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Kerry: On Eve of Rio+20, An Honest Assessment of Climate Change Challenge

WASHINGTON, DC – As world leaders meet this week for the Rio+20 United Nations Conference on Sustainable Development (UNCSD), Senator John Kerry (D-Mass.), Chairman of the Foreign Relations Committee, delivered a major floor speech today urging U.S. action to combat the threat of global climate change.

The conference, which takes place June 20 – 22 in Rio de Janeiro, Brazil, marks the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED) in Rio, which Senator Kerry attended along with almost every other conference held.

“Twenty years ago this month, a Republican President of the United States helped bring together all the world’s largest economies in Rio to confront the issue of global climate change. The President was unequivocal about the mission. George Herbert Walker Bush said simply, ‘The United States fully intends to be the world’s preeminent leader in protecting the global environment,’” said Sen. Kerry. “How dramatic and sad it is that twenty years later, shockingly, we find ourselves in a strange and dangerous place on this issue—a place this former President wouldn’t even recognize. When it comes to the challenge of climate change, the falsehood of today’s naysayers is only matched by the complacency of our political system... We should be compelled to fight today’s insidious conspiracy of silence on climate change—a silence that empowers misinformation and mythology to grow where science and truth should prevail. It is a conspiracy that has not just stalled, but demonized any constructive effort to put America in a position to lead the world on this issue, as President Bush promised we would and as Americans have a right to expect we will.”

Senator Kerry is the leading advocate in the United States Senate for action to address international climate change. In 2010, he formed a tri-partisan climate effort with Senators Lindsey Graham (R-S.C.) and Joe Lieberman (I-Conn.) to produce the “American Power Act,” comprehensive climate change legislation in the Senate. In 2009, the Senator traveled to China to urge leaders to join the upcoming “cap and trade” negotiations ahead of the UN Climate Summit in Copenhagen, where he helped forge a political agreement on global greenhouse gas reduction. He has also represented U.S. at international climate negotiations for two decades: Rio, ’92, Kyoto, ’97, Buenos Aires, ’98, The Hague, ’00, Bali, ’07, Poznan, ’08, and Copenhagen, ’09.

*Video of Senator Kerry’s floor statement is available [here](#) and [here](#)
<http://www.kerry.senate.gov/press/release/?id=99bb3f7a-cf20-4c1d-ae59-b9baedda1cb1>*

The Senator’s full floor statement, as prepared, is below:

Mr. President: Twenty years ago this month, a Republican President of the United States helped bring together all the world's largest economies in Rio to confront the issue of global climate change. The President was unequivocal about the mission. George Herbert Walker Bush said simply, "The United States fully intends to be the world's preeminent leader in protecting the global environment. We have been that for many years. We will remain so. We believe that environment and development...can and should go hand in hand. A growing economy creates the resources necessary for environmental protection, and environmental protection makes growth sustainable over the long term."

When he was asked about his own target for subsequent meetings of the global stakeholders, he could not have been clearer. He said the United States "will be there with specific plans, prepared to share, but more important, that others who have signed these documents ought to have specific plans. So I think this is a leadership role. We are challenging them to come forward. We will be there. I think the Third World and others are entitled to know that the commitments made are going to be commitments kept."

How dramatic and sad it is that twenty years later, shockingly, we find ourselves in a strange and dangerous place on this issue—a place this former President wouldn't even recognize.

Thomas Paine actually described today's situation very well. As America fought for its independence, he said: "It is an affront to treat falsehood with complaisance." Yet when it comes to the challenge of climate change, the falsehood of today's naysayers is only matched by the complacency of our political system.

It is well past time that we heed Thomas Paine's admonition and reaffirm the commitment made by the first President Bush. As a matter of conscience and common sense, we should be compelled to fight today's insidious conspiracy of silence on climate change—a silence that empowers misinformation and mythology to grow where science and truth should prevail. It is a conspiracy that has not just stalled, but demonized any constructive effort to put America in a position to lead the world on this issue, as President Bush promised we would and as Americans have a right to expect we will.

Mr. President, the danger we face could not be more real. In the United States, a calculated campaign of disinformation has steadily beaten back the consensus momentum for action on climate change and replaced it with timidity by proponents in the face of millions of dollars of phony, contrived "talking points," illogical and wholly unscientific propositions and a general scorn for the truth wrapped in false threats about job loss and taxes.

Yet today, the naysayers escape all accountability to the truth. The media hardly murmurs when a candidate for President of the United States in 2012 can walk away from previously held positions to announce that the evidence is not yet there about the impact of greenhouse gases on climate.

The truth is, scientists have known since the 1800s that carbon dioxide and other greenhouse gases trap heat in our atmosphere. With the right amount of these gases, the Earth is a hospitable place for us to live. But if you add too much, which is what we're doing right now, at a record pace, temperatures inevitably rise to record-setting levels. It's not rocket science.

IGNORING THE FACTS

Every major national science academy in the world has reported that global warming is real. It is nothing less than shocking when people in a position of authority can just say—without documentation, without accepted scientific research, without peer reviewed analysis—just stand up and say that there isn't enough evidence because it suits their political purposes to serve some interest that doesn't want to change the status quo.

