



Institute for 21st Century Energy
Solutions for Securing America's Future

Blueprint: Reduce the Environmental Impact of Energy Consumption and Production

Reduce the Environmental Impact of Energy Consumption and Production

We must address the impact of our growing energy consumption on the environment and climate, while recognizing that any approach must be both economically viable and environmentally effective. We must not set targets for which technology does not yet exist or which threatens major economic displacement. We must give industry a predictable investment climate and incentives for innovation in clean energy. Costs and benefits must be transparent to consumers. We must commit to a course that promotes global participation while considering the priorities of the developing world.

Climate change is a significant global environmental issue. Increasing global greenhouse gas (GHG) emissions are largely, but not exclusively, related to the production and use of fossil fuels. Carbon dioxide (CO₂) emitted from the burning of fossil fuels accounts for roughly 55% to 60% of global GHG emissions.

Therefore, climate change should be addressed as part of an integrated agenda that enhances energy security, maintains economic prosperity, reduces pollution, and mitigates GHG emissions. In the climate change debate, energy is viewed as the problem. In reality, affordable energy provides a solution to climate change because it sustains the economic growth necessary to drive technology change and environmental protection. History has shown that poor

economies do not have the resources to make protecting the environment a priority, but vibrant economies do. A smart energy policy can capitalize on this dynamic, providing clean energy to power economic growth and poverty eradication across the globe.

Achieving our energy security goals through greater efficiency and a highly competitive marketplace of energy options can reduce GHG emissions.

Encouraging greater energy conservation and efficient use of all forms of energy (including fossil fuels) and diversifying energy supplies (through greater use of nuclear, wind, and solar power; biofuels; flex-fuel and plug-in hybrid vehicles; clean coal; smart grid; and other technologies) make sense from both an energy security and an environmental perspective (Figure 2). Our focus, therefore, should be on policies and technologies that produce more of these win-wins.

The pursuit of GHG emission reductions should not, therefore, occur in isolation from efforts to address energy security and economic growth. Meeting our energy security challenge—through greater energy efficiency and conservation, diversification of supply, and application of advanced technologies—can complement efforts to reduce GHG emissions. Nevertheless, we cannot ignore the tensions that do exist between energy security and climate change policies. Fuel switching from coal to natural gas in the power sector can lead to GHG reductions, for example, but it is appropriate to ask what the cost impact would be and what the implications would be for our long-term energy security. Balancing these and other issues cannot take place through different, unrelated administrative processes using statutes and authorities, such as the Clean Air Act, Endangered Species Act, National Environmental Policy Act (NEPA), and Clean Water Act. These laws were not designed for and are ill suited to address the complexities of reducing GHG emissions. Rather than compound the present ambiguity, we need to increase the regulatory certainty businesses are seeking. Issues of such importance need to be debated and resolved legislatively by the Congress and the President and in a way that incorporates our desire for abundant and clean energy. Moreover, consumers and businesses need and expect a candid assessment of the costs and benefits of any legislative proposal.

We also need to take stock of existing trends in GHG emissions and existing climate policies and regulations. U.S. net total GHG emissions today stand at about 14% above their level in 1990. Over the 1990s, net emissions grew 17%; however, from 2000 to 2006, net emissions declined about 3%.

Energy-related CO₂ emissions—which account for about four-fifths of gross GHG

emissions and are the more relevant metric for this energy policy Blueprint—have fared about as well. After rising 17% from 1990 to 2000, U.S. CO₂ emissions from energy grew just under 1% between 2000 and 2006 (Figure 3).

Energy-related CO₂ emissions intensity, a measure of emissions per unit of GDP, continues to improve. Throughout the 1990s, emissions intensity improved at a rate of about 1.7% annually; since 2000, intensity has improved by about 2.2% annually. We should look to accelerate these trends so that emissions growth slows even more rapidly, leading to a peak in emissions and absolute declines thereafter.

There are many policies already in place that will help us do this. With the enactment of EPA₂₀₀₅ and EISA₂₀₀₇, the climate policy space has been populated with an array of different tools, programs, and mandates. These include more than \$11 billion in tax incentives to stimulate efficiency and greater use of clean energy technologies over the next 10 years; a new loan guarantee program that has \$42.5 billion in authority to support clean energy projects that reduce GHG emissions; new renewable fuel mandates for cars and trucks that reach 36 billion gallons annually by 2022; increased fuel economy standards for vehicles to 2020; new appliance and equipment standards; new lighting standards; and new energy standards for federal facilities.

