

Attaining Productive Harmony in Environmental Policy in the 21st Century

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Introduction

Over the last several decades, we have made great progress in our understanding of our natural world, improving public health, and providing for a better environment. The decades ahead will deliver even greater progress. Today I would like to reflect on that progress, what we in the Bush Administration are doing to build on it, and offer some ideas for how to sustain this progress in the years ahead both here and abroad.

I am honored by and would like to thank Paul Portney and Resources for the Future for the invitation to speak today. Some of you may not know that Paul is an alumnus of the Council on Environmental Quality. For my part, I am an ardent alumnus of sorts of RFF's brown bag lunch series on environmental policy. Then and now, Paul and the fine organization he leads are at the center of and objective contributors to the process of addressing some of most challenging and intriguing matters of environmental protection and resource economics. One of the more notable recent examples of this is Paul's leadership of the National Academy of Science panel evaluating the present and the future of the Corporate Average Fuel Economy program. The most tangible evidence of the importance and usefulness of this work is that a copy resides dog-eared on a bookcase near my desk, and in similar prominence (and condition) on bookcases in the offices of senior policy makers at the Department of Transportation, NHTSA, EPA, OMB, and the National Economic Council.

Our Recent Era of Environmental Accomplishment

We have come far in protecting our environment since the Industrial Revolution catapulted this country into the new era of manufacturing and global trade. 100 years ago, odds were that I would not have lived long enough to speak to all of you today. Yet, the new technologies that have expanded the U.S. economy since the 1800's have also enabled us to find and implement sound environmental solutions – solutions that have brought significantly cleaner air, land and water – and healthier Americans, living longer lives, with increasing economic and social opportunity.

Let's take a look at some of the more compelling results.

Last year, EPA's 2002 Air Quality Trends Report delivered the extremely positive news that over the past 30 years, air pollution from the six major pollutants decreased by 48 percent, even as our population grew 39 percent, our energy consumption increased 42 percent, and the economy grew 164 percent.

Our citizens enjoy one of the safest and cleanest water supplies in the world. In just three decades we doubled the number of our citizens who benefit from modern wastewater treatment, from 86 million in 1968 to 165 million citizens today.

In the wake of celebrating the 30th anniversary of the Clean Water Act, we have dramatically improved the overall health of our marine waters, lakes, rivers, streams, and wetlands. The federal government has cooperated with states, tribes, local communities, businesses, and concerned individuals to reduce significantly

all forms of water pollution, making our waters better suited for recreation and other pursuits and more hospitable to aquatic life. We are at the point where you rarely hear about industrial water pollution as our efforts now turn to the more diffuse challenge of addressing non-point source pollution. And we are close to achieving our goal of halting overall wetlands loss; hopeful that in the near future we will begin increasing the overall function and value of our wetlands.

We have cleaned up nearly 900 of what are now “run-of-the-mill” Superfund sites. We are now turning to the greater challenge of tackling the much larger and more complex sites. We have found ways to accelerate the cleanup of some of our largest and most contaminated federal facilities, working to do in seven years what was scheduled to take 30. Our hazardous waste management law, RCRA, while still a mind-boggling exercise at times, is largely working. We are united in going beyond Superfund and putting a major new emphasis on cleaning up thousands of Brownfields sites – sites that arguably affect more people and communities, more directly, and hold greater promise of renewed opportunity.

At the international level, in advance of the 2002 World Summit on Sustainable Development, the United Nations issued a report that largely went unnoticed outlining significant advances around the globe in the majority of health, environmental and social indicators selected for analysis.

This progress stems in part from the common political ground that has produced an abundance of statutes, regulations, and programs at the international, federal, state and local levels. This massive block of law now reaches virtually every dimension of human activity. In one sense, we have the luxury in the United States today that our policy discussions are largely about ways to refine, shape and sculpt this block.

More importantly, this progress has resulted in an increased number of more sophisticated tools for the environmental policy toolbox, such as government codes and standards, partnerships, leadership programs, voluntary performance programs, incentives, environmental management systems, consensus standards, product stewardship, by-product synergy networks, environmental due diligence, workplace best practices, and the list goes on. Among the more remarkable and overlooked developments in recent years is the rise of multinational organizations adopting worldwide plant construction, operation and management standards with specific environmental performance requirements – even in places where no legal mandate exists. The combined power of the market, brand enhancement, and trade, in the context of a strong commitment to shared values, is proving to be the engine of environmental progress that many forecast.