Facts that beg for an unprecedented public response are met with unsubstantiated, even totally contradicted denial. And those who deny have never, ever met their de minimus responsibility to provide some scientific answer to what, if not human behavior, is causing the increase in greenhouse gas particulates and how, if not by curbing greenhouse gases, we will address this crisis. In fact, when one measures the effect of taking action versus not taking action, the naysayers' case is even more confounding.

Just think about it: If the proponents of action were somehow incorrect, contrary to all that science declares, but nevertheless we proceeded to reduce carbon and other gases released into the atmosphere, what is the worst that would happen? Well, under that scenario the "worst" will be more jobs; the opening of a whole new \$6 trillion dollar energy market with a more sustainable policy; a healthier population because of cleaner air and reduced expenditure on health care because of environmentally induced disease; an improved outlook for the oceans and ecosystems affected by pollution falling to earth and sea; and surely, greater security for our country because of less dependence on foreign sources of energy and a stronger economy. That's the worst that will happen.

And what if the naysayers are, in fact, wrong as all science says they are? What if, because of their ignorance, we failed to take the action we should—what is the worst then? The worst then, is sheer, utter disaster for the planet and all who inhabit it. So whose "worst" would most thinking people rather endure?

The level of dissembling—of outright falsifying of information, of greedy appeal to fear tactics that has stalled meaningful action now for twenty years—is hard to wrap one's mind around. It is so far removed from legitimate analysis that it confounds for its devilishly simple appeal to the lowest common denominator of disinformation. In the face of a massive and growing body of scientific evidence that says catastrophic climate change is knocking at our door, the naysayers just happily tell us climate change doesn't exist.

In the face of melting glaciers and ice caps in the Arctic, Greenland and Antarctica, they say we need to “warm up to the truth.”

And in the face of animals disappearing at alarming rates, they would have us adopt an “ostrich” policy and simply bury our heads in the sand.

Just last week, a group of state senators in North Carolina passed a bill that bans planning for rising sea levels when creating rules for housing developments and infrastructure in coastal communities. Jeffress Williams is the lead author of the U.S. National Climate Assessment Report. Ask him what he thinks about this legislation and he’ll tell you that it’s “not based on sound science.” And he’s right. But somehow the state senators that voted for this bill know better.

CONFRONTING A CONSPRACY OF SILENCE

Al Gore spoke of the “assault on reason.” Well, Exhibit A is staring us in the face: Coalitions of politicians and special interests that peddle science fiction over science fact. A paid-for, multi-million dollar effort that twists and turns the evidence until it’s gnarled beyond recognition. And tidal waves of cash that back a status quo of recklessness and inaction over responsibility and change. In short, it’s a story of disgraceful denial, back-pedaling and delay that has brought us perilously close to a climate change catastrophe.

Nothing underscores this Orwellian twist of logic more than the facts surrounding the now well negatively branded Cap and Trade program. Cap and Trade was a Republican inspired idea created during the debate over ozone and the Montreal Protocol in the 1980s. It was actually inspired by conservatives looking for the least command and control, least Government regulated way to meet pollution standards. It was implemented and it worked. And it is still working. But low and behold, when the strategists for the political right decided to make it a target because Democrats were leading the charge to address climate change, suddenly, this Free Market mechanism was transformed into "Cap and Tax," and a "job killing tax" with guess who—COAL—the leading carbon polluter, leading the effort.

What’s worse, we’ve stood by and let it all happen—we’ve treated falsehood with complacency and allowed a conspiracy of silence on climate change to infiltrate our politics. Believe me—we’ve had our chances to act. But every time we get close to achieving something big for our country, small-minded appeals to the politics of the moment block the way.

The conspiracy of silence that now characterizes Washington's handling of the climate issue is dangerous. Climate change is one of two or three of the most serious threats our country now faces, if not the most serious, and the silence that has enveloped a once robust debate is staggering for its irresponsibility. The costs of inaction get more and more expensive the longer we wait—and the longer we wait, the less likely we are to avoid the worst and leave future generations with a sustainable planet.

In many cases, what we’re talking about here is vast sums of money funneled into gas-guzzling industries and coal-fired power plants. We’re talking about pollution on a wide scale—the kind of dirty, thick and suffocating smog that poisons our rivers, advances chronic diseases like asthma and lung cancer, and creates billions in hospital costs and lost economic opportunity.

It's the same pollution that Rachel Carson warned us about in "Silent Spring," when she said:

"Why should we tolerate a diet of weak poisons, a home in insipid surroundings, a circle of acquaintances who are not quite our enemies, the noise of motors with just enough relief to prevent insanity? Who would want to live in a world which is just not quite fatal?"

Well today, we do live in a world where there's an absurdity in the air. And it's got complacency written all over it. Fish are dying in water polluted with pesticide. Roadless forests are being threatened by indiscriminate drilling. Industrial chemicals are seeping into all of us, and the burning of fossil fuels has overloaded ecosystems with nitrogen and ravaged our plant life. Bottom line: we've substituted fantasy for reason—sheer whimsy for proven epidemiology—and it's wreaking havoc on our environment.

You