

# **A Climate Plan for the New Administration**

**by Justinian**

Understandably, in the absence of leadership from the present administration, a great deal of attention has focused on Congressional proposals to address climate change. Yet statutes already on the books provide much legal authority for swift action on this most pressing environmental problem. In this essay, we propose a wide and effective array of actions that the new administration could take – without new legislation – to begin to tackle climate change. We also offer several recommendations for legislative action that we believe President Obama should propose to Congress upon taking office.

Our list of actions that do not require changes in existing statutes is not comprehensive: there are many additional opportunities for action under current law. Nevertheless, even in this abbreviated list, one can see three general ideas. First, swift and significant action can be taken now, under laws that already exist. While Congress inches toward a federal law on climate change, the new administration can be showing the way. Second, pollution control is not the only way to begin to take on climate change. Protecting carbon sinks and pursuing regulatory strategies beyond control of pollution at the source must also be part of the picture. Third, attention must turn to agencies beyond the EPA and to statutes beyond the Clean Air Act. While these are vital pieces of any sensible strategy on climate, other agencies and statutes are also crucial.

The latter point has implications beyond the specific recommendations we make here. Historically, presidents have been quite narrow in their vision of what the “environmental” agencies are; EPA often stands alone in this category, with the Department of the Interior sometimes added into the mix, depending on the administration. Given the multi-faceted problem of climate change and also the multi-faceted nature of the solutions required for it, President Obama should take a broader view of agency responsibilities. Beyond EPA and Interior, President Obama should view such seemingly disparate government entities as the Department of Energy, the Forest Service, the Department of Defense, and AmeriCorps as vital components of an all-out effort to address climate change. President Obama’s appointments to key roles in these institutions should reflect this substantive reorientation.

We hope that we say enough here at least to put the lie to the most histrionic characterizations of what application of the existing Clean Air Act and other statutes to climate change would mean for the economy, and for technological innovation. As we explain, existing law provides numerous avenues for sensible and effective first steps toward addressing climate change. We continue to hope, as many others do, that Congress will step in and provide clarity and direction on this issue. To those who believe, however, that Congressional action is necessary in order to provide an expeditious response to climate change, we would point out that the Boxer-Lieberman-Warner bill debated in the Senate last summer contained no fewer than sixty mandates for EPA rulemaking, at least twenty-six of which needed to be completed before the bill’s

cap and trade program would even get off the ground. In debating the relative merits of new versus existing legislation on climate change, therefore, one must be realistic, bearing in mind the actual – rather than theoretical – comparative efficiencies of each approach.

We are mindful of the fact that we are making these recommendations against the backdrop of the worst economic crisis since the Great Depression. Perhaps counter-intuitively for some, we believe that the economic crisis strengthens rather than undermines the case for the actions we propose here. First, pragmatically, the current economic situation probably makes it less likely that Congress will act promptly on comprehensive climate legislation. Thus existing law becomes all the more important as a platform for beginning to address climate change now. Second, more important, we believe it is time to stop treating the economy and the environment as an either-or proposition, according to which it is possible to protect one of them but not both. The actions we propose here – particularly action to create a more level playing field for renewable energy sources and efficient technologies – are good ideas from *both* an environmental and economic perspective. Renewable energy sources and efficient technologies create many more jobs than traditional energy sources. At a time when the economy and the environment are in crisis, we should be looking for ways to help both at the same time.

## **1. AGGRESSIVELY PURSUE INTERNATIONAL AGREEMENTS TO ADDRESS GLOBAL WARMING**

### **RECOMMENDATION.**

Perhaps the most important action President Obama can take to curb global warming is to reverse the U.S. position on an international agreement to reduce emissions. The President should announce that the U.S., the world's second largest emitter of greenhouse gases (with over twenty percent of the world's total emissions), is ready to make an unwavering commitment to reduce its emissions.

### **DISCUSSION.**

The Kyoto Protocol, to which the U.S. is not a signatory, is an international agreement that establishes binding emissions reduction targets for thirty-seven industrialized countries and the European Community. The targets, if achieved, would result in a five percent reduction in emissions from 1990 levels from 2008-2012.<sup>1</sup> To date, 182 countries have ratified the agreement. After the Senate in 1998 signaled that it would not ratify the Protocol, President Clinton did not present it to the Senate for its approval. In the Bush Administration, the U.S. withdrew from the Protocol entirely.

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<sup>1</sup> United Nations Framework Convention on Climate Change, *open for signature* Mar. 16, 1998- Mar. 15, 1999, [http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php).

Last year, the United Nations Framework Convention on Climate Change (UNFCCC) began talks on an agreement to replace the Kyoto Protocol when it expires at the end of 2012. Participating countries have set a December 2009 deadline to have a new agreement in place, allowing two years for countries to ratify the treaty. The first meeting took place in Bali, Indonesia in December 2007. The two-week negotiations produced a “roadmap” for future discussions. The roadmap articulated the key issues to be addressed in a series of negotiations over the next year: how to adapt to the negative effects of climate change, such as droughts and floods; how to reduce greenhouse gas emissions; how to deploy climate-friendly technology; and how to finance adaptation and mitigation measures. Parties also agreed on immediate action such as addressing deforestation in developing countries and increasing funding for green technology. In August of this year, over 150 countries met in Accra, Ghana to resume work towards a treaty. The meeting is expected to result in draft treaty language to be voted on at the next meeting in Poznan, Poland in December 2008.<sup>2</sup> This latest round of talks is scheduled to culminate with a binding agreement at Copenhagen in December 2009.

While the United States refused to join the global effort to curb emissions, China and India have also rejected mandatory greenhouse gas reductions – although China has taken significant steps to reduce its emissions in the meantime. President Bush demanded that China and India commit to major reductions under an international agreement before the United States would do so. It is easy to understand how this global game of “chicken” would harden China and India’s opposition to joining the Kyoto agreement.

President Obama must wear the mantle of leadership on global warming that the Bush Administration refused. He should take the initiative in the UNFCCC negotiations and commit the United States to meeting mandatory reduction targets under a new international agreement. If the United States takes a leadership role in seeking a renewed and improved international agreement, China, India, and other developing economies can almost certainly be counted upon to take a very different stance. Besides being the right thing to do, new international treaty obligations will have many benefits to the United States economy. Low carbon emissions are obtained by reducing the use of fossil fuels to make energy. Thus new international restrictions on emissions of greenhouse gases will stimulate a new industrial revolution in renewable energy technologies and energy efficiency will contribute to energy independence, provide hundreds of thousands of new jobs in the United States, improve our national security, and open new markets for American low-carbon technology. Low-carbon technology, which will be in demand around the world under a new climate treaty, can become a major export for the United States.

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<sup>2</sup> Associated Press, *Climate Negotiators Convene This Week in Ghana*, INTERNATIONAL HERALD TRIBUNE, August 20, 2008, at <http://www.iht.com/articles/ap/2008/08/20/africa/AF-Climate-Conference.php>.

## **2. REORIENT AND REORGANIZE THE OFFICE OF THE PRESIDENT TO RAISE THE PRIORITY OF GLOBAL WARMING**

### **RECOMMENDATION.**

To address global warming domestically, President Obama should reorient and reorganize the Office of the President by elevating the role of the Council on Environmental Quality (CEQ) and by eliminating or at least downplaying the role of the Office of Information and Regulatory Affairs (OIRA) in passing judgment on regulatory policies.

### **DISCUSSION.**

First, the President should elevate the CEQ to its intended role as the President's chief environmental advisor by appointing new members who are widely respected experts on the interrelationship between global warming and human industrial activities, especially energy production and consumption. The strengthened CEQ should be the President's chief advisor on environmental and energy policy, just as the Council of Economic Advisors is on economic policy. CEQ should also have the job of assuring that all government agencies adopt and carry out the President's policies to reduce global warming emissions. To give CEQ the needed clout with the agencies, the President must make it clear that CEQ speaks for the President on global warming.

Second, the President should reorganize OIRA to facilitate, rather than impede, regulations needed to address global warming. He should begin by repealing Executive Order 12866, which gives OIRA authority to review and reject proposed regulations. The OIRA staff should be confined to the statutory roles given to it, such as overseeing the Paperwork Reduction Act.