Most importantly, this progress is the product of the time, effort, and investment of countless individuals. There are now hundreds of thousands of professionals dedicated to environmental protection – in government, companies, consulting firms, academia, think tanks, and environmental interest groups (with a remarkable amount of mobility between them). When I went to law school, I was excited that it offered a course dedicated to environmental law. The Web site EnviroEducation.com estimates that there are now 1,637 environmental schools in the United States alone – either independent institutes or schools and programs within major universities. And we are now in the midst of a dramatic and fundamentally important expansion of the circle of responsibility and accountability for environmental protection beyond those with “environment” on their business cards.

We as a society essentially have validated a new axiomatic understanding of the path of this progress.

This diagram depicts the trajectory we can now expect between economic and technological advancement and environmental progress. It evokes a formulation different from the classic expression -- that “the economy and the environment can go hand in hand.” Rather, it makes clear that as a society advances on the affluence curve, continued economic growth is a necessary condition for accelerating and increasing environmental progress.

Accordingly, the President's approach to environmental progress is predicated on the notion that economic growth is the solution, not the problem, for the very straightforward reason that a nation that grows its economy is a nation that can afford the investments and new technologies that make further protection possible. I think most Americans know from their own experience that newer is usually cleaner, more efficient, safer, longer lasting, and uses fewer resources to deliver better performance.

So what does all this mean in terms of future progress? We have very good reason to be very optimistic about both our nation's future environmental progress and about the opportunity to improve the environmental profile in other nations that choose a similar path of economic growth and opportunity.

I therefore find it curious that the nature and tone of our public discourse on environmental policy, particularly at the national level, seems stuck in time and out of proportion to the common ground upon which real progress is being made.

Julian Simon summed it up best when he wrote: "This is my long-run forecast in brief: The material conditions of life will continue to get better for most people, in most countries, most of the time, indefinitely. Within a century or two, all nations and most of humanity will be at or above today's Western living standards. I also speculate, however, that many people will continue to think and say that the conditions of life are getting worse." Simon's point is reinforced by polling which shows that many Americans today believe air pollution and other forms of pollution are getting worse. Yet, many of these same people will acknowledge, as they must, that things have improved in their own communities. This may be akin someone reporting their dislike of Congress, but affection for their own Congressman.

A growing cottage industry of writers is echoing and expanding on Simon's core point, including Bjorn Lomborg, Steve Hayward, popular author and screenwriter Michael Crichton, and most recently Gregg Easterbrook, who has thoughtfully delved deeper into the possible root causes of such dissatisfaction in his recent work "The Progress Paradox." Each of these writers celebrates the progress we have made and the progress to come. Ironically, the negative dynamic these writers are seeking to understand and mitigate, replicates itself in dismay and deep disdain that some have directed at their insight and effort, then compounded by the "us vs. them" accounts of such exchanges in the media. The same could be said of some at the other end of the spectrum who would use our progress to date as reason for not going further.

I raise this point for a very pragmatic reason. If we are unable to acknowledge and celebrate our success, it makes it all the more difficult to inspire and motivate people to find common cause in tackling the increasingly difficult and complex challenges that lie ahead. We know these issues are often emotional. We know these issues have and will always spark sharp differences of opinion and generate a vigorous discourse. We know these issues will always require a sensible balancing of social objectives, economic objectives, and environmental objectives. Yet, we also know that those constructively engaged in developing sensible solutions will produce sensible solutions.

The Foundation for the Period of Remarkable Progress That Lies Ahead

So where are we going next? The Bush Administration is committed to building on what has come before by launching a wide array of initiatives to secure the next generation of environmental progress.

In doing so, we are committed to finding new and improved ways to achieve our shared environmental objectives while working to reduce the potential for conflict along the way.

Before turning to some specific examples, I'd like to highlight a handful of core concepts that guide our policy development and its implementation. Then I will walk through a few bundles of policies to give you a feel for how we try to put these concepts into practice.

Core Drivers of Bush Administration Environmental Policy

First and foremost, we are focused on results. Is the air cleaner? Is our water better protected? Are contaminated lands being cleaned up? Are our parks well-maintained and managed?

All too often, rather than focus on outcomes and performance, progress is measured in terms of the number or type of governmental programs we have or in terms of how much federal taxpayer money is spent. You are sure to see this dynamic play out once again in the inevitable commentary on the President's FY 2005 budget. For us, how much is being spent is not nearly as useful a measure as how well. That is why we are working to better define measurable performance objectives in order to better evaluate the effectiveness of existing programs and the merit of new ones.

