? And if they do not – for Žižek laments that today subjects are politically disengaged in unprecedented ways – what means can the theorist and his allies use to move them to do so?

#### Even if they’re right about drives, the repression-lashout link has been disproven

Havi Carel 6, Senior Lecturer in Philosophy at the University of the West of England, “Life and Death in Freud and Heidegger”, googlebooks

Secondly, the constancy principle on which these ideas are based is incompatible with observational data. Once the passive model of the nervous system has been discarded, there was no need for external excitation in order for discharge to take place, and more generally, "the behavioural picture seemed to negate the notion of drive, as a separate energizer of behaviour" {Hcbb. 1982. p.35). According to Holt, the nervous system is not passive; it does not take in and conduct out energy from the environment, and it shows no tendency to discharge its impulses. 'The principle of constancy is quite without any biological basis" (1965, p. 109). He goes on to present the difficulties that arise from the pleasure principle as linked to a tension-reduction theory. The notion of tension is "conveniently ambiguous": it has phenomenological, physiological and abstract meaning. But empirical evidence against the theory of tension reduction has been "mounting steadily" and any further attempts to link pleasure with a reduction of physiological tension are "decisively refuted" (1965, pp. 1102). Additionally, the organism and the mental system are no longer considered closed systems. So the main arguments for the economic view collapse, as does the entropic argument for the death drive (1965, p. 114). A final, more general criticism of Freud's economic theory is sounded by Compton, who argues, "Freud fills in psychological discontinuities with neurological hypotheses" (1981, p. 195). The Nirvana principle is part and parcel of the economic view and the incomplete and erroneous assumptions about the nervous system (Hobson, 1988, p.277). It is an extension ad extremis of the pleasure principle, and as such is vulnerable to all the above criticisms. The overall contemporary view provides strong support for discarding the Nirvana principle and reconstructing the death drive as aggression.

#### Simulation allows us to influence state policy AND is key to agency

**Eijkman 12**

The role of simulations in the authentic learning for national security policy development: Implications for Practice / Dr. Henk Simon Eijkman. [electronic resource] <http://nsc.anu.edu.au/test/documents/Sims_in_authentic_learning_report.pdf>. Dr Henk Eijkman is currently an independent consultant as well as visiting fellow at the University of New South Wales at the Australian Defence Force Academy and is Visiting Professor of Academic Development, Annasaheb Dange College of Engineering and Technology in India. As a sociologist he developed an active interest in tertiary learning and teaching with a focus on socially inclusive innovation and culture change. He has taught at various institutions in the social sciences and his work as an adult learning specialist has taken him to South Africa, Malaysia, Palestine, and India. He publishes widely in international journals, serves on Conference Committees and editorial boards of edited books and international journal

However, whether as an approach to learning, innovation, persuasion or culture shift, policy simulations derive their power from two central features: their combination of simulation and gaming (Geurts et al. 2007). 1. The simulation element: the unique combination of simulation with role-playing.The unique simulation/role-play mix enables participants to create **possible futures** relevant to the topic being studied. This is diametrically opposed to the more traditional, teacher-centric approaches in which a future is produced for them. In policy simulations, possible futures are much more than an object of tabletop discussion and verbal speculation. ‘**No other technique** allows a group of participants to engage in collective action in a safe environment to create and analyse the futures they want to explore’ (Geurts et al. 2007: 536). 2. **The game element:** the interactive and tailor-made modelling and design of the policy game. The actual run of the policy simulation is only one step, though a most important and visible one, in a collective process of investigation, communication, and evaluation of performance. In the context of a post-graduate course in public policy development, for example, a policy simulation is a dedicated game constructed in collaboration with practitioners to achieve a high level of proficiency in relevant aspects of the policy development process. To drill down to a level of finer detail, **policy** development simulations—as forms of interactive or participatory modelling— are particularly effective in developing participant knowledge and skills in the five key areas of the policy development process (and success criteria), namely: Complexity, Communication, Creativity, Consensus, and Commitment to action (‘the five Cs’). The capacity to provide effective learning support in these five categories has proved to be particularly helpful in strategic decision-making (Geurts et al. 2007). Annexure 2.5 contains a detailed description, in table format, of the synopsis below.

#### No impact to crisis-opportunism – that’s when all change happens

Jonathan Chait 8, senior editor at the New Republic, Dead Left, July 30, <http://www.newrepublic.com/article/books/dead-left>

Klein repeatedly implies that there is something immoral about using crises to advance the right-wing agenda without explaining why this is so. After all, Friedman wanted to overhaul the New Orleans public education system because he believed, rightly or wrongly, that vouchers would work better. If you thought your house was horribly designed, and a tornado flattened it, would you rebuild it exactly as before?

The notion that crises create fertile terrain for political change, far from being a ghoulish doctrine unique to free-market radicals, is a banal and ideologically universal fact. (Indeed, it began its dubious modern career in the orbit of Marxism, where it was known as “sharpening the contradictions.”) Entrenched interests and public opinion tend to run against sweeping reform, good or bad, during times of peace and prosperity. Liberals could not have enacted the New Deal without the Great Depression. Communist revolutions have generally come about in the wake of wars. The liberal economist Victor R. Fuchs once wrote that “national health insurance will probably come to the United States in the wake of a major change in the political climate, the kind of change that often accompanies a war, a depression, or large-scale civil unrest.”