For several decades, OIRA has been perhaps the most powerful agency in the Executive Branch standing in the way of needed environmental regulation. In the last eight years, the White House, working through OIRA, delayed, relaxed, or rejected many regulatory proposals. Most often OIRA did so for reasons having nothing to do with promoting economically efficient regulations (its ostensible purpose). Indeed, perusal of OIRA's comments on agency proposals reveals almost no engagement with economic issues. It reveals, instead, persistent efforts to water down scientific conclusions about environmental harm and a stubborn insistence that government regulation cannot be effective. These twin attitudes are starkly evident in OIRA's comments on EPA's Advance Notice of Proposed Rulemaking (ANPR) regarding the regulation of greenhouse gases under the Clean Air Act.<sup>3</sup> OIRA sought to soften EPA's proposed language

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<sup>3</sup> OIRA's comments on the pre-publication draft of the ANPR are worth a read. They are available at [regulation.gov](http://regulation.gov), in the electronic docket for the ANPR, docket number EPA-HQ-OAR-2008-0318. OIRA's comments begin at about the 100<sup>th</sup> document in the electronic docket. For further arresting reading (including expressions of skepticism about historical temperature records and speculation that the existence

regarding the harmful consequences of climate change. It also tried to keep from public view EPA's conclusions about the technologies available for controlling greenhouse gases and the likely effectiveness of regulatory strategies in achieving this control. Economists at OIRA are not suited to making scientific determinations and ought not be charged with making regulation look bad. The backdrop of all of our proposals therefore must be a more constructive relationship between the agencies and the White House, and a renewed respect for agency expertise and government action.

Congress has never authorized OIRA to perform comprehensive regulatory oversight. OIRA's statutory authority comes chiefly from the Paperwork Reduction Act. The principal requirement of the Paperwork Reduction Act is that federal agencies get a control number from OIRA before they request information from the public. OIRA's primary role under the Act is to "serve as principal advisor to the Director [of OMB] on Federal information resources management policy." 44 U.S.C. § 3503(b). Congress has given OIRA mainly advisory or planning roles in the areas of government information and information technology. (See e.g. 44 U.S.C. § 3603(b)(3) (including the administrator of OIRA as a member of the Chief Information Officers Council); 31 U.S.C. § 1104 (charging the administrator of OIRA with promulgating regulations with respect to the way executive agencies gather, analyze, publish, and disseminate statistical information); 40 U.S.C. § 11302(k) (requiring OIRA to review federal policy regarding acquisition of information technology). In 1996, Congress gave OIRA the authority to determine what kinds of regulatory actions constitute "major rules" which are then subject to certain other requirements. 5 U.S.C. § 804(2). But Congress retained the authority to review those "major rules." The Unfunded Mandates Reform Act of 1995 (UMRA) gave OMB and OIRA authority to certify whether an agency has complied with UMRA's requirements. It does not give OIRA the authority to revise, or reject, agency rules that do not comply with UMRA. 2 U.S.C. §§ 658-658(g), 1501 et. seq.

OIRA's regulatory review powers have instead been expanded by the actions of Presidents, beginning of course with President Reagan's Executive Order 12291 in 1981. In 1993, President Clinton replaced Executive Order 12291 with Executive Order 12866. The latter order labeled OIRA as the "repository of expertise concerning regulatory issues" and required that all federal agencies submit a unified agenda, including a regulatory plan, to OIRA. The order also requires agencies to submit to OIRA the full text and justifications for every proposed and final significant regulatory action. OIRA is tasked with reviewing the rules and returning to the submitting agency any rule that is inconsistent with applicable law, the President's priorities, the principles listed in the executive order, or any policies or actions of another agency.

Perhaps most important and most controversial is OIRA's charge to evaluate regulations using formal cost-benefit analysis. This analytical technique requires the quantification and monetization (that is, the translation into dollars) of the consequences of regulatory action, even where those consequences – such as human lives saved and human illnesses averted – may not readily be converted into precise numbers, much less

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of "large and voluminous mammals" during pre-historic times casts doubt on estimates of past methane levels), check out USDA's comments, document number 103 in the electronic docket.

dollars. The technique also requires the discounting of future costs and benefits of regulation. Discounting is a somewhat arcane procedure, but, simply stated, it is compound interest in reverse; just as compound interest can magically turn a small amount of money into a large amount, discounting can magically turn enormous future benefits into a trivial sum.

If President Obama is to commence a government-wide effort to address global warming, it will be necessary to reorganize OMB to implement, rather than block, the President's priorities in this area. OIRA, mired in the old paradigm of blocking environmental and other regulatory initiatives, will, if allowed, raise narrow cost-benefit objections to the regulations needed to implement the President's initiatives. Indeed, with respect to climate change, as we have noted, OIRA has even shown an eagerness to edit agencies' statements of the science on climate change and the actions possible under existing law – without any reference to cost-benefit imperatives. In light of the seriousness of the environmental challenges in the 21<sup>st</sup> Century, we urge that President Obama revoke the regulatory review powers granted to OIRA by Executive Order 12866 and charge CEQ with assuring that all federal departments and agencies give priority to global warming.

A less dramatic alternative to completely repealing Executive Order 12866 would be to rework the Order and the guidelines agencies must follow in complying with it, with climate change specifically in mind. President Obama should take the following actions in this context: 1) make clear that OIRA should not second-guess the scientific judgments of the expert agencies, such as EPA; 2) make clear that OIRA should not second-guess the legal judgments of the agencies; 3) order a lowering (or elimination) of the discount rate used to evaluate regulatory action on climate change, as the long temporal horizon of climate change gives discounting the power to make any action on this problem appear nonsensical; 4) order the agencies to consider the global as well as domestic effects of climate change in conducting cost-benefit analyses; 5) order the agencies to give equal weight to – and, in cost-benefit analyses, give an equal monetary value to – human lives in other countries as they do to lives in this country; and 6) order the agencies, both in choosing a discount rate and in valuing the consequences of regulation, to take adequate account of the possibility of catastrophic climate change. If OIRA retains significant authority to evaluate rules, President Obama should also shift OIRA's regulatory workload from personnel who have, for many years, evinced a marked anti-regulatory attitude in their approach to environmental initiatives, to personnel who do not bring this bias to their work.

Giving OIRA veto power over regulatory policies has always been a bad idea, but it is especially a bad idea when it comes to climate change. Quantification, monetization, and discounting – the very analytical techniques that set cost-benefit analysis apart from other ways of making important decisions – are particularly unhelpful in understanding scientifically complex, morally fraught, temporally distant, and potentially catastrophic events. The case against cost-benefit is nowhere stronger than it is in the context of climate change. Thus, to liberate the executive agencies to deal with this problem, President Obama should either move all authority over environmental regulations to the

CEQ, removing jurisdiction from OIRA entirely by repealing Executive Order 12866 or, at a minimum, severely cabin OIRA's authority and replace staff with people who will not meddle with agencies' climate-related efforts.

### **3. FORMALLY FIND THAT GREENHOUSE GASES ENDANGER PUBLIC HEALTH AND WELFARE**

#### **RECOMMENDATION.**

The Environmental Protection Agency (EPA) should make a formal finding under the Clean Air Act that greenhouse gases endanger both public health and welfare. EPA should include in this finding the global as well as domestic, and future as well as current, effects of greenhouse gases. EPA should make this finding as to specific greenhouse gases and not to greenhouse gases as a group, as it has suggested it might be inclined to do.

#### **DISCUSSION.**

Most regulation under the Clean Air Act is predicated on a finding by the EPA administrator that the pollution to be regulated may reasonably be anticipated to endanger public health and welfare within the meaning of the Clean Air Act. With respect to greenhouse gases, EPA has already done much of the work to prepare this finding. The Advance Notice of Proposed Rulemaking (ANPR) that EPA issued in July of this year contained the scientific evidence necessary to back up such a finding and laid out the legal issues that remain to be considered in making the finding.

As EPA observes in the ANPR, many provisions of the Clean Air Act are triggered by an endangerment finding, but the details of the finding differ from provision to provision. Each, however, has two common attributes. First, each turns on a determination that the relevant "air pollution may reasonably be anticipated to endanger public health or welfare." Second, each requires a separate finding that air pollutants from the source category to be regulated – such as motor vehicles or fuels – contribute to some specified degree to the air pollution in question.

Thus, a general finding that a particular kind of air pollution may reasonably be anticipated to endanger public health or welfare should suffice for the first part of the endangerment determination for all categories of regulated sources. But for each category, EPA must go on and find as well that those sources contribute in the statutorily specified way to the air pollution at issue. To illustrate, with respect to motor vehicles, the air pollution from motor vehicles must be anticipated to endanger public health or welfare, and motor vehicles must "cause or contribute to" that air pollution.

EPA should start with the first finding: that the air pollution that results from greenhouse gases may reasonably be anticipated to endanger public health or welfare. As we have said, the ANPR goes a long way toward providing the necessary grounding for

this finding. We recommend four specific answers to questions EPA poses for public comment in the ANPR.

First, we recommend that EPA find that greenhouse gases endanger both public health and welfare. The ANPR and accompanying documents provide sufficient evidence on both points, but the emphasis is on welfare rather than health. We believe it is scientifically more defensible and normatively more appropriate to make both public health and welfare part of the endangerment finding. EPA should, at the same time, make clear that either effect standing alone (health or welfare) would be sufficient to support a finding of endangerment.