Second, our decisions must be based on sound science and quality data.

On its face a logical and seemingly unobjectionable concept, yet it somehow remains fraught with controversy, perhaps largely because capturing the uncertainty in our science is just as important as capturing that which is known. To the extent the last 30 years has built enormous capacity for risk assessment – i.e. identifying an increasing array of potential concerns—our effort going forward must be to enhance our methods of risk management to prioritize and deliver sensible responses.

Third, we place a strong emphasis on innovation in technology and in policy. The President is most passionate and optimistic on this central issue.

In his 2003 State of the Union Address, President Bush articulated a prediction and a challenge: “In this century, the greatest environmental progress will come about not through endless lawsuits or command-and-control regulations, but through technology and innovation.” Creating an economic and regulatory environment that support the development and deployment of transformational new and cleaner technologies is critical to securing the next generation of environmental progress.

We also need innovation in policy to take greater advantage of American ingenuity and technological innovation.

The modern environmental movement at the federal level started with a relatively simple, though quite consequential mandate to create environmental blueprints to aid government decisions – i.e. the NEPA review process. In the years that immediately followed, we adopted policies that largely depended on regulatory hammers to get the job done. Since then, however, we have forged and amassed the wide array of tools that I catalogued earlier. We can and must be much more discerning in choosing the tool or combination of tools that will best enable us to fulfill policy objectives, including taking a hard look at whether an outdated tool should be replaced with a more modern approach. At the same time, we are working harder to look beyond the borders of environmental policy to other policy areas where shared objectives can be advanced in a way that runs in harmony with, rather than counter to the broader objective of such policies. One example is the conservation title of the Farm Bill that I will discuss shortly.

Fourth, we are fostering more local collaboration in order to develop more local solutions. We place a strong premium on understanding the impact of a policy on the people directly affected by that policy.

The President, a former governor, frequently reminds his listeners that not every solution to every problem lies in Washington, D.C. Some of the best ideas come from those who deal with a particular issue or problem day in and day out, people with hands-on experience and the knowledge of local circumstances. When people are engaged at the local level in problem solving, they tend to take on ownership for sustaining the solution.

This is the practical essence of federalism. While the last 30 years established the importance of local input in decision-making, the next 30 will be about improving the process of local involvement.

Fifth and finally, we look for solutions that will harness and amplify America's ethic of personal stewardship and responsibility.

The talent and know-how of the burgeoning class of environmental professionals is important. But the greatest opportunity for progress in the years ahead will come from fostering accountability and action by the non-environmental professional. This requires breaking down, rather than further erecting the silos of environmental policy. While it is great that there are so many environmental schools, wouldn't it be even better if every business school and engineering school integrated exposure to environmental issues and norms into the relevant management or operational curricula? This requires translating complex requirements into more easily understood and practical actions for the non-expert. The increased use of environmental management systems is already transforming workplaces to this end. We are also working to expand the circle of opportunities for volunteers, partnerships, and action-oriented education. Often it is as simple as getting the right information, to the right people, at the right place, at the right time, to produce the right action. The best and very effective example in my own household are the homemade and wonderfully creative stickers that my daughter Grace has posted over our faucets and switches reminding us to conserve water and turn off the lights.

The concepts I have described find expression, application, and refinement in different ways, whether in EPA Administrator Mike Leavitt's environmental management philosophy of Enlibra, or Interior Secretary Gale Norton's 4C's – communication, consultation and cooperation, all in the service of conservation. The commonality of these norms is a testament to their strength.

Major Environmental Accomplishments of the Bush Administration

I'd now like to walk through a few examples that demonstrate how we are advancing President Bush's environmental philosophy and putting these norms into action – with remarkably strong public and bi-partisan support.

Helping to Revitalize Urban Communities

One of today's most compelling challenges is the effort to restore the health and vitality of our cities. So what is the environmental dimension to this challenge? Remarkably, two well-intentioned environmental policies converged to impose significant barriers to new investment and growth in our urban centers. The first was the prospect of Superfund liability for taking on the task of redeveloping abandoned industrial sites and second is the prospect of regulatory uncertainty and high cost of retaining or expanding existing facilities, or siting and operating new facilities to meet increasingly stringent and important health-based air quality standards for smog and fine particles. As a consequence, manufacturing and other businesses understandably locate elsewhere, sometimes in never-developed "greenfields" locations in other areas of the United States and contributing to sprawl -- sometimes outside the country. The President's Brownfields and Clear Skies Initiatives, along with new interstate air quality and diesel pollution regulations, are designed to substantially help turn this situation around while still meeting public health and environmental protection objectives.