Fuchs did not mean that the public would never accept universal health insurance unless they had been brutalized into doing so. Nor was his observation evidence that he longed for disaster to befall the United States. Most American liberals today would admit that the sorry state of the American economy, foreign policy, and political life has created a golden opportunity for progressive reform. There is nothing odious about this. Yet Klein takes analogous observations from conservatives as proof that the right “prays for crisis the way drought-stricken farmers pray for rain.”

#### Predictions and scenario building are valuable for decision-making, even if they’re not perfect

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Banning, In Search of Sand Piles and Butterflies, director of the Asia Program and Strategic Foresight Initiative at the Atlantic Council.

http://www.acus.org/disruptive\_change/search-sand-piles-and-butterflies

 “Disruptive change” that produces “strategic shocks” has become an increasing concern for policymakers, shaken by momentous events of the last couple of decades that were not on their radar screens – from the fall of the Berlin Wall and the 9/11 terrorist attacks to the 2008 financial crisis and the “Arab Spring.” These were all shocks to the international system, predictable perhaps in retrospect but predicted by very few experts or officials on the eve of their occurrence. This “failure” to predict specific strategic shocks does not mean we should abandon efforts to foresee disruptive change or look at all possible shocks as equally plausible. Most strategic shocks do not “come out of the blue.” We can understand and project long-term global trends and foresee at least some of their potential effects, including potential shocks and disruptive change. We can construct alternative futures scenarios to envision potential change, including strategic shocks. Based on trends and scenarios, we can take actions to avert possible undesirable outcomes or limit the damage should they occur. We can also identify potential opportunities or at least more desirable futures that we seek to seize through policy course corrections. We should distinguish “strategic shocks” that are developments that could happen at any time and yet may never occur. This would include such plausible possibilities as use of a nuclear device by terrorists or the emergence of an airborne human-to-human virus that could kill millions. Such possible but not inevitable developments would not necessarily be the result of worsening long-term trends. Like possible terrorist attacks, governments need to try to prepare for such possible catastrophes though they may never happen. But there are other potential disruptive changes, including those that create strategic shocks to the international system, that can result from identifiable trends that make them more likely in the future—for example, growing demand for food, water, energy and other resources with supplies failing to keep pace. We need to look for the “sand piles” that the trends are building and are subject to collapse at some point with an additional but indeterminable additional “grain of sand” and identify the potential for the sudden appearance of “butterflies” that might flap their wings and set off hurricanes. Mohamed Bouazizi, who immolated himself December 17, 2010 in Sidi Bouzid, Tunisia, was the butterfly who flapped his wings and (with the “force multiplier” of social media) set off a hurricane that is still blowing throughout the Middle East. Perhaps the metaphors are mixed, but the butterfly’s delicate flapping destabilized the sand piles (of rising food prices, unemployed students, corrupt government, etc.) that had been building in Tunisia, Egypt, and much of the region. The result was a sudden collapse and disruptive change that has created a strategic shock that is still producing tremors throughout the region. But the collapse was due to cumulative effects of identifiable and converging trends. When and what form change will take may be difficult if not impossible to foresee, but the likelihood of a tipping point being reached—that linear continuation of the present into the future is increasingly unlikely—can be foreseen. Foreseeing the direction of change and the likelihood of discontinuities, both sudden and protracted, is thus not beyond our capabilities. While efforts to understand and project long-term global trends cannot provide accurate predictions, for example, of the GDPs of China, India, and the United States in 2030, looking at economic and GDP growth trends, can provide insights into a wide range of possible outcomes. For example, it is a useful to assess the implications if the GDPs of these three countries each grew at currently projected average rates – even if one understands that there are many factors that can and likely will alter their trajectories. The projected growth trends of the three countries suggest that at some point in the next few decades, perhaps between 2015 and 2030, China’s GDP will surpass that of the United States. And by adding consideration of the economic impact of demographic trends (China’s aging and India’s youth bulge), there is a possibility that India will surpass both China and the US, perhaps by 2040 or 2050, to become the world’s largest economy. These potential shifts of economic power from the United States to China then to India would likely prove strategically disruptive on a global scale. Although slowly developing, such disruptive change would likely have an even greater strategic impact than the Arab Spring. The “rise” of China has already proved strategically disruptive, creating a potential China-United States regional rivalry in Asia two decades after Americans fretted about an emerging US conflict with a then-rising Japan challenging American economic supremacy. Despite uncertainty surrounding projections, foreseeing the possibility (some would say high likelihood) that China and then India will replace the United States as the largest global economy has near-term policy implications for the US and Europe. The potential long-term shift in economic clout and concomitant shift in political power and strategic position away from the US and the West and toward the East has implications for near-term policy choices. Policymakers could conclude, for example, that the West should make greater efforts to bring the emerging (or re-emerging) great powers into close consultation on the “rules of the game” and global governance as the West’s influence in shaping institutions and behavior is likely to significantly diminish over the next few decades. The alternative to finding such a near-term accommodation could be increasing mutual suspicions and hostility rather than trust and growing cooperation between rising and established powers—especially between China and the United States—leading to a fragmented, zero-sum world in which major global challenges like climate change and resource scarcities are not addressed and conflict over dwindling resources and markets intensifies and even bleeds into the military realm among the major actors. Neither of these scenarios may play out, of course. Other global trends suggest that sometime in the next several decades, the world could encounter a “hard ceiling” on resources availability and that climate change could throw the global economy into a tailspin, harming China and India even more than the United States. In this case, perhaps India and China would falter economically leading to internal instability and crises of governance, significantly reducing their rates of economic growth and their ability to project power and play a significant international role than might otherwise have been expected. But this scenario has other implications for policymakers, including dangers posed to Western interests from “failure” of China and/or India, which could produce huge strategic shocks to the global system, including a prolonged economic downturn in the West as well as the East. Thus, looking at relatively slowly developing trends can provide foresight for necessary course corrections now to avert catastrophic disruptive change or prepare to be more resilient if foreseeable but unavoidable shocks occur. Policymakers and the public will press for predictions and criticize government officials and intelligence agencies when momentous events “catch us by surprise.” But unfortunately, as both Yogi Berra and Neils Bohr are credited with saying, “prediction is very hard, especially about the future.” One can predict with great accuracy many natural events such as sunrise and the boiling point of water at sea level. We can rely on the infallible predictability of the laws of physics to build airplanes and automobiles and iPhones. And we can calculate with great precision the destruction footprint of a given nuclear weapon. Yet even physical systems like the weather as they become more complex, become increasingly difficult and even inherently impossible to predict with precision. With human behavior, specific predictions are not just hard, but impossible as uncertainty is inherent in the human universe. As futurist Paul Saffo wrote in the Harvard Business Review in 2007, “prediction is possible only in a world in which events are preordained and no amount of actions in the present can influence the future outcome.” One cannot know for certain what actions he or she will take in the future much less the actions of another person, a group of people or a nation state. This obvious point is made to dismiss any idea of trying to “predict” what will occur in the future with accuracy, especially the outcomes of the interplay of many complex factors, including the interaction of human and natural systems. More broadly, the human future is not predetermined but rather depends on human choices at every turning point, cumulatively leading to different alternative outcomes. This uncertainty about the future also means the future is amenable to human choice and leadership. Trends analyses—including foreseeing trends leading to disruptive change—are thus essential to provide individuals, organizations and political leaders with the strategic foresight to take steps mitigate the dangers ahead and seize the opportunities for shaping the human destiny. Peter Schwartz nearly a decade ago characterized the convergence of trends and disruptive change as “inevitable surprises.” He wrote in Inevitable Surprises that “in the coming decades we face many more inevitable surprises: major discontinuities in the economic, political and social spheres of our world, each one changing the ‘rules of the game’ as its played today. If anything, there will be more, no fewer, surprises in the future, and they will all be interconnected. Together, they will lead us into a world, ten to fifteen years hence, that is fundamentally different from the one we know today. Understanding these inevitable surprises in our future is critical for the decisions we have to make today …. We may not be able to prevent catastrophe (although sometimes we can), but we can certainly increase our ability to respond, and our ability to see opportunities that we would otherwise miss.