Second, we recommend that EPA discuss global as well as domestic effects in making the endangerment finding. The Act does not place geographical limits on the health and welfare effects that support an endangerment finding; it refers, without spatial limitation, to “air pollution which may reasonably be anticipated to endanger public health or welfare.” Moreover, the sheer magnitude of impacts from climate change, even the impacts that are first and most concretely experienced in other countries, portends domestic ripple effects. Again, EPA should emphasize that domestic effects alone would justify a finding of endangerment, but there is no reason for the agency to draw a firm line at U.S. borders in discussing the consequences of climate change for health and welfare.

Third, we recommend that EPA discuss both current and future effects on public health and welfare. Here, too, the statute does not require a different result; it does not place temporal limits on the health and welfare effects that support an endangerment finding. Indeed, the statute’s language of reasonable anticipation assumes the relevance of future effects. The agency should make clear that either present or future effects standing alone would suffice for the endangerment finding, and discuss the evidence for both of these effects in its finding.

Fourth, the agency should find that the “pollution” that underlies an endangerment finding consists of individual greenhouse gases, not of an aggregated group of those gases, as EPA has tentatively suggested in its ANPR. In the ANPR, EPA spends a lot of effort figuring out which gases should be included within the “pollution” that causes climate change and which ones should be excluded. For example, it rules in carbon dioxide and five other greenhouse gases on which the Intergovernmental Panel on Climate Change (IPCC) has focused, but rules out water vapor and ozone-depleting substances. We believe that, rather than making this global judgment up-front in the endangerment finding, the agency should instead start with the obvious suspects – such as carbon dioxide, methane, nitrous oxides, and hydrofluorocarbons – and find that each, separately, constitutes “air pollution” that may reasonably be anticipated to endanger public health or welfare. The alternative – picking some subset of greenhouse gases and declaring that to be the relevant “air pollution” – takes on too many decisions at once and thus, we believe, carries with it more litigation risk without obvious benefits.

Although no formal process is legally required for the endangerment finding, the agency might do well to allow the public to comment on its conclusions before the Administrator makes a final determination. Even with a generous 60-day comment period, we believe that the endangerment finding could be issued very early in the new administration.

The endangerment finding would have a significant legal effect, insofar as this finding is a prerequisite to regulation of many different sources under the Clean Air Act. The finding would also have an enormous symbolic effect, ending eight years of denial and deception about the causes and consequences of climate change.

#### **4. INCREASE THE EFFICIENCY OF NEW MOTOR VEHICLES**

##### **RECOMMENDATION.**

EPA should grant California permission to regulate greenhouse gas emissions from motor vehicles and should examine whether new fuel efficiency standards proposed by the National Highway Traffic Safety Administration (NHTSA) are strict enough to comply with the pollution control requirements of the Clean Air Act.

If the federal government decides to provide a capital infusion for the Big Three, it should be on condition that the industry market advanced plug-in hybrid and develop other advanced vehicles, such as “supercars” capable of fuel economy several times that of current NHTSA fuel economy standards.

##### **DISCUSSION.**

###### **a. California waiver**

Because California had restrictions on air pollution from motor vehicles before Congress passed the Clean Air Act, the statute allows California to adopt its own standards (and allows other States to choose between adopting the California or federal requirements). But before California’s standards can take effect, EPA must grant permission – a “waiver,” in Clean Air Act parlance. Eighteen States – representing almost half of the U.S. population – have adopted or are on course to adopt California’s plan to reduce motor vehicle emissions from cars and trucks thirty percent by 2016, beginning with the 2009 model year. But in late 2007, EPA announced that it was denying California’s waiver, thus preventing the other States, too, from demanding better fuel economy.

EPA should reverse course and grant California permission to regulate greenhouse gases from motor vehicles. Section 209(b) of the Clean Air Act provides that California may regulate motor vehicles as long as its standards will be at least as protective as federal standards and, among other things, its standards are necessary to meet “compelling and extraordinary conditions.” In denying the waiver in the Bush

Administration, EPA departed from longstanding practice and ruled that, with respect to regulation of greenhouse gases, this program, standing alone and apart from the rest of California's clean air program, must meet the conditions for a waiver. EPA then ruled that this program did not meet those conditions because climate change will cause harm everywhere, and thus California's problems related to climate are not "compelling and extraordinary."

Undoing this ruling should be quite straightforward as a legal matter. EPA should first return to its decades-long policy, supported by explicit statutory language, of looking at California's standards "in the aggregate" in deciding whether the conditions for a waiver are met. Then EPA must recognize – as it also has for a long time – that the existence of a problem in states other than California does not preclude California from enacting its own standards.

Granting California's waiver will have an appreciable effect on greenhouse gases from motor vehicles. Almost half of the U.S. population lives in States that have adopted California's standards. Granting the waiver will thus change the greenhouse gas profile of new cars bought by tens of millions of Americans.

#### **b. Federal standards**

After the Supreme Court's decision in *Massachusetts v. EPA* and before Congress called for an increase in fuel economy in the Energy Independence and Security Act (EISA), EPA had begun work on standards to reduce greenhouse gas emissions from new motor vehicles. The most significant work was done on standards that would increase the fuel efficiency of these vehicles.

NHTSA has, pursuant to EISA, proposed new fuel economy standards. It based these standards on the results of a formal cost-benefit analysis. The standard it chose depended entirely on the discount rate it used for future costs and benefits. NHTSA used a seven percent rate; at a three percent rate, stricter standards would have been justified.

A discount rate of seven percent is enormous and unjustified in the intergenerational context of climate change. A discount rate of seven percent makes the future benefits of addressing climate change appear nonexistent. If NHTSA had used a more credible discount rate in its analysis, its standards would have been stricter. This fact alone gives EPA reason to scrutinize NHTSA's proposed standards carefully to determine whether they are stringent enough to satisfy the Clean Air Act. It also gives President Obama reason to ask NHTSA to reconsider its decision using at least a more reasonable discount rate. Unlike a situation in which a president intervenes in a scientific dispute in which he can offer no special expertise, the controversy over discount rates is a clash over values – a subject on which it is perfectly appropriate for the president to opine.

EPA itself has, moreover, identified many fuel-saving technologies already in existence that could increase fuel efficiency beyond what is required by NHTSA's

proposed standards. Given the dubious analytical basis of NHTSA's proposal and the existence of better technologies, EPA must seriously consider setting standards for new motor vehicles under the Clean Air Act. As the Supreme Court stated in *Massachusetts v. EPA*, the existence of a fuel economy program does not allow EPA to "shirk its environmental responsibility" under the Clean Air Act. EPA must determine whether NHTSA's proposed standards adequately serve the environmental objectives of the Clean Air Act. President Obama can help this process along not only through the appointment of an EPA Administrator who takes the requirements of the Clean Air Act seriously, but also through a directive to NHTSA and EPA to work together in ensuring that U.S. standards for motor vehicles satisfy the requirements of all of the nation's laws.

As noted above, before regulating new motor vehicles and motor vehicle engines, EPA must also find that air pollutants from them "cause or contribute to" the air pollution that endangers public health or welfare. U.S. motor vehicles emit about six percent of the world's carbon dioxide. EPA has in the past found that sources contributing as little as one percent to a pollution problem are sufficiently important to be regulated. We believe motor vehicles easily pass the "causes or contributes to" threshold of section 202. Other sources might be a closer case, and in those circumstances EPA will need to decide whether a percentage contribution of lower than one percent justifies regulation, in light of the enormous volume of emissions of CO<sub>2</sub> and the global nature of climate change.

### **c. Federal procurement**

Even as it considers new federal standards for greenhouse gas emissions from motor vehicles, EPA can be boosting the market for efficient vehicles by implementing section 141 of the Energy Independence and Security Act of 2007. This provision generally requires federal agencies to acquire vehicles that are "low greenhouse gas emitting vehicles." EISA directs EPA to identify such vehicles every year after taking into account "the most stringent standards for vehicle greenhouse gas emissions applicable to and enforceable against motor vehicle manufacturers for vehicles sold anywhere in the United States." Once EPA has granted the waiver for California's standards, it should identify as "low greenhouse gas emitting vehicles" only those vehicles that comply with California's standards. Beyond this, EPA should also consider whether available technology justifies setting an even higher bar for the designation "low greenhouse gas emitting vehicle" than the California standards would suggest.

### **d. Federal Assistance to U.S. Automakers**

If, as appears likely, the federal government is about to make a multi-billion dollar investment in the future of U.S. automakers, the government should insist that in return, the automakers commit to the rapid commercialization of vehicles capable of fuel economy several times the current NHTSA fuel economy standards. For years, the U.S. vehicle industry has fought against making vehicles more fuel efficient, and invested in large, fuel-inefficient vehicles such as SUVs. While not the only reason for the U.S. automakers current financial condition, the companies' choice to concentrate on inefficient vehicles is a contributor to their current financial straits. If these companies

are to receive the benefit of a federal “bailout,” federal funds should come with a condition, enforced by active federal oversight and supervision of the companies’ investment decisions, that they remake their fleet to address the imperative of lowering greenhouse gas emissions. Such a policy will have the double benefit of reducing the greenhouse gas footprint of the United States, and assuring that U.S. companies will be more competitive in a world vehicle industry increasingly dominated by concern over global warming and energy security.