The impact of these laws in reducing emissions is seen in changes in DOE's Energy Information Administration (EIA) projections of CO₂ emissions from fossil fuel use just before and since EPA₂₀₀₅ and EISA₂₀₀₇ were signed into law (Figure 4). The most recent projection shows CO₂ emissions in 2030 nearly 21% below the comparable level based on emissions growth rates in the Annual Energy Outlook (AEO) for 2005, and cumulative emissions avoided from 2005 to 2030 of about 26 gigatons of CO₂. We have made, and should continue to make, considerable progress in limiting GHG emissions.

Additional policies, including those that attach an implicit or explicit value on certain air emissions, should give industry a more predictable and favorable investment climate, promote innovation in clean energy, and provide incentives to address the barriers and business risks associated with adopting advanced new technologies. Climate policies must not provide new windfall revenue to the government.

Energy efficiency and conservation provide the first and most cost-effective

ways of reducing emissions and should feature prominently in climate change policy. Advanced technologies—such as carbon capture and storage, advanced nuclear power, renewables, smart grid, and others—will be needed on a vast scale to eventually reduce emissions significantly. Therefore, it is important that policies and goals not get ahead of the technologies needed to meet them. In other words, we cannot set targets for which technology options do not yet exist.

State policies also need to be reconciled with federal efforts. California's proposal for a low-carbon fuel standard for vehicles, which several other states could adopt, is an example. Federal policy should not be driven by any state or group of states. Congress should make it clear that any such state fuel requirements will be satisfied by meeting federal fuel requirements.

Additionally, we should learn from the experience of other countries, especially the European experience with the European Trading System, about what works and what does not. We must promote global participation and give appropriate consideration to the priority the developing world places on economic development. A new international arrangement that puts U.S. industry at a competitive disadvantage will simply shed industries and jobs, sending their related emissions overseas, which will do nothing to protect the environment.

We also must continue to protect the air we breathe. As our understanding of the basic science related to air quality continues to progress, we must ensure that decisions about air quality keep pace with science and our standards remain protective. Accelerating air quality improvements will be made easier by many of the measures and strategies to address concerns about GHG emissions. Regulators have an opportunity to reduce redundant, burdensome air pollution regulations without sacrificing air quality.

The 2005 Clean Air Interstate Rule (CAIR) was designed to bring eastern states into compliance with new federal air quality standards. CAIR would be implemented in two phases, and it would employ an innovative regulatory approach to cut sulfur dioxide (SO₂) and nitrogen oxide (NO_x) emissions by 73% and 61%, respectively, from the power sector. The plan, which was adopted by 28 eastern states with the broad support of business, labor, and environmental groups, would reduce compliance costs through an interstate trading system and save energy consumers billions of dollars.

However, in July 2008, the U.S. Court of Appeals for the D.C. Circuit threw out the CAIR rule. If this decision stands, the Environmental Protection Agency

(EPA) will have to start from scratch and rewrite the regulation. States in the meantime will have to develop and adopt new statewide plans for SO₂ and NO_x emissions reductions, which may not be adequate after EPA finalizes the federal regulation. To achieve these emissions reductions in the absence of CAIR, states would have to cast a much wider regulatory net, including power plants and industries in neighboring states. Not only would this jeopardize economic growth and expansion, it would delay investment in and deployment of clean coal technologies. States and utilities need regulatory certainty. Congress could solve this by legislating a mechanism to address the issues and concerns that CAIR was originally intended to resolve, and Congress should do so now.

the latest

Blog



Jul 22 2015

The Misleading Response to Our New Grinding to a Halt Report

By: Matt Letourneau

This morning, the Energy Institute released [a new report detailing the impacts](#) of EPA's proposed ozone regulations on transportation projects in the Washington, D.C. region. We were joined by leading advocates such as AAA Mid Atlantic, Suburban Maryland Transportation Alliance, and the Northern Virginia Transportation Alliance.

The response from environmental groups was swift and aggressive: deny the problem. Nothing to see here; move on.

Multimedia



Jul 22 2015

Grinding to a Halt: Fact Sheet

DC is ranked as the 2nd worst city for drivers. To make matters worse, transportation projects could soon be grinding to a halt under the EPA's proposed ozone rules. <http://bit.ly/1HBuzPU>

Hate traffic on I-66: it could get worse with EPA's ozone regulations. Your commute could soon be grinding to a halt. More details here: <http://www.energyxxi.org/grinding-to-a-halt>
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BACK TO TOP



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