#### Alt fails – risk-based policymaking inevitable

Danzig 11

Richard Danzig, Center for a New American Security Board Chairman, Secretary of the Navy under President Bill Clinton, October 2011, Driving in the Dark Ten Propositions About Prediction and National Security, http://www.cnas.org/files/documents/publications/CNAS\_Prediction\_Danzig.pdf

The Propensity to Make Predictions – and to Act on the Basis of Predictions – Is Inherently Human

“No one can predict the future” is a common saying, but people quite correctly believe and act otherwise in everyday life. In fact, daily life is built on a foundation of prediction. One expects (predicts) that housing, food and water will be safe and, over the longer term, that saved money will retain value. These predictions are typically validated by everyday experience. As a consequence, people develop expectations about prediction and a taste, even a hunger, for it. If security in everyday life derives from predictive power, it is natural to try to build national security in the same way.

This taste for prediction has deep roots.16 Humans are less physically capable than other species but more adept at reasoning.17 Reasoning is adaptive; it enhances the odds of survival for the species and of survival, power, health and wealth for individuals. Reasoning depends on predictive power. If what was benign yesterday becomes unpredictably dangerous today, it is hard to develop protective strategies, just as if two plus two equals four today and five tomorrow, it is hard to do math. Rational thought depends on prediction and, at the same time, gives birth to prediction. Humans are rational beings and, therefore, make predictions.

The taste for prediction has roots, moreover, in something deeper than rationality. Emotionally, people are uncomfortable with uncertainty and pursue the illusion of control over events beyond their control. Systematic interviews of those who have colostomies, for example, show that people are less depressed if they are informed that their impaired condition will be permanent than if they are told that it is uncertain whether they will be able to return to normal functioning.19 Citing this and other work, Daniel Gilbert concludes that “[h]uman beings find uncertainty more painful than the things they’re uncertain about.”20 An “illusion of control,” to employ a term now recognized in the literature of psychology, mitigates the pain of uncertainty.21 People value random lottery tickets or poker cards distributed to themselves more than they do tickets or cards randomly assigned to others.22 A discomfort with uncertainty and desire for control contribute to an unjustifiable over-reliance on prediction.