## **5. INCREASE THE EFFICIENCY OF BUILDINGS AND APPLIANCES**

### **RECOMMENDATION.**

California has long been a laboratory for energy efficiency policy. We recommend that President Obama acknowledge the demonstrated success of the State’s energy efficiency programs over the past three decades by ordering the Department of Energy (DOE) to improve national building and appliance efficiency standards as required by existing law. The Agency’s consistently tardy standard-setting process demonstrates that promulgating standards already mandated by law will require very serious and continuing presidential direction.

We also recommend that President Obama direct DOE to issue a national model “green” building code, using California’s new code as a template. States that chose to adopt the code could receive financial benefits from DOE for other energy efficiency projects in their state.

### **DISCUSSION.**

Energy efficiency measures are among the easiest, most cost-effective ways to reduce greenhouse gas emissions. Despite the fact that its actions are constrained in many ways by preemptive federal laws on efficiency, California leads the nation in this area. The State has comprehensive, frequently updated standards, which have resulted in an annual peak demand reduction of 12 gigawatts at a cost of \$0.02-\$0.03 per kilowatt hour over the past thirty years. That’s one-fifth the cost of electricity generated from new nuclear, coal, and natural gas-fired plants.<sup>4</sup> In 1970, Californians consumed approximately the same amount of electricity per capita as the rest of the United States; today, as a result of California’s sustained commitment to energy efficiency, Californians consume one-third less electricity per person than other Americans. California’s aggressive energy efficiency programs have resulted in the development of technology that can also be applied nationwide to achieve higher efficiency goals. A new administration could take a cue from California and act immediately to increase energy efficiency nationwide.

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<sup>4</sup> Joseph Romm, *California Dreamin’: Energy Efficiency, Part 3*, GRIST, July 28, 2008, at <http://gristmill.grist.org/story/2008/7/28/122449/662>.

California has the highest energy efficiency standards for appliances and buildings in the nation. In 2005, the State revised and updated all of its energy efficiency standards. Since 2006, it has annually updated the appliance standards by raising the minimum efficiency required. Most recently, California issued the most stringent building code yet for new residential and non-residential construction. The new code becomes mandatory in 2009 and is projected to save as much as 500 megawatts by 2013.

The California Public Utility Commission also recently approved a Strategic Plan for Energy Efficiency. The document proposes methods for achieving three goals: 1) use of zero net energy in all new residential buildings by 2020, 2) use of zero net energy in all new commercial buildings by 2030, and 3) optimization of heating, ventilating, and air conditioning systems for California's climate.

The new administration does not have to wait for Congress to pass a new law to increase energy efficiency across the country. EISA – the Energy Independence and Security Act of 2007, discussed previously – requires DOE to determine revised standards for lighting and appliance efficiency. EISA also authorizes DOE to promulgate regional standards for heating and cooling equipment. The new administration should promulgate these sets of standards promptly upon taking office.

EISA also includes requirements for new federal buildings to meet standards that require thirty percent greater efficiency than the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards or the International Energy Conservation Code (IECC). For private buildings, EISA authorizes DOE to create and implement a new program, the Commercial Buildings Initiative (CBI), to be designed with input from the industry. The goal of CBI is to make all new commercial buildings use net zero energy by 2030. In the new administration, DOE should ensure that CBI is created and set target dates to achieve milestones on the path to net zero energy commercial buildings.

In addition, Section 142 requires each federal agency to produce a plan for reducing fuel consumption by twenty percent by 2015 and increasing the use of alternative fuels by ten percent from a 2005 baseline, and requiring a similar reduction/increase each year thereafter.

In addition to requiring follow-through on these statutory requirements, President Obama could also direct DOE to design and issue a model “green” building code for residential buildings, based on California's new code. Adopted in July, 2008, California's green building standards include provisions for renewable energy, grey water recycling, and energy efficiency. DOE would have to put in only minimal effort to create a national model “green” building code. After DOE issues the code, the President could authorize a DOE incentive program for states that adopt it by linking adoption to increased federal funding for state energy efficiency efforts.

## **6. MANAGE ENERGY PRODUCTION TO REDUCE CO<sub>2</sub> EMISSIONS**

### **RECOMMENDATION.**

While technologies to control and sequester CO<sub>2</sub> emissions from coal-fired electric generating facilities are still being commercialized, substantial reductions in U.S. CO<sub>2</sub> emissions can be made with management techniques that could be implemented immediately. President Obama should instruct the Secretary of Energy and the Administrator of the Environmental Protection Agency to develop an agenda of such measures and identify presidential actions needed to implement them. Such actions could include the Department of Energy submitting a formal proposal to FERC requesting implementation of management measures to reduce carbon emissions from electric generation that falls under FERC's jurisdiction.

### **DISCUSSION.**

In the United States today, electricity is generated by a mix of units that includes at any one time coal- and gas-fired fossil fuel generators, nuclear power plants, and renewable generators using water, wind, geothermal, and in a few instances, even solar as the source of energy. Some of these units emit no CO<sub>2</sub>, while others are among the primary sources of global warming in the world. Despite the obvious implications for global warming and conventional air pollution of decisions about which of these generating units will supply the demand for electric power, the deployment of electric generating resources ("dispatch" in the industry's terminology) to match the fluctuating demand for electricity is managed without regard for their environmental impact, and without the participation of environmental authorities.

Instead, the electric generating resources are managed today entirely by reference to the cost of generating power at each electric generating unit and maintaining operational reliability of the system. In most places, coal and nuclear units are dispatched before generators using renewable sources. The reason is that, under today's cost structure (including the various subsidies described elsewhere in this essay), they produce power at the lowest cost per kilowatt hour. Emissions – whether CO<sub>2</sub> or "conventional" pollutants such as sulfur dioxide – are not considered in these dispatch decisions.

These energy resources could be managed differently, to reflect the disparate effects of different technologies on global warming. Indeed, China, so often the scapegoat for the Bush Administration on global warming, is already showing the way towards a dispatch system designed to minimize global warming and other pollution. The Chinese government has adopted a number of pathbreaking policies to manage its electric generating system to minimize emissions of CO<sub>2</sub>.

- First, China has adopted "environmental dispatch" for its generating facilities. The cleanest plants – not necessarily the cheapest – are dispatched first and run the most under this system.

- Second, China has adopted output-based Generation Performance Standards under which plants that are most pollution efficient are economically rewarded for their efficiency.
- Third, China is retiring its small, dirty old generating plants. By contrast, utilities in the U.S. have spent millions over the past 20 years extending the life of small, inefficient (and highly polluting) coal-fired units built in the 1950's and '60's.
- Finally, because coal quality and operating skill affect the pollution emitted from a fossil-fuel fired unit, Chinese dispatchers receive real-time emissions data that allows them to adjust the order of dispatch in real time to maintain consistency with the “environmental dispatch” principle.

Adopting these management principles would move coal-fired units down in the dispatch order, while moving cleaner units – renewables and nuclear – up to become more prominent in the nation's mix of generating capacity. Without question, environmental dispatch would have an impact on the price of electricity, though far less than capture and sequestration of CO<sub>2</sub>, particularly from today's conventional coal-fired units. But if China – still a relatively poor nation compared to the United States – is willing to pay such a price to address global warming, how can the United States not afford to take the same steps to achieve reductions in emissions of greenhouse gases immediately?

Much of the U.S. system of economic dispatch is under the control of regional transmission organizations and independent system operators. These entities manage the electricity grid and the electric generating units that deliver electricity into the grid over a large, usually multi-state, area. Wholesale transactions within and between the territories of these entities are under the regulatory control of the Federal Energy Regulatory Commission (FERC), an independent agency originally created by Congress in 1920. The President's direct power over FERC is limited to the appointment of FERC's five Commissioners. The current Commissioners were all appointed by President George W. Bush. President Obama's first opportunity to appoint a commissioner will occur at the end of June, 2009.

Because FERC is an independent agency, we suggest President Obama instruct the Secretary of Energy and the Administrator of the Environmental Protection Agency to develop an agenda of such measures and identify presidential and/or FERC actions needed to implement them. For example, the Secretary of Energy, or the President himself, appear to have the ability to propose new FERC regulation to the agency. Despite FERC's formal independence, even “independent” agencies pay close attention to the stated preferences of the president of the United States.

## **7. CURTAIL EMISSIONS FROM COAL-FIRED POWER PLANTS AND OTHER INDUSTRIAL SOURCES**

### **RECOMMENDATION.**

Using the Clean Air Act, EPA should set performance standards for new coal-fired power plants based on the greenhouse gas emissions profile of plants using Integrated Gasification Combined Cycle (IGCC) technology. EPA should then turn to other large industrial sources of greenhouse gases – industrial boilers, oil refineries, cement kilns, and landfills – and set performance standards for them as well. We recommend that EPA use section 111 of the Clean Air Act for this purpose.