Looking first at Brownfields, EPA estimates there are hundreds of thousands of "brownfields" across the country. These areas once supported manufacturing and commerce, and are now abandoned - "adding nothing of value to the community, and sometimes only causing problems," as the President noted. Many public and private investors are interested in redeveloping these sites. As an indication of just how massive the private investment opportunity could be, the U.S. Conference of Mayors estimated in 2002 that the cleanup and redevelopment of brownfields could generate \$2.4 billion in tax revenues alone.

Accordingly, the Small Business Liability Relief and Brownfields Revitalization Act made important reforms to the Superfund program, granting liability protection for prospective purchasers, contiguous property owners, and innocent landowners and authorizing a billion dollars in federal funding for state and local programs that assess and clean up brownfields. Congress passed the legislation -- unanimously.

Now let's look at the air pollution side of the equation. After taking office, the Bush Administration embraced the tough new air quality standards for smog and fine particles adopted by the Clinton Administration and completed the process of defending the new standards in court. Accordingly, as a matter of law and the will of the Bush Administration, the nation is on a course toward new, massive, and mandatory cuts in air pollution. These reductions will prolong thousands of lives and help thousands of Americans with asthma and other respiratory illnesses relieve suffering and attacks triggered by pollution. These reductions will also bring improvements in visibility to some of the most popular national parks, and will make great strides in protecting the health of our ecosystems by reducing acid rain and nitrogen deposits.

However, the way the Clean Air Act generally works is that the federal government sets the new air quality standards and declares which counties fail to meet them. The burden is then on the states and counties to determine where the pollution reductions will come from, subject to EPA's approval. When you get the reductions needed to meet the standard, you are done. Because the new levels are so stringent and difficult to meet, many states will likely blame some of their problem on pollution transported from other states and petition EPA to go through a lengthy process of sorting it out and then sending it back to the states to complete their plans. The whole process is extremely complex and takes years before first action, even without delays caused the inevitable litigation.

Without going into detail, this slide illustrates the process with an emphasis as to how it would apply to power plants. Having tortuously weathered the process in the 1990's, we know that the process can work, just as one of those Rube Goldberg contraptions will. But for local governments it makes sensible, long-range planning for infrastructure development and attracting new businesses and jobs virtually impossible.

The President experienced this process as Governor of Texas. He charged his Administration with finding a more sensible way to help the states meet these new standards. One major way to simplify the puzzle is to expand the most successful program of the Clean Air Act – the market-based Acid Rain trading program – and set a mandatory national cap that cuts power plant pollution by 70 percent. The cap is permanent and cannot increase even as new power plants come on line. This approach will cut pollution further, faster, cheaper, and with more certainty than current clean air programs by using an emissions trading program that creates an economic incentive to reduce early. By clearly establishing a long-term \$50 billion market for clean coal technology, it also creates a strong incentive for the private sector to develop and install the newest technologies to control emissions from coal-fired power plants, rather than rely mainly on fuel switching to natural gas as the main compliance option. It replaces a cycle of endless litigation with rapid and certain improvements in air quality. The pollution caps were set with the twin goal of helping communities meet health-based air quality standards without significantly increasing consumers electricity bills and enabling manufacturers to expand and grow businesses – creating jobs.

The other major way to simplify the process is to more strictly regulate diesel fuel and new diesel truck engines, and for the first time to control pollution from non-road diesel engines, such as heavy construction equipment. The non-road diesel proposal was the product of extensive consultation with stakeholders to narrow issues and move toward consensus before issuing the regulatory proposal. We are hopeful that this process will forestall or at least narrow the scope of litigation on the final rule.

And now look at the results:

Under current law, approximately 129 counties do not meet the new standards for fine particles. For businesses with any kind of a pollution profile or significant energy needs, these counties in red essentially

become “don’t invest here zones” if the traditional Clean Air process is followed. However, with Clear Skies and the new diesel rules, 111 counties will be able to meet the stringent new fine particle air quality standards. Only 18 counties will need to take further steps to meet the standards.