2. Requirements for Prediction Will Consistently Exceed the Ability to Predict

The literature on predictive failure is rich and compelling.23 In the most systematic assessment, conducted over 15 years ending in 2003, Philip Tetlock asked 284 established experts24 more than 27,000 questions about future political and economic outcomes (expected electoral results, likelihoods of coups, accession to treaties, proliferation, GDP growth, etc.) and scored their results.25 Collateral exercises scored predictive achievement in the wake of the breakup of the Soviet Union, the transition to democracy in South Africa and other events. There are too many aspects of Tetlock’s richly textured discussion to permit a simple summary, but his own rendering of a central finding will suffice for this discussion: “When we pit experts against minimalist performance benchmarks – dilettantes, dart-throwing chimps, and assorted extrapolation algorithms – we find few signs that expertise translates into greater ability to make either ‘well calibrated’ or ‘discriminating’ forecasts.”26

As described below,27 there are strong reasons for a high likelihood of failure of foresight when DOD attempts to anticipate the requirements for systems over future decades. Recent experience makes this point vividly. Over the past 20 years,28 long-term predictions about the strategic environment and associated security challenges have been wrong, like most multi-year predictions on complex subjects.29 It is simple to list a halfdozen failures:30 American defense planners in 1990 did not anticipate the breakup of the Soviet Union, the rapid rise of China, Japan’s abrupt transition from decades of exceptional economic growth to decades of no growth,31 an attack like that on September 11, 2001 or the United States invasions of (and subsequent decade-long presences in) Afghanistan and Iraq.32

So, in this light, why does the defense community repeatedly over-invest in prediction?

A common conceptual error intensifies the hunger for prediction. History celebrates those who made good predictions. Because Winston Churchill’s fame rests on, among other things, his foresight about German militarism and the accuracy of his demands for preparation for World War II, it appears evident that confident prediction is the road to success. Yet it is an error to focus on numerators (instances of success) without asking about denominators (instances of failure).

33 Accordingly, there is a tendency to ignore Churchill’s failures in many other predictions (his disastrous expectations from military operations in Gallipoli, his underestimation of Gandhi, etc.). There is also a tendency to ignore the great number of other predictors who are not celebrated by history because they failed in analogous circumstances.

Moreover, prediction is subject to refinement and is often a competitive enterprise. As a result, predictive power is like wealth – gaining some of it rarely satisfies the needs of those who receive it. Predictive power intensifies the demand for more predictive power.

Tell a national security advisor that another country is likely to develop a nuclear weapon, and – after all his or her questions have been answered about the basis of the prediction – he or she will want to know when, in what numbers, with what reliability, at what cost, with what ability to deploy them, to mount them on missiles, with what intent as to their use, etc. It is no wonder that U.S. intelligence agencies are consistently regarded as failing.

Whatever their mixtures of strengths and weaknesses, they are always being pushed to go beyond the point of success.

Put another way, the surest prediction about a credible prediction is that it will induce a request for another prediction. This tendency is intensified when, as is commonly the case, prediction is competitive. If you can predict the price of a product but I can predict it faster or more precisely, I gain an economic advantage. If I can better predict the success of troop movements over difficult terrain, then I gain a military advantage. As a result, in competitive situations, my fears of your predictive power will drive me to demand more prediction regardless of my predictive power. Moreover, your recognition of my predictive power will lead you to take steps to impair my predictive ability.34 Carl von Clausewitz saw this very clearly: “The very nature of interaction is bound to make [warfare] unpredictable.”35

These inherent psychological and practical realities will consistently lead to over-prediction. People are doomed repeatedly to drive beyond their headlights.

#### Quality of life is skyrocketing worldwide by all measures

Ridley, visiting professor at Cold Spring Harbor Laboratory, former science editor of *The Economist*, and award-winning science writer, 2010

(Matt, *The Rational Optimist*, pg. 13-15)

If my fictional family is not to your taste, perhaps you prefer statistics. Since 1800, the population of the world has multiplied six times, yet **average life expectancy has more than doubled and real income has risen more than nine times**. Taking a shorter perspective, in 2005, compared with 1955, the average human being on Planet Earth earned nearly three times as much money (corrected for inflation), ate one-third more calories of food, buried one-third as many of her children and could expect to live one-third longer. She was less likely to die as a result of war, murder, childbirth, accidents, tornadoes, flooding, famine, whooping cough, tuberculosis, malaria, diphtheria, typhus, typhoid, measles, smallpox, scurvy or polio. She was less likely, at any given age, to get cancer, heart disease or stroke. She was more likely to be literate and to have finished school. She was more likely to own a telephone, a flush toilet, a refrigerator and a bicycle. All this during a half-century when the world population has more than doubled, so that far from being rationed by population pressure, the goods and services available to the people of the world have expanded. It is, by any standard, an astonishing human achievement. Averages conceal a lot. **But even if you break down the world into bits**, **it is hard to find any region that was worse off in 2005 than it was in 1955**. Over that half-century, real income per head ended a little lower in only six countries (Afghanistan, Haiti, Congo, Liberia, Sierra Leone and Somalia), life expectancy in three (Russia, Swaziland and Zimbabwe), and infant survival in none. In the rest they have rocketed upward. Africa’s rate of improvement has been distressingly slow and patchy compared with the rest of the world, and many southern African countries saw life expectancy plunge in the 1990s as the AIDS epidemic took hold (before recovering in recent years). There were also moments in the half-century when you could have caught countries in episodes of dreadful deterioration of living standards or life chances – China in the 1960s, Cambodia in the 1970s, Ethiopia in the 1980s, Rwanda in the 1990s, Congo in the 2000s, North Korea throughout. Argentina had a disappointingly stagnant twentieth century. But overall, after fifty years, **the outcome for the world is** remarkably, astonishingly, **dramatically positive**. The average South Korean lives twenty-six more years and earns fifteen times as much income each year as he did in 1955 (and earns fifteen times as much as his North Korean counter part). The average Mexican lives longer now than the average Briton did in 1955. The average Botswanan earns more than the average Finn did in 1955. **Infant mortality is lower today in Nepal than it was in Italy in 1951**. The proportion of Vietnamese living on less than $2 a day has dropped from 90 per cent to 30 per cent in twenty years. The rich have got richer, but the poor have done even better. **The poor in the developing world grew their consumption twice as fast as the world as a whole between 1980 and 2000**. The Chinese are ten times as rich, one-third as fecund and twenty-eight years longer-lived than they were fifty years ago. Even Nigerians are twice as rich, 25 per cent less fecund and nine years longer-lived than they were in 1955. **Despite a doubling of the world population**, even **the raw number of people living in absolute poverty** (defined as less than a 1985 dollar a day) **has fallen since the 1950s**. The percentage living in such absolute poverty has dropped by more than half – to less than 18 per cent. That number is, of course, still all too horribly high, but the trend is hardly a cause for despair: at the current rate of decline, it would hit zero around 2035 – though it probably won’t. The United Nations estimates that poverty was reduced more in the last fifty years than in the previous 500.