### **DISCUSSION.**

Section 111 of the Clean Air Act creates the “New Source Performance Standards” (NSPS) program. It requires new and modified sources in regulated categories to comply with EPA’s standards of performance for those categories. A standard of performance is “a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.”

Regulating greenhouse gas emissions from new coal-fired power plants is an important part of meaningful action on climate change. Existing coal-fired units contribute more than a third of the United States’ CO<sub>2</sub> emissions. Companies have announced plans for 58 new coal plants around the country. The United States certainly will not be able to present itself as a leader on global climate policy if it builds these plants without the best available technology for controlling greenhouse gas emissions.<sup>5</sup>

We propose that EPA establish NSPS for coal-fired power plants consistent with the use of Integrated Gasification Combined Cycle (IGCC) technology. Under section 111, EPA must set the emissions standard at the level of the best demonstrated technology, but it may not specify a particular technology to be used to meet a performance standard. Section 111 states, with an exception immaterial here, that “nothing in this section . . . authorize[s] the Administrator to require, any new or modified source to install and operate any particular technological system of continuous emission reduction to comply with any new source standard of performance.” Thus, if EPA sets a CO<sub>2</sub> standard at the level of an IGCC plant, utilities will have the option of meeting that emissions standard through methods other than the IGCC technology.

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<sup>5</sup> Some would argue that sequestration technology is so unproven that it is a mistake to allow construction of new coal units, even IGCC units. Without taking a position on this underlying question, this discussion assumes that some new coal-fired units will be built.

IGCC plants have significant environmental benefits compared to traditional coal plants. Because they use two turbines, they are about ten percent more efficient than traditional coal plants for each British thermal unit of coal burned. Significant amounts of pollutants such as mercury, nitrogen oxides, and sulfur dioxide can be removed before combustion and made into useable byproducts such as sulfuric acid or inert “slag,” which can be used as road fill. IGCC plants produce twelve percent less CO<sub>2</sub> than state-of-the-art supercritical coal-burning units and thirty percent less carbon than the average coal-fired power plant in use today.

IGCC technology was first commercially demonstrated in 1984 at a plant in California. Two other plants went on line, in Indiana and Florida, in the 1990s. General Electric, which pioneered the technology, has sold at least 23 gas turbines and logged over 400,000 operating hours with it. The company’s product line includes units ranging in size from 100 to 400 megawatts.

The Courts of Appeals for the District of Columbia Circuit – the court responsible for hearing appeals of national rules like the New Source Performance Standards of section 111 – has held that “‘adequately demonstrated’ [does not necessarily imply] that any . . . plant now in existence be able to meet the proposed standards.”<sup>6</sup> Rather, section 111 “looks toward what may fairly be projected for the regulated future, rather than the state of the art at present . . . . It is the ‘achievability’ of the proposed standard that is in issue.”<sup>7</sup> EPA can thus set the standard for power plants based on a projection of existing technology, “subject to the restraints of reasonableness” and not “based on ‘crystal ball’ inquiry.”<sup>8</sup> Pilot scale operations or use of the technology in foreign countries can also be considered in determining if a technology has been “adequately demonstrated.”<sup>9</sup> In the case of IGCC, EPA needs no crystal ball. Two already-operating commercial scale power plants and an entire product line of IGCC turbines made by GE should be sufficient to sustain an emissions standards based on this technology.

At this moment, the same cannot be said of carbon sequestration. Commercializing carbon sequestration may be the single most urgent energy R&D priority in this context. What is clear, however, is that carbon sequestration will not be possible from “conventional” coal-fired units, while it is possible from an IGCC unit. Thus for EPA to allow construction of further conventional coal units is effectively to license additional CO<sub>2</sub> emissions into a carbon-constrained atmosphere for the next 40-60 years. Requiring new units to be IGCC preserves the opportunity to require retrofits of carbon sequestration when it becomes “adequately demonstrated” – and in the meantime the greater efficiency of IGCC units will provide significant carbon emission benefits compared to conventional units. While utilities may complain that IGCC paired with carbon sequestration has not been adequately demonstrated, IGCC alone operates on a

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<sup>6</sup> 486 F.2d 387, 391 (D.C. Cir. 1976).

<sup>7</sup> *Id.* at 387.

<sup>8</sup> *Id.* quoting *International Harvester*, 478 F.2d at 629.

<sup>9</sup> *Id.* at 391. “It is the system which must be adequately demonstrated and the standard which must be achievable.” See *Essex Chemical Corp. v Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973).

commercial scale and EPA should be able to set an NSPS at the emissions level achieved by the technology.

Section 111 requires EPA to include on a list of categories of sources to be regulated a category that “in his judgment causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.” The category of sources we discuss here – coal-fired power plants – are already included on the list of sources to be regulated under section 111. Thus EPA need not make a separate endangerment finding for these sources. EPA is required periodically to revise standards under section 111, “if appropriate.” In light of the dangers posed by greenhouse gases, EPA could easily find that it is “appropriate” to revise the standards for coal-fired power plants under section 111.

## **8. ELIMINATE SUBSIDIES THAT REWARD HIGHLY POLLUTING ENERGY RESOURCES**

### **RECOMMENDATION.**

If we are to achieve the goals of greater energy independence and lower global warming emissions, at the least cost to Americans, President Obama must find a means to close the loopholes and subsidies that favor today’s highly polluting energy resources. Reducing these subsidies could provide badly needed funds for tax reduction measures or for the President’s new energy independence initiatives.

Specifically, we suggest the creation of an Energy Subsidies Commission, made up of individuals who are not in the energy industry, to examine the priorities represented in current energy subsidies and make recommendations for eliminating those that are counter-productive to the President’s global warming and energy independence policies.

We also recommend that the President request Congress to provide him with powers analogous to those of the Defense Base Closure and Realignment Act of 1990 – powers to implement the recommendations of the Energy Subsidies Commission, subject to Congressional review. We believe that only a process such as this one offers a chance of cutting through the tangle of special interest politics that has strangled our energy policy for years.

### **DISCUSSION.**

Renewable energy technologies have received only five percent of total federal energy incentives from 1950-2003, compared to nearly forty eight percent to oil, thirteen percent to natural gas, twelve percent to coal, and ten percent to nuclear.<sup>10</sup> During the

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<sup>10</sup> Hydro received eleven percent and geothermal received less than one percent of federal energy incentives from 1950-2003. Roger H. Bezdek & Robert M. Wendling, *The U.S. Energy Subsidy Scorecard*, ISSUES IN SCIENCE & TECHNOLOGY, at <http://www.issues.org/22.3/realnumbers.html>. (A Publication of NAS, Natl Academy of Engineering, Institute of Medicine, and Univ. of Texas at Dallas.)

last fifty years, the federal government has spent \$644 billion on energy incentives.<sup>11</sup> Fossil fuels received more than eighty percent of that total or nearly \$525 billion.<sup>12 13</sup>

The following provides some examples – and we stress that these are only examples – of how government currently subsidizes technologies that cause global warming – coal and oil. When it comes to technologies that do not directly contribute to global carbon loading, such as solar, wind, biomass, and nuclear, government policy subsidizes nuclear – the most expensive and risky – and ethanol, the least effective.

### **a. Subsidies for Coal**

For decades, the U.S. government has provided massive subsidies to the most global-warming fuel, coal. Some of these come in the form of hand-outs of money from the federal government directly to the coal and utility industries, or tax loopholes that cost taxpayers billions. Lax regulation that allows the coal and electric utility industries to avoid paying the true cost of coal is worth much more.

The government subsidizes conventional coal combustion through the tax code. In the wake of the 1979 energy crisis, Congress passed a tax credit to encourage the use of “synthetic fuels.” The purpose of this credit was to encourage processes that would convert coal to liquid fuels that would replace oil, thus reducing our nation’s dependence on foreign oil. Instead, it has become nothing more than a multi-billion dollar tax loophole encouraging the use of coal.

Under political pressure from the coal and utility interests, the Internal Revenue Service has agreed to approve tax credits for “synthetic fuel” created by merely spraying ordinary coal with latex or pine-tar resin. The resulting “synthetic fuel” does not burn more cleanly or efficiently than ordinary coal – and it certainly does nothing to reduce American dependence on foreign oil. But it does shovel billions from the taxpayers into the pockets of the coal and utility industries. Congressman Lloyd Doggett (D-TX) estimates that the synfuel tax break now provides a subsidy for coal combustion of more than \$1 billion per year.<sup>14</sup> In 2007, the federal government doled out \$2.37 billion in tax credits for synfuel, now called “refined coal.”

Of course, the largest subsidy to coal is paid, not in dollars, but in avoidable death, disease, and environmental destruction. These “externalities” include destroyed

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<sup>11</sup> *Id.* In the analysis cited, “energy incentives” include investment in research and development, favorable tax policy, favorable regulatory policy, disbursements (such as grants), government services offered free of charge, and direct federal involvement in the marketplace.