The same holds true for ozone. Under current law, approximately 290 counties do not meet the standard for ozone. Yet, with Clear Skies and the new diesel regulations, 263 counties nationwide will meet the standards; only 27 counties will need to take further steps to meet the standards.

We are working closely with Congress to pass Clear Skies legislation, but as you know such legislation can take a long time. That is why last month, the Bush Administration decided to use existing regulatory authority and propose an Interstate Air Quality rule that will result in the deepest cuts in sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions from eastern power plants in more than a decade.

Either way, we are dedicated to a course of action that delivers air quality in a way that reduces the complexity, the conflict, and the uncertainty associated proceeding under the status quo.

Sustaining and Diversifying Rural Economies and Improving the Environment

The next bundle of challenges largely occurs in our rural communities. Whether it is addressing the impact of non-point source run-off on water quality, responding to the need for wetlands and ecosystem restoration, helping to preserve species, or finding ways to cost-effectively sequester greenhouse gases, our nation’s farmer and ranchers figure prominently. Efforts to impose more classic regulatory approaches to address these issues expose time and again the practical, economic, and political difficulty of completing, let alone sustaining such measures. That is why, very early in the Administration we decided to look at these issues from the opposite perspective: a way that was certain to evoke a more meaningful response, that would help align our agricultural policy with our environmental policy and that would tap into the stewardship potential inherent in the agricultural community. Accordingly, the Administration affirmatively pushed for, and Congress resoundingly enacted, an historic expansion of the incentive-based Farm Bill’s conservation programs to roughly \$40 billion.

President Bush is fond of noting that “every day is Earth Day when you own your farm, when you’re working the land.” The Farm Bill provides the needed incentives for good conservation practices, by these good stewards, on their working lands. Among the programs is the Environmental Quality Incentives Program (EQIP), which promotes agricultural production and environmental quality as compatible national goals, requiring participants to implement structural and management practices on their land to meet environmental goals. Other programs are aimed at nearly doubling to two million acres the amount of wetlands protected and enhanced on private land. Still others focus on conservation of natural resources and habitat.

We are committed to dozens of other programs to reinforce the massive benefits of the Farm Bill conservation programs, including protecting millions of wetlands acres through the North American Wetlands Conservation Act (NAWCA) and significant expansion of the Land and Water Conservation Fund programs, including the Department of the Interior’s Cooperative Conservation Initiatives that provide incentives to protect and preserve our lands, waters and wildlife while we productively the land. These will link up, for example, with efforts being undertaken by public land managers, including the Department of Defense under new authority that enables them to create conservation buffer zones around their facilities in partnership with states and conservation organizations. Underlying all of this, is a growing array of planning tools, such as EPA’s watershed planning grants, which will help guide the deployment of such incentives.

The product of this conservation and restoration is an increase in opportunities for a wide array of recreational and cultural opportunities in order to satisfy a growing interest and demand for such experiences by an increasingly urban and more affluent society, adding to local economies.

Sensible Forest Management on Public Lands

Forestry is another critical component of sustaining rural economies. Here too, well intentioned, but ultimately misguided natural resource policy proved highly problematic. Decades of an unyielding policy of fire suppression has resulted in the unnatural buildup of dense amounts of underbrush and trees. What you typically see are several hundred trees per acres where historically one would expect several dozen. The trees are also much smaller because of crowding and competition for sun, water and nutrients) and the thick tangle of undergrowth. As a result, conditions are ripe for catastrophic fires, like those experienced in California, Arizona, Colorado and Oregon over the past two years, that burn hotter and faster than most ordinary fires, and are much more difficult, dangerous, and costly to combat. Our air quality is reduced, affecting the health of many who do not live near the fires, and with that threat also comes reduced visibility. Habitat for endangered species and other wildlife is destroyed. And the overstocked conditions make these forests and rangelands much more vulnerable to disease and insect attacks that can take down entire forests. In 2002, 88,458 fires burned roughly 7 million acres and caused the deaths of 23 firefighters. Last summer, the fires in California alone cost \$250 million to contain and claimed the lives of at least 22 civilians.

The Healthy Forests Initiative grew out of a comprehensive, multi-year collaboration with Governors, local citizens and interest groups, forest professionals, and scientists to solve this problem and establish shared performance goals:

- to protect our communities,
- to protect municipal water supplies from run-off caused by fires,
- to restore and protect endangered species habitat,
- to reduce the risk of losing entire forests to insect infestation or disease, and
- to help mitigate the dramatic air quality and human health impacts of catastrophic fires.