# 1AR

## 1ar – we meet

#### EPA agrees with us

Brownell et al 12

F. William Brownell, Henry V. Nickel, Norman W. Fichthorn, Allison D. Wood, Hunton & Williams LLP, 9/6/12, LASBRISASENERGYCENTER,LLC,etal., Petitioners, v. UNITED STATES ENVIRONMENTAL ) PROTECTION AGENCY and LISA PEREZ JACKSON, Administrator, United States Environmental Protection Agency, Respondents, insideEPA database

Specifically, the April 13 Notice explains that the proposed CO2 NSPS establishes an emission limit – 1,000 pounds of CO2 per gross output, measured in pounds per Megawatt-hour (“lb/MWh”) on a 12-operating-month annual average basis – that is based on a level of emission control achievable only by certain kinds of combustion turbines that burn natural gas, i.e., so-called natural gas combined cycle (“NGCC”)units.2 Coal-fired EGUs are subject either to(1)this1,000lb/MWh limit, which they cannot achieve using any demonstrated “system of emission reduction” that is available to such units; or (2) a 30-year-averaging compliance option for coal- fired EGUs that are “designed to allow installation and operation of a carbon capture and storage (CCS) system.” Proposed 40 C.F.R. § 60.5520(b), 77 Fed. Reg. at 22,436.

As to the first, EPA concedes that the 1,000 lb/MWh CO2 limit it has published cannot possibly be met by any EGUs that burn coal or other solid fossil fuels.3 As to the second, in publishing a “30-year averaging option” as a putative alternative to an unachievable standard, EPA did not even suggest that CCS is an “adequately demonstrated” control system within the meaning of 42 U.S.C. § 7411(a)(1), or that this option was adopted following evaluation of the other NSPS- standard-setting criteria that must be considered in selecting a “best” system from among “demonstrated” systems.4 Cf., e.g., Essex Chem. Corp. v. Ruckelshaus, 486 F.2d 427, 440-41 (D.C. Cir. 1973) (remanding EPA’s selection of lime slurry scrubbing as the “best system” of control where EPA had given insufficient consideration to the “counter productive environmental effects of the system”).

In sum, EPA in the April 13 Notice published a CO2 emission standard that applies to, but cannot be met by, any new coal-fired EGUs with any “adequately demonstrated” system of emission reduction available to such EGUs. As UARG explains in its Motion for Declaratory Relief, what EPA has published cannot be, as a matter of law, an NSPS for coal-fired EGUs, and cannot trigger a statutory obligation on EPA’s part – or provide any legal basis for EPA – to promulgate a final NSPS that would apply to CO2 emissions from coal-fired EGUs. UARG explains here why the April 13 Notice constitutes “other . . . nationally applicable . . . final action” over which this Court has subject-matter jurisdiction pursuant to 42 U.S.C. § 7607(b)(1), and why UARG’s challenge to that action is ripe for review.

#### Evaluating hypothetical possibility of compliance is unreasonable

William L. Wehrum, William L. Wehrum, Hunton & Williams LLP, 8/3/12, WHITE STALLION ENERGY CENTER, LLC, et al., Petitioners, v. ENVIRONMENTAL PROTECTION AGENCY, Respondent, BRIEF OF INDUSTRY AMICI CURIAE IN SUPPORT OF PETITIONERS, http://www.nam.org/~/media/2AA72BFA88F74E1B881D5BB46465B765/White\_Stallion\_Energy\_Center\_v\_EPA\_brief\_08032012.pdf

In other words, EPA’s floor methodology is based on what it believes is hypothetically “achievable” by some non-existent source, not what has been “achieved in practice” by the best actual source. And it does so without considering the beyond-the-floor factors as required under Section 112(d)(2). As EPA has explained elsewhere, such an approach is inconsistent with Section 112’s requirements: “[w]hen determining the existing source level of control, identification of a similar emission unit does not mean that the controls will automatically be applied to the MACT emission unit. Costs, non-air quality health and environmental impacts, and energy requirements should be used to assess the technologies ability to meet MACT criteria.” EPA 112(j) Guidelines at 3-19 to 3- 20 (emphasis added); see also 70 Fed. Reg. 59,402, 59,443 (Oct. 12, 2005) (rejecting a “straight emissions methodology” as creating “arbitrary” and “impermissible” results, including “a beyond the floor standard without consideration of the beyond the floor factors”).

C. MACT standards for new sources must be “achieved in practice,” not theoretically achievable by some nonexistent source.

Even if the statute is somehow deemed ambiguous, EPA’s pollutant-by- pollutant approach to setting the floor is unreasonable. “[A]chieved in practice” means more than the theoretical possibility of compliance from an imagined source:

It is reasonable to suppose that if an emissions standard is as stringent as “the emissions control that is achieved in practice” by a particular unit, then that particular unit will not violate the standard. This only results if “achieved in practice” is interpreted to mean “achieved under the worst foreseeable circumstances.”

Sierra Club v. EPA, 167 F.3d 658, 665 (D.C. Cir. 1999) (emphasis added). Instead of identifying the “best controlled similar source,” EPA established separate floors using emissions data from different sources representing the lowest emissions test result for each source, creating a set of standards reflecting the performance of a hypothetical source rather than the actual best controlled similar source.6 Id. (noting “use of the singular in the statutory language suggests” that EPA should consider the “unit with the best observed performance”). Yet, as Petitioners have demonstrated, EPA failed to demonstrate that even the multiple best controlled similar sources that it identified in setting the Utility MACT standards “will not violate” the standards that are based on the performance of those very units.

The need to identify a single source that has achieved the best control “in practice” is particularly important with respect to ensuring that the best controlled similar source “will not violate the standard” because controls installed to reduce one HAP may have antagonistic effects on other HAPs. EPA recognized this fact but ignored it in adopting its pollutant-by-pollutant approach to establishing MACT floors:

The EPA notes ... that if optimized performance for different HAP is not technologically possible due to mutually inconsistent control technologies (for example, if metals performance decreased if organics reduction is optimized), then this would have to be taken into account by the EPA in establishing a floor (or floors). The Senate Report indicates that if certain types of otherwise needed controls are mutually exclusive, the EPA is to optimize the part of the standard providing the most environmental protection. S. Rep. No. 228, 101st Cong. 1st sess. 168 (although, as noted, the bill accompanying this Report contained no floor provisions).

EPA-HQ-OAR-2009-0234-20126 at 433 (emphases added) (Ex. 6); see also id. at 447 (“The EPA is aware that the performance of one control technology can affect the performance of other in-stream control technologies.”).

It is unreasonable to interpret the CAA to allow for standards that purport to have been “achieved in practice,” but that will not be “achievable” by actual affected sources, much less the “best controlled similar source” used to set the standard. MACT floors are based on what has been “achieved in practice,” and “beyond-the-floor” standards are based on what is “achievable” considering cost and other factors. Compare 42 U.S.C. §7412(d)(2) and §7412(d)(3). The logic of the MACT floor is self-evident. The statute reasonably presumes new sources can replicate any emission level that has already been achieved by an existing source. Section 112 “thus embodies an assumption that standards based on achievability will be more stringent than ones based merely on past achievement.” Sierra Club v. EPA, 479 F.3d 875, 884 (D.C. Cir. 2007) (emphasis added) (Williams, J., concurring).

EPA’s current pollutant-by-pollutant methodology for establishing MACT floors for new sources results in floors that themselves are not achievable (i.e., the MACT floors are more stringent than “beyond-the-floor” standards could be). Hence, EPA has adopted an interpretation that is “demonstrably at odds with the intentions of its drafters.” Id. at 885. Judge Williams recognized that EPA must avoid such a result and “keep[] the relation between ‘achieved’ and ‘achievable’ in accord with common sense and the reasonable meaning of the statute.” Id. In adopting its current pollutant-by-pollutant approach to setting floors, EPA failed to adhere to this directive.

## 1ar – counter-interp

#### Feasibility determines energy production, so barriers are restrictions

Phil et al 12

Erik Phil and Filip Johnsson, Division of Energy Technology, Chalmers University of Technolog, and Duncan Kushnir and Bjorn Sanden, Division of Environmental Systems Analysis, Chalmers University of Technology, August 2012,Material constraints for concentrating solar thermal powerEnergy Volume 44, Issue 1, August 2012, Pages 944–954

The available solar flux on land is several thousand times higher than today's anthropogenic primary energy conversion and is thereby the dominant potential source for renewable energy. The global solar market has been rapidly growing for the past decade, but is still dwarfed when compared to conventional fossil fuel power. So far, the main barrier to large-scale deployment of solar power has been higher costs of electricity, because of relatively small volumes and less historical investments in technology development than presently dominant power generation technologies. Through development and continued strong growth, as solar technologies progress down the learning-curve, the cost per kWh of solar electricity is projected to reach parity with peaking power in main markets by about 2020–2030 [1], [2], [3] and [4].

So far, photovoltaic (PV) technologies have the largest share of the solar power market, but there is at present a relatively steady share of concentrating solar thermal power (CSP, also sometimes referred to as Solar Thermal Power, STP). CSP has undergone expansion from about 400 MW installed capacity in the early 2000s, to about 1.3 GW in 2011, with another 2.3 GW under construction and 32 GW in planning. The technology is today in commercial scale deployment in Spain, USA, Australia, Egypt and India [5], [6] and [7].

CSP plants use reflective surfaces to concentrate sunlight, providing heat for a thermodynamic cycle, such as a steam turbine. The physical principle is thus very different from photovoltaic panels, which use the photons in sunlight to excite electrons and create currents in solid state matter. These differences mean that CSP will differ significantly from PV regarding properties such as environmental impact and material constraints.

With projected strong growth in view, it is of interest to identify and quantify barriers to large-scale solar power deployment, other than cost as mentioned above. One such barrier is restrictions in either the reserves (extractable resources at a given cost) or annual supply of materials needed for solar power conversion devices. Such restrictions can imply increased raw material costs as the technologies grow, or even set absolute limits to how much that can be built. The recent study on CSP by the EASAC [2] has pinpointed a need to investigate the limits and potential bottlenecks and manufacturing constraints for CSP production.

#### Context is key

Haneman 59 J.A.D. is a justice of the Superior Court of New Jersey, Appellate Division. “Russell S. Bertrand et al. v. Donald T. Jones et al.,” 58 NJ Super. 273; 156 A.2d 161; 1959 N.J. Super, Lexis

HN4 In ascertaining the meaning of the word "restrictions" as here employed, it must be considered in context with the entire clause in which it appears. It is to be noted that the exception concerns restrictions "which have been complied with." Plainly, this connotes a representation of compliance by the vendor with any restrictions upon the permitted uses of the subject property. The conclusion that "restrictions" refer solely to a limitation of the manner in which the vendor may [\*\*\*14] use his own lands is strengthened by the further provision found in said clause that the conveyance is "subject to the effect, [\*\*167] if any, of municipal zoning laws." Municipal zoning laws affect the use of property.¶ HN5 A familiar maxim to aid in the construction of contracts is noscitur a sociis. Simply stated, this means that a word is known from its associates. Words of general and specific import take color from each other when associated together, and thus the word of general significance is modified by its associates of restricted sense. 3 Corbin on Contracts, § 552, p. 110; cf. Ford Motor Co. v. New Jersey Department of Labor and Industry, 5 N.J. 494 (1950). The [\*284] word "restrictions," therefore, should be construed as being used in the same limited fashion as "zoning."

#### Only contextual definition

Paul Crampton, Partner at Osler, Hoskin & Harcourt LLP, J.D., June 2009, MAJOR CHANGES TO THE COMPETITION ACT (CANADA) AND THE COMPETITION BUREAU'S ENFORCEMENT POLICIES, 8-5 Antitrust Src. 5

OUTPUT RESTRICTIONS. Paragraph 45(1)(c) applies to all agreements "to fix, maintain, control, prevent, lessen or eliminate the production or supply of the product." In the Bureau's view, in addition to garden-variety output agreements, this language captures agreements that reduce the quantity of products supplied to specific customers or groups of customers as well as agreements to permanently or temporarily close manufacturing facilities. n31

The Draft CC Guidelines are not particularly helpful regarding agreements that typically would not be considered to constitute hard-core cartel conduct but which could raise issues under this provision, such as standard-setting agreements and JV agreements that place restrictions on the production or supply of products to be produced by the JV.

#### Does not require wholesale prohibition—limiting production is a restriction

Texas Supreme Court 10,

CAUSE NO. 08-01-18,007-CV-A, Final Judgment, http://www.supreme.courts.state.tx.us/ebriefs/12/12046401.pdf

"Restriction" is defined and commonly used to mean "[a] limitation (esp. in a deed) placed on the use or enjoyment of property." BLACK'S LAW DICTIONARY 1054 (7th ed. 2000).

## coal k

#### Cheap electricity is key to electrification – solves their impact

Dr. Frank Clemente, Professor Emeritus at Penn State University where he specializes in research on the socioeconomic aspects of energy policy, 9/28/12, Coal as the foundation of social development, http://energy-facts.org/LinkClick.aspx?fileticket=p0nwnMFNCkI%3d&tabid=100

Coal as the foundation of social development

Electricity ushered in a transformation of American society throughout the last century. Suddenly, the backbreaking work that consumed dawn to dusk for most Americans was alleviated by electric motors, dynamos and generators. Electric household appliances made it possible to heat homes, cook food, store perishable items and wash clothes without the drudgery and fear of disease that had haunted previous generations.\* This rise in the quality of life in the U.S. over the past century has been the envy of the world. Society after society seeks to emulate the progress the U.S. has made in health, education, productivity, environmental improvement, science and technology. The catalyst of this leap forward has been ever increasing access to reliable and affordable electricity. The rapid expansion of the population was closely paralleled by the production of electricity the average person could afford to buy. In 1920 electricity consumption per capita was less than 400 kWh. In 2010, consumption exceeded 13,500 kWh per person --and there were 200 million more people.