<sup>12</sup> *Id.*

<sup>13</sup> During the same period, the Department of Energy alone spent over \$39.6 billion on energy technology for fossil energy. *DOE Budget Authority History Table by Appropriation*, May 2007; *DOE Congressional Budget Requests* (several years); DOE (Pacific Northwest Laboratory), *An Analysis of Federal Incentives Used to Stimulate Energy Production*, 1980. Deflator Source: *The Budget for Fiscal Year 2009*. Historical Tables. Table 10.1. Gross Domestic Product and Deflators Used in the Historical Tables, 1940-2013. p. 194-195.

<sup>14</sup> JEFF GOODELL, *BIG COAL: THE DIRTY SECRET BEHIND AMERICA’S ENERGY FUTURE* (2006).

landscapes, streams, and homes, and occupational injuries and deaths in the mining of coal; the damage to human health, forests, soils, and waterways associated with burning coal to generate electricity; and harms from the massive CO<sub>2</sub> emissions that are altering the climate – thirty six percent of which come from coal. EPA has estimated that the calculable benefits to public health and the environment from installing control technologies for “conventional” pollutants such as SO<sub>2</sub>, NO<sub>x</sub>, and mercury, would reach \$98.5 billion annually by 2015.<sup>15</sup> And this figure is for redressing only a fraction of the costs of using coal.

## **b. Subsidies for Oil**

Since the dawn of the automotive age, the federal government has subsidized the production and use of oil. For years, domestic oil production benefited from special tax treatment that allowed companies to take the entire tax benefit of depletion of the well at the beginning of its life. Even though we now know the effects of excessive oil consumption on the climate – not to mention our national security and our economy – the federal government continues to provide huge subsidies that encourage Americans to import and use more oil. Nearly half of all federal energy subsidies in the last half century have been allocated to the oil industry, totaling a staggering \$302 billion.<sup>16</sup>

Our excessive reliance on oil, encouraged by federal subsidies to the industry, has had a tremendous effect on our economy. Former Senator Timothy Wirth, former White House Chief of Staff (Clinton) John Podesta, and former White House Counsel (George H.W. Bush) C. Boyden Gray argued, in an article written for *Foreign Affairs*, that over the past 40 years, significant increases in oil prices have been a primary contributing factor to every U.S. economic recession.<sup>17</sup> An Oak Ridge National Laboratory study estimates that periods of rapid price increases of oil have cost the U.S. economy \$7 trillion over the last 30 years.<sup>18</sup>

## **c. Subsidies for Nuclear Power**

Even among non-carbon energy options, government subsidies go disproportionately to the most expensive, nuclear power. Investments in the most expensive technologies inevitably will crowd out other technologies that could achieve greater carbon reduction at lower prices. For example, while campaigning for the presidency, Senator John McCain argued that the U.S. should invest in 45 new nuclear power plants as a way to cut carbon emissions. At today’s costs, McCain’s proposal would have meant spending more than \$300 billion on new nuclear plants – nearly half the cost of the financial system bail-out.

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<sup>15</sup> U.S. ENVTL. PROTECTION AGENCY, PUBL’N NO. EPA-452/R-05-002, REGULATORY IMPACT ANALYSIS FOR THE FINAL CLEAN AIR INTERSTATE RULE, at 2-1 to -2 (Mar. 2005), at <http://www.epa.gov/airprog/interstateairquality/pdfs/finaltech08.pdf>.

<sup>16</sup> Roger H. Bezdek & Robert M. Wendling, *The U.S. Energy Subsidy Scorecard*, ISSUES IN SCIENCE & TECHNOLOGY, at <http://www.issues.org/22.3/realnumbers.html>.

<sup>17</sup> Timothy E. Wirth, C. Boyden Gray, and John Podesta, *The Future of Energy Policy*, 82 *Foreign Affairs* 132, 135 (July/August 2003).

<sup>18</sup> *Id.*

While nuclear power stations do not generate greenhouse gas emissions,<sup>19</sup> nuclear is far more expensive than other non-emitting means of providing energy services such as wind, and building and appliance efficiency standards. The true cost of nuclear has been hidden by massive subsidies from the federal government. These subsidies are of two kinds – direct economic subsidies to the industry, and shifting the extraordinary financial and safety risks associated with nuclear power to the public.

Direct subsidies for nuclear power are many and lavish. The federal government has given direct subsidies to nuclear power of \$64 billion over the past 50 years.<sup>20</sup> And direct subsidies continue. The 2005 energy legislation provides direct operating subsidies for new nuclear power plants and also subsidies for the cost of decommissioning nuclear power plants. In 2007 alone, all federal subsidies to nuclear power totaled nearly \$1.3 billion.<sup>21</sup>

The federal government also subsidizes nuclear power by assuming much of the risk unique to nuclear technology. Utilities do not pay the costs of insuring the risks of catastrophic accidents, sabotage, or terrorism to which only nuclear power units are subject. For example, the potential death and destruction that would accompany a nuclear meltdown – of the kind that very nearly occurred at Three Mile Island in 1979 – would create liabilities of tens to hundreds of billions of dollars. But a federal law – the Price-Anderson Act – limits the liability of the power company to \$300 million.<sup>22</sup> The rest would have to be assumed by the taxpayers. The federal government also takes responsibility for creating an underground storage cavern to store spent nuclear fuel in perpetuity. The federal government is expected to subsidize this storage facility to the tune of about \$19 billion by the time it is complete.<sup>23</sup>

Finally, nuclear power has been subsidized by State public utility commissions. The staggering costs of building the 104 first generation nuclear power plants during the 1960's and 1970's brought many investor-owned utilities near to bankruptcy, damaging their stock value and ability to raise capital for nearly 20 years. During the '80's, when many states "restructured" their electricity markets, these utilities agreed to injecting competition into the electricity market place – but only if their public utility commissions agreed to transfer their nuclear debts (renamed "stranded assets") – from their shareholders to their customers.

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<sup>19</sup> The same cannot be said for the nuclear fuel cycle, however. Refining uranium into nuclear fuel is a very electricity-intensive process, and much of the energy currently used to generate the electric power is coal-fired. Transportation and storage of nuclear waste are also energy consuming activities.

<sup>20</sup> Roger H. Bezdek & Robert M. Wendling, *The U.S. Energy Subsidy Scorecard*, Issues in Science & Technology, at <http://www.issues.org/22.3/realnumbers.html>.

<sup>21</sup> U.S. DEPT. OF ENERGY, PUBL'N NO. SR/CNEAF/2008-01, FEDERAL FINANCIAL INTERVENTIONS AND SUBSIDIES IN ENERGY MARKETS 2007, at xii (April 2008), at <http://www.eia.doe.gov/oiaf/servicerpt/subsidy2/index.html>.

<sup>22</sup> *Id.* at 197.

<sup>23</sup> Environment News Service, *Inflation Hits Yucca Mountain Nuclear Waste Dump*, Aug. 5, 2008, at <http://www.ens-newswire.com/ens/aug2008/2008-08-05-091.asp>.

To argue against such subsidies is not to argue against nuclear power. Nuclear may well have a place in our nation's global warming policy, but the point is that there is no way to assess what role is appropriate until policymakers and the public know its true cost. So long as these costs remain shrouded in subsidies, Americans and their government are likely to over-invest in nuclear, increasing the cost of dealing with global warming and making it more difficult to address other urgent national priorities.

#### **d. Subsidies for Ethanol**

Ethanol has been promoted for a decade as a way to increase American energy independence. As global warming has become a more pressing priority, ethanol advocates have argued that substituting ethanol for gasoline can help deal with that problem as well.

The federal government provides massive subsidies to ethanol. The Energy Independence and Security Act of 2007 mandates the production of nine billion gallons of ethanol and other renewable fuels in 2008 climbing to 36 billion gallons in 2022. Researchers have concluded that corn-based ethanol actually nearly doubles greenhouse gas emissions over thirty years.<sup>24</sup> A principal reason is this: when agricultural land is used to produce fuel instead of food, demand for food drives conversion of carbon-sequestering native grasslands and forests into farm land, increasing carbon emissions. In addition, corn production itself is energy intensive, and the fertilizer used to produce corn results in additional emissions of nitrogen oxides into the air.

Yet, subsidies for ethanol continue. The conservative Cato Institute estimates that ethanol subsidies amount to \$1.05-\$1.38 per gallon. For comparison, subsidies for gasoline are estimated at about \$0.30 per gallon.<sup>25</sup>

#### **e. Navigating the Politics of Subsidies**

By encouraging consumption of energy, these subsidies and many others contribute substantially to global warming. Moreover, they discourage the use of renewable energy sources and investments in energy conserving technologies. (While renewable energy sources also receive small subsidies, relative to coal, nuclear, and oil, these do not level the playing field.) In addition, of course, subsidies to outdated technologies waste billions of dollars of taxpayer money every year, and put the lie to the idea of free market competition in energy. Now they also stand in the way of our national security and the future of our planet.