Compelled by two years of some of the worst catastrophic fires in American history, Congress passed Healthy Forests legislation and the President signed the bill into law last month. True to its name, the Healthy Forest Initiative is one of the largest ecological restoration programs enacted in years. Yet again, one of the most consequential and seemingly controversial pieces of environmental legislation actually enjoyed significant margins of bi-partisan support, including legislators whom many would place on opposite ends of the political spectrum, belied by the common ground they found here.

One of the more innovative and often misrepresented features of the initiative is stewardship contracting authority. The forest restoration work essentially involves the U.S. government hiring private contractors to thin the unnaturally overstocked stands of trees. Prior to the initiative, most of this material was of limited or no commercial value so the taxpayer footed the bill. The new authority enables long term contracting with an assurance of a much larger steady supply of thinned material. The amount, duration and certainty of supply should be sufficient to encourage investment in retooling mills to make wood products from the smaller trees and lower grade material and to foster other markets such as renewable biomass energy. In sum, we can meet ecological performance objectives, sustain and create new jobs and economic opportunities in forest-based rural economies, and do so in a manner that gets more work done at less cost to the federal taxpayer.

Pursuing Common Ground on Climate Change

The Administration is now well along in implementing a comprehensive climate change strategy that is predicated on advancing the science, advancing technologies and mitigating the growth of greenhouse gas emission. Details of which can be found on our agency websites. The basic arguments against U.S. ratification of Kyoto are widely shared, and reflected in the 95 – 0 vote on the 1997 Senate resolution opposing the Kyoto framework. First, the targets for the U.S. would cause significant economic harm and a

loss of millions of jobs. Second, the treaty did not require meaningful participation by the world's developing countries, a number of which will experience rapid growth in coming decades.

An added concern of great interest to me is the unstated, yet implicit, connection between the two arguments: the prospect that a significant portion of the U.S. jobs would not actually just disappear, they would simply go to other countries that have no obligations under the treaty. Any associated decline in U.S. greenhouse gas emissions would be offset by a corresponding increase in the other country. With lower energy efficiency and productivity rates in many of these countries, it is conceivable that overall greenhouse gas emission would actually go up. A result, I imagine, few would favor.

Climate change policy, then, needs to rely on and be more realistic about several key factors:

Curves such as the one depicted in this slide appear frequently in policy and technical discussions about climate change. The most constructive path to progress on climate change in any region committed to economic growth and/or projecting population growth should first begin with slowing the increase in emissions, and then, as the science justifies, stopping it, and then reversing it. For this reason, the President committed the nation to a goal of reduce American greenhouse gas intensity by 18 percent over the next 10 years – which would prevent more than 500 million tons of carbon emissions through 2012. This near term objective is supported by the President's 2004 budget which seeks a 15 percent increase in funding for science and technology programs as well as \$4.2 billion in tax incentives to buy hybrid cars, and encourage the use of wind, solar and geothermal energy, and energy efficient technologies. There are more than 60 federal (and many more state) programs – some mandatory, some incentive-based, and some voluntary – that will help to slow the growth in U.S. greenhouse gas emissions over the next decade and beyond.

Second, we need to operate within the practical, political, and technological realities of our domestic greenhouse gas emissions profile illustrated on this next chart.

I often hear the cry: industry is not doing enough to cut their greenhouse We must acknowledge that greenhouse gas emissions directly and indirectly attributable to the industrial sector have actually declined since 1990. The rise in greenhouse gases over the last decade is the result of a growing number of people in more and larger homes, in expanding office buildings, driving more and longer distances in their vehicles to work and play. Emissions reductions attributable to these sectors will largely come about through changes in individual behavior and turnover of capital stock on generational time frames taking advantage of technological advances that reduce energy consumption. Our often disparaged industrial producers are the ones who will develop and market the new building materials, transportation systems and other products necessary to effect such change.

That said, the industrial sector should and is now demonstrably committed to making further progress. In our new Climate Vision program, twelve major industrial sectors and the membership of the Business Roundtable have made specific, performance-based commitment to work with the Departments of Agriculture, Energy, and Transportation, and the EPA to reduce greenhouse gas emissions in their sector over the next decade. EPA's Climate Leader's programs encourages individual companies within these sectors to lead the way in developing long-term, comprehensive climate change strategies. The number of major companies now participating is 50 and rising.