Through decade after decade, electric power in the United States has had one major common denominator -- coal. Coal has been the continuing cornerstone of our electric power supply. The first central power plant – built in 1892 by Thomas Edison on Pearl Street in Manhattan—was fueled by coal. Since that point, coal’s steady contributions have made the U.S. power system one of the most affordable and reliable in the world. Further, clean coal technology works: regulated emissions from coal have declined 70% since 1970. And the sheer scale of coal's contribution to our electric grid is a staggering confirmation of its foundational role.

Growing access to electricity means more food, cleaner water, new medicines, safer work settings and increased control of the environment through heating and eventually air conditioning—all hallmarks of industrialization and modernization made possible by electric power--over half of which came from coal.

What America Looked Like Before Electricity

Expanded availability of electricity led to a disproportionate increase in productivity and economic growth. New products and novel ways of creating those products drove this growth. As the century unfolded, the widening use of electricity via the moving assembly line combined to yield a continuing rise in the productivity of labor and capital. This general process continues today as electricity, much of it produced by coal, powers computerized technology in virtually every dimension of life.

Another continuing source of socioeconomic progress arises from the expanded use of commercial energy by households. Consider the shift from kerosene to electric lighting as an example. As the price of light declines, more illumination services are consumed, which leads to a direct increase in economic welfare. Further, with inexpensive illumination family members can devote time at night to improving literacy and education capacity. Households can divert hours once spent gathering firewood to improving their role in the market economy, which generates income for the family and labor services for society, thereby enhancing economic productivity such as GDP. Once again, this process continues today as electricity powers everything from the “Cloud” to personal computers.

Beneficial electrification has a dramatic impact on survival itself. Brenner’s work in the Journal of Epidemiology (2005) demonstrated the link between low energy costs, economic growth and declining mortality. In the U.S. life expectancy saw a significant surge as electricity, predominately powered by coal, steadily reached the population.

Better sanitation through electricity had a markedly positive impact on waterborne diseases. As Cutler and Miller (2005) noted in Demography, cleaner water was responsible for dramatic declines in infant mortality in the United States in the first 40 years of the twentieth century. In fact, at least 20% of the increase in life expectancy derives from reductions in infant mortality.

Affordable electricity through coal

The U.S. has benefited greatly from adequate power at a reasonable cost. U.S. manufacturers have been more internationally competitive. Electricity enhances productivity and product quality in all manufacturing processes—steelmaking, aluminum, machining. The price of electricity is critical because higher prices discourage usage. In this context, the stability of coal prices versus the volatility of natural gas prices over the past decade has buffered tens of millions of consumers from even higher electric rates. In future years, the price stability of coal will be even more important. Gas prices are linked to oil prices over time and virtually all forecasts see staggering global demand pulling oil prices higher as world oil production strains to keep up. Indeed, the EIA projects crude oil prices will be $230 per barrel by 2035. In the new peak oil world, gas prices will be a fast follower.

## 1ar – no scale up

#### May be true FOR PEOPLE – but empirical studies prove you can’t scale it up to explain IR or revolutionary politics

Epstein, senior lecturer in government and IR – University of Sydney, ‘10

(Charlotte, “Who speaks? Discourse, the subject and the study of identity in international politics,” European Journal of International Relations XX(X) 1–24)

To be clear, this move is not intended to deny the intimate links between discourse and subjectivity. The earlier foray into Lacanian thought served precisely to underline the centrality of discourse to both the making and subsequent analysis of the subject. But by the same token it also drew out what is required to wield the discourse approach effec­tively in IR. Indeed Lacan’s analysis emphasizes the sheer complexity of the dynamics of a highly individual phenomenon (identity), and consequently the difficulties in taking this level as the starting point for analysing all other levels at which identity is politically at play.13 As the discipline that positions itself at the highest level of analysis (the supra­national), IR cannot maintain its focus at the level where some of the finer debates around subjectivity take place (see for example, Butler, 1997). The issue here is one of discipli­nary specificity, or, in other words, equipping IR for what it wants to do; and the solu­tion proposed is one of suspension or bracketing.

To restate this important point differently, at the individual level, subjectivities and subject-positions remain coextensive. The distinction between subject-positions and subjectivities becomes operative once the analysis shifts beyond the individual level. This distinction thus offers a theoretically cogent way of studying identity while bracket­ing some of its more unwieldy dimensions that may, moreover, not be pertinent at the levels at which IR casts its focus. It renders the discourse approach operative for IR, because it makes it possible to study *state* identities, without having to presume that states have feelings, or indeed enter into questions of how much exactly are they like people, or what kind of selves do they possess.

What the discourse approach analyses, then, is the ways in which actors — crucially, whether individuals or states — define themselves by stepping into a particular subject-position carved out by a discourse. In taking on the ‘I/we’ of that discourse, actors’ identities are produced in a very specific way. In doing so, they are establishing them­selves as the subjects of particular discourses, such as the anti-whaling discourse, and thereby marking themselves as ‘anti-whalers’. How, then, do discursive subject-positions differ from Wendt’s (1999: 227–229) role identities, where the actor is similarly seen as stepping into institutionalized roles (such as professor and student)? The crucial differ­ence is that the concept of subject-position does not harbour any assumption about any primordial self supporting these roles. Importantly, this is not to say that the self does not exist — that the professor or student have no selves — but simply that the concept is not relevant to the analysis of the discursive construction of identity, especially when taken to the interstate level.