Energy subsidies continue to exist because energy interests wield great political power. Individually, Members of Congress can rarely oppose strong local energy

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<sup>24</sup> Timothy Searchinger, *Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land-Use Change*, SCIENCE, Vol. 319, no. 5867, 1238-1240 (Feb. 29, 2008).

<sup>25</sup> Jerry Taylor and Peter Van Doren, Senior Fellows, *Ethanol Makes Gasoline Costlier, Dirtier*, CATO INSTITUTE, [http://www.cato.org/pub\\_display.php?pub\\_id=7308](http://www.cato.org/pub_display.php?pub_id=7308), originally appearing in the *Chicago Sun-Times*, Jan. 27, 2007.

interests, even when they know the nation needs a new energy policy. Perhaps we can learn how to handle this problem by looking at a similarly intractable problem, the closing of unnecessary military bases in the 1990's. At that time, everyone knew it was necessary to close some military bases, but local politics would force individual Members of Congress to oppose closing bases in their districts. To deal with this political problem, Congress created a high level Base Closure and Realignment Commission (BRAC) to review all the bases and recommend which should be closed.

The process of the Commission gave political cover for Members of Congress who could publicly lobby against base closings in their state. BRAC provided recommendations to the President, who was required to approve or reject them within two weeks. The approved recommendations were automatically adopted unless Congress enacted a joint resolution disapproving them before its adjournment for the session or within 45 days after the recommendations were submitted to the President.

A similar mechanism could provide a means to eliminate energy subsidies. President Obama will face unprecedented revenue challenges resulting from the current financial crisis as well as the continuing wars in Iraq and Afghanistan. Eliminating energy subsidies that distort American energy, environmental, and national security policies would be a potential source of billions of dollars in revenues or reduced federal expenditures.

The BRAC was created legislatively. The Presidential approval mechanism, with Congressional override, was tested in the courts and survived constitutional challenge. An analogous Energy Subsidy Commission would be most effective if enacted by Congress and given the decision-making structure provided the BRAC.

Even without new legislation, however, President Obama could create a commission of neutral energy experts from outside the energy industry to make recommendations for eliminating market-distorting subsidies in U.S. energy policy. This commission should report to the President and make recommendations to the President and the Congress for eliminating energy subsidies. The President could use these recommendations in constructing his energy budget and proposing legislation to rescind the subsidies.

## **9. MANAGE THE PUBLIC LANDS TO SEQUESTER CARBON AND PROVIDE HABITAT FOR AT-RISK SPECIES**

### **RECOMMENDATION.**

Forests are the largest "sink" for global warming emissions, and the loss of forested land around the world contributes as much to the buildup of greenhouse gases in the atmosphere as does the world's industry. President Obama should recognize that the vast public land holdings of the federal government are integral to his global warming strategy. Thus he should use his powers of appointment and budgeting to make

sequestration of carbon dioxide, and provision of habitat for species at risk from climate change, the highest priorities in the departments that manage the public lands.

## **DISCUSSION.**

The federal government owns, on behalf of all Americans, vast tracts of land. Over 450 million acres are under the control of the Forest Service and the Bureau of Land Management. The governing legislation grants broad authority to these agencies to manage these lands sustainably. If managed properly, these lands can increase their capacity as CO<sub>2</sub> “sinks,” while the lessons learned by government managers can be applied to private forest and range lands.<sup>26</sup> Moreover, these federal lands can also cushion the effects of global warming by providing opportunities for affected species to move northward to suitable habitat.

Under President Bush, the federal lands have been managed for exploitation of natural resources. Under the guise of fire protection, President Bush authorized new logging in the national forests, and the BLM issued thousands of leases to allow drilling of new gas wells in formerly pristine areas.

President Obama will have an opportunity to bring new priorities to the management of these federal lands. The President should appoint Secretaries of the Agriculture and Interior Departments who understand the importance of addressing global warming, and the role that public lands can play in sequestering CO<sub>2</sub> and providing refuge for species (both plant and animal) at risk from climate change. In addition, the President should issue an Executive Order directing the BLM and Forest Service to manage the public lands in the interest of maximizing sequestration of CO<sub>2</sub>, to maintain these relatively intact ecosystems to maximize the opportunity for at-risk species to adapt to a changing climate, and to do research and provide assistance to private farmers and forest holders on measures that will increase sequestration.

The United States Forest Service should do whatever it needs to do to revive the Clinton-era rule protecting almost 60 million acres of roadless areas in our national forests and then ensure that the rule remains in force. The rule has been tangled in legal proceedings almost since the day it was announced. After a legal challenge to the Clinton-era rule, the Bush Administration replaced this protective rule with one simply allowing states to ask for protection of the roadless areas within their borders. A district judge in California invalidated the Bush rule and reinstated the Clinton rule, only to have a judge in Wyoming recently decide that the Clinton rule was unlawful after all. The new administration should make its way through whatever procedural knots confront it to reinstate and implement the original rule. Reinstatement of the rule should include renewed protection for the Tongass Forest in Alaska, the largest national forest in the country. The Bush Administration exempted the Tongass from the Clinton-era rule, and

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<sup>26</sup> While tropical forests are the most important carbon sinks, virtually none is located in the U.S. The U.S. can, however, manage its public lands to maximize their ability to sequester carbon. In addition to reducing atmospheric carbon, such a policy could serve as an example for nations that contain tropical forests.

the California court's reinstatement of that rule did not include the Tongass. Taking these steps will help to address climate change, not through traditional pollution control, but through the preservation of carbon sinks that can absorb some of the carbon we discharge into the atmosphere, and by providing ecosystems that allow plants and animals a space to adapt to a changing climate.

## **10. CREATE GREEN MARKETS WITH DEPARTMENT OF DEFENSE PURCHASING POWER**

### **RECOMMENDATION.**

President Obama should make energy efficiency a priority for the Department of Defense. The Office of Management and Budget and the Secretary of Defense and his subordinates should be tasked with altering defense procurement policies to make DOD a major new market for green technology. Under earlier presidents, including Presidents Truman and Eisenhower, the military was required to give priority to important civilian objectives, such as integration of the races. Then, as now, some argued that pursuing such other priorities would weaken the U.S. military. Experience demonstrated, however, that integration strengthened the military and provided leadership to civilian society. Today President Obama needs to call upon the military once again to respond to an urgent national priority – perfecting more energy efficient technologies and reducing global warming gas emissions. We believe such a commitment will, as it did earlier, strengthen our nation's military capabilities and provide an example to other public and private institutions.

### **DISCUSSION.**

The Department of Defense consumes a staggering amount of energy, equal to the total consumption of Nigeria and its 140 million people.<sup>27</sup> In 2006, it consumed 117 million barrels of oil. Its non-tactical vehicle fleet of 187,000 vehicles consumed about 97 million gallons of gasoline.<sup>28</sup> The fuel consumption of American forces in Iraq and Afghanistan, where vehicles such as the M-1 tank get less than one mile per gallon, poses a strategic and tactical liability. Sustaining the fuel requirements in Iraq alone requires some 20,000 American troops and private contractors, who supply the fuel via 2,000 trucks that leave Kuwait every day in convoys vulnerable to roadside attack. As much as seventy percent of the tonnage moved to the battlefield today is fuel.<sup>29</sup>

In 2001, the Defense Science Board (DSB) released a study of DOD energy policies and concluded that there are many technologies with “the potential to improve

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<sup>27</sup> See “U.S. Military Energy Consumption,” at <http://www.energybulletin.net/node/29925>.

<sup>28</sup> Sohbet Karbuz, *U.S. Military Energy Consumption – Facts and Figures*, ENERGY BULLETIN, May 20, 2007, <http://www.energybulletin.net/node/29925>.