Third, by understanding global profiles of greenhouse gas intensity, we can find more constructive ways to partner with the developing world.

While it is important to measure overall progress in terms of absolute greenhouse gas emissions, from a policy perspective we are better off orient our efforts toward measuring performance in terms of greenhouse gas intensity – that is, greenhouse gases per unit of economic output. Such a measure rewards strategies that produce greater efficiency and productivity that help accelerate economic growth. It helps align climate

policy (as well as air pollution policy for that matter) with the more dominant focus on economic policy imperatives important to every developing country, as it is here.

Fourth, we must concentrate our effort on and be realistic about the timelines for deployment of the transformational technologies that are central to making real and lasting strides.

I have already noted some examples of key near terms actions.

In the near to mid-term, through the FutureGen program, we will build a full-scale coal-fired power plant that is pollution-free and emits no greenhouse gases. This project will incorporate efficient power generation technologies and carbon sequestration to dramatically reduce air pollution and capture and store greenhouse gas emissions. We expect that FutureGen will help lead to the development of clean fossil fuel power plants all across the world and will allow this abundant and economic fuel source to continue producing energy without its traditional environmental side-effects.

In the mid-term, the President's Hydrogen Fuel Initiative and the FreedomCAR Partnership launched last year will develop hydrogen-powered fuel cells, a hydrogen infrastructure, and advanced automobile technologies, allowing for a new generation of hydrogen-powered vehicles with virtually no pollution or greenhouse gases. These initiatives provide \$1.7 billion to develop and fuel a new generation of hydrogen-powered vehicles. Not only will this impact industry, but this new innovation – a switch to a hydrogen economy – will address the pollutants each person contributes daily to the environment. And we're not far off. As the President said last year, "the first car driven by a child born today could be powered by hydrogen, and pollution-free."

In the long term, President Bush committed the United States to participate in the largest and most technologically sophisticated research project in the world to harness the promise of fusion energy, the same form of energy that powers the sun. If successful, this \$5 billion, internationally supported research project will advance progress toward producing clean, renewable, commercially available fusion energy by the middle of the century. Participating countries include the United Kingdom, Russia, Japan, China, and Canada.

Fifth, much can be achieved by building on the substantial common ground that exists among policies at the national level.

Once you step outside the dissonance of the treaty negotiations and look at what individual countries are actually doing to both combat air pollution and mitigate greenhouse gases, the diversity and scale of measures is remarkably similar, practical, and mostly economically rational. I think that is why we have had such success, albeit unheralded, with our numerous multilateral and bilateral efforts to deploy climate observation systems and collaborate on advanced energy and sequestration technologies highlighted above, as well as work on nuclear and renewable energy. We now have forged bilateral and multilateral agreements with countries representing 70 percent of greenhouse gas emissions.

Taken together, these multilateral energy research and technology initiatives add up to what can only be described as a long-term revolution in our national and global energy system. Not only will these technologies put us on a long-term path to managing the potential risks from climate change, but they will also ensure secure, reliable, affordable, and clean energy to power economic growth and development across the globe.

Where We Go From Here

We are in a wonderfully rich place in history where we actually argue less about "whether" or "what" we want to do to protect the environment, and more about "how to do it," "who will do it," and "by when." When the travails of the courtroom are being replaced by leadership and action in the boardroom. When

prescription and punishment are giving way to inspiration, innovation, information and integration to produce action.

This places us on the threshold of fully realizing the environmental policy that the Congress and President set out for the nation in the National Environmental Policy Act over 30 years ago, which is worth reflecting on in full:

The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.
NEPA Sec. 101 [42 USC § 4331]

This passage was ahead of its time then. Yet I hope I have given you a sense of the vitality of its themes today, in particular our collective aspiration for “productive harmony” which I selected for the title of my remarks today.

In order to achieve productive harmony, we must harness the power of economic growth, doing what we can to spur new investment is critically important to environmental protections. We must better integrate our environment objectives into other policy arenas. In other words, take the environment out of its silo and put it more directly where the planning, action, and money is. We must continue the work of constructing human networks at the national, state, and local levels, capitalizing further on our investment in information and the powerful new technologies through which we can share it. We must place even more of a premium on collaboration and consensus processes. Lastly, we need to simplify, simplify, simplify to better enable the environmental stewards out there to do what they do best. Produce real results.