<sup>29</sup> Robert Bryce, *Gas Pains*, ATLANTIC MONTHLY, May 2005, <http://www.theatlantic.com/doc/200505/bryce>.

fuel efficiency applicable to all platforms at all levels of maturity.”<sup>30</sup> The study found that despite the benefits of better fuel efficiency, the benefits were not valued or emphasized in the acquisition process. The study noted that DOD failed to properly account for the price of fuel, thereby distorting platform design choices, and DOD accounting processes failed to penalize inefficiency. Among the recommendations, the DSB task force encouraged the Department to consider fuel efficiency in the acquisition process, to give incentives for efficiency, price fuel properly, and invest in research for better efficiency.<sup>31</sup>

The Joint Chiefs apparently dismissed the recommendations without taking any action.<sup>32</sup> In April 2007, after several years in Iraq illustrating the drawbacks to the military’s appetite for fuel, the government consulting firm LMI analyzed DOD’s energy policies and made yet more recommendations.<sup>33</sup> The report noted three non-environmental reasons for DOD to improve its energy performance: dependence on foreign oil limits to the flexibility of U.S. power; fuel requirements limit the mobility and agility of U.S. forces; and the high cost of fuel crowds out other possible expenditures. LMI recommended that DOD incorporate considerations of energy use and requirements for logistics support due to energy use into its key planning processes and adopt a governance structure to monitor the Department’s efforts in this area. LMI also recommended that DOD adhere to the goals set out in Executive Order 13423 of reducing energy use by three percent a year. Though the Executive Order exempted the military’s tactical fleet vehicles, it did seem to apply to DOD’s operations in the United States.<sup>34</sup> Other notable recommendations included incorporating energy vulnerability analyses into the next Quadrennial Defense Review, a statutorily mandated analysis that requires DOD to create a strategic defense plan for the next 20 years.<sup>35</sup>

The recommendations of the LMI report are a good starting point for reducing DOD’s energy use.<sup>36</sup> LMI’s three non-environmental rationales for reduced energy use may be of particular importance for DOD: the mindset inside the Pentagon, as the head

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<sup>30</sup> DEFENSE SCIENCE BOARD TASK FORCE ON IMPROVING FUEL EFFICIENCY OF WEAPONS PLATFORMS, MORE CAPABLE WARFIGHTING THROUGH REDUCED FUEL BURDEN, (2001) <http://www.acq.osd.mil/dsb/reports/fuel.pdf>.

<sup>31</sup> *Id.*

<sup>32</sup> Robert Bryce, *Gas Pains*, ATLANTIC MONTHLY, May 2005, <http://www.theatlantic.com/doc/200505/bryce>.

<sup>33</sup> LMI GOVERNMENT CONSULTING, TRANSFORMING THE WAY DOD LOOKS AT ENERGY, Report FT602T1, (2007) [http://www.ofc.osd.mil/library/library\\_files/document\\_404\\_FT602T1\\_Transforming%20the%20Way%20DoD%20Looks%20at%20Energy\\_Final%20Report.pdf](http://www.ofc.osd.mil/library/library_files/document_404_FT602T1_Transforming%20the%20Way%20DoD%20Looks%20at%20Energy_Final%20Report.pdf)

<sup>34</sup> Exec. Order No. 13,423 § 2(f), 72 Fed. Reg. 3919 (Jan. 24, 2007) [http://www.ofee.gov/eo/EO\\_13423.pdf](http://www.ofee.gov/eo/EO_13423.pdf) “This order shall apply to an agency with respect to the activities, personnel, resources, and facilities of the agency that are located within the United States.” The order goes on to specifically exempt intelligence agencies, tactical vehicles, and some law enforcement fleets. EISA also makes no exception for DOD, though presumably the vehicle restrictions only apply, like the Bush Executive Order, to non-tactical vehicles.

<sup>35</sup> 10 U.S.C. § 118(a) (2008).

<sup>36</sup> LMI GOVERNMENT CONSULTING, TRANSFORMING THE WAY DOD LOOKS AT ENERGY, Report FT602T1, (2007) [http://www.ofc.osd.mil/library/library\\_files/document\\_404\\_FT602T1\\_Transforming%20the%20Way%20DoD%20Looks%20at%20Energy\\_Final%20Report.pdf](http://www.ofc.osd.mil/library/library_files/document_404_FT602T1_Transforming%20the%20Way%20DoD%20Looks%20at%20Energy_Final%20Report.pdf)

of the DSB study stated, is that “fuel efficiency is for sissies.” Reducing the fuel dependence makes sense not only for environmental reasons, but also because it will make the military more effective.

## **11. CREATE A NATIONAL CLIMATE CORPS**

### **RECOMMENDATION.**

We propose creating a “climate corps,” initially within Americorps and the Peace Corps. We also recommend that the President propose legislation as soon as possible that would create a new stand-alone Climate Corps.

### **DISCUSSION.**

The purposes of a “climate corps” would be to educate the public and to engage citizens in the fight against climate change. The climate-related work for the proposed group would include the following kinds of tasks: (1) educating children about climate change and what they can do about it, (2) helping poor individuals and households increase energy efficiency and educating them about tax credits and other government benefits for energy efficiency investments, (3) planting forests domestically and internationally, (4) assisting farmers to conserve energy and water, (5) promoting recycling programs to reduce waste, and (6) supporting organic community gardens.

Americorps and the Peace Corps are well-equipped to accomplish the tasks above domestically and internationally. Adding those tasks to the service organizations’ missions would be relatively straightforward, and it would avoid an immediate need to create a new administrative bureaucracy to plan and oversee a corps of volunteers. Americorps volunteers, for example, are already involved in educating children at low-income schools and already coordinate their activities with a variety of organizations that are in contact with low-income families. Volunteers could assist families in weatherproofing their homes or installing more efficient appliances, as well as informing them about the relevant tax and other benefits that can help pay for doing so. Americorps also performs outdoor conservation projects and could help replant forests as part of their greater efforts at environmental preservation. The Peace Corps also has experience with water conservation projects and helping farmers in the developing world achieve greater yields with less water.

To the extent we are limiting our proposals to ones which could be achieved without new legislation, we are not initially proposing to enlarge these programs to achieve even greater climate-related results. Initially, we are proposing a reorientation of projects within the existing programs. In some cases, in fact, the very same projects – say, increasing energy efficiency in low-income households – might be undertaken in the name of several different causes, only one of which is combating climate change. Nevertheless, we think this modest proposal could have two significant pay-offs. First, it could help to mobilize volunteers who are aching to be on the front lines of the fight

against climate change. It gives individuals one more reason to step up and work with the existing service organizations. Second, recognizing the multiple benefits of programs increasing energy efficiency, planting trees, and reducing water usage reaffirms a prime insight in the fight against climate change: actions we take to mitigate climate change have many other beneficial effects. A low-carbon “diet” is helpful not only because it reduces the risk of climate change, but because it will save money for energy-efficient and water-frugal households, create jobs for green firms, make for cleaner air and water, and so on.

Because of the large potential for service projects related to climate, we also recommend that the President seek legislation providing a clear statutory basis for a separate Climate Corps with a more ambitious agenda. Ever since it was established, the Peace Corps has provided an important outlet for American idealism, an invaluable learning experience, and significant benefits for people around the globe. We believe a Climate Corps could serve a similar purpose.

## **12. PRESIDENTIAL LEADERSHIP**

### **RECOMMENDATION.**

President Obama should use the bully pulpit of the presidency to encourage citizens to reduce the greenhouse gas emissions associated with individual and household choices.

### **DISCUSSION.**

According to a post-election poll by Zogby International, sixty percent of U.S. voters thought that addressing climate change should be a “high priority” of elected officials. It seems plausible to imagine that those same individuals would be receptive to a plea to make addressing climate change a high priority in their personal lives as well.

Researchers estimate that between thirty two and forty one percent of U.S. emissions of CO<sub>2</sub> are attributable to the residential and personal transportation sectors.<sup>37</sup> These figures include only individual and household activities that are under the “direct, substantial control of the individual;” they exclude activities related to employment and emissions related to the production of household goods.<sup>38</sup> If the U.S. emits approximately twenty percent of the world’s CO<sub>2</sub>, then activities within the direct and substantial control of individuals in the U.S. account for six and one half percent or more of the global total.

The CO<sub>2</sub> emissions associated with individual and household choices can be substantially reduced. What is more, they can be reduced with current technology, they can often be reduced at a cost savings, and they can be reduced without impinging on

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<sup>37</sup> Michael P. Vandenbergh & Anne C. Steinemann, *The Carbon-Neutral Individual*, 82 NYU L. REV. 1673, 1694 & n. 86 (2007).

<sup>38</sup> *Id.* at 1690.

comfort or convenience.<sup>39</sup> Of course, further reductions are possible if new technologies emerge, if the cost savings constraint is removed, and if individuals and households are willing to trade some current comforts for a small piece of the climate change action.

Widespread concern about climate change combined with significant opportunities for carbon reductions through behavioral changes at the individual and household levels gives President Obama a chance to induce carbon reductions outside of the usual government channels: through exhortation and example, and not only command and control. We believe, as set forth above, that command and control are essential, but we would like to see exhortation and example as well. Conservation is indeed, as Vice-President Cheney famously reminded us, a “personal virtue,” but perhaps the coming years can bring personal virtue back into style.

## CONCLUSION

We live, as President Obama said in his victory speech, on a “planet in peril.” In this essay, we have suggested several actions President Obama could take early in his presidency, in almost every case without new legislation, to begin addressing the most challenging environmental issue of our time. We make no claim to comprehensiveness. What we have tried, most of all, is to show the broad range and eminent sense of the options our new President will have available to him, from the very beginning of his administration.

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<sup>39</sup> Gerald T. Gardner & Paul C. Stern, *The Short List: The Most Effective Actions U.S. Households Can Take to Curb Climate Change*, 50 ENVIRONMENT MAGAZINE 12 (Sept./Oct. 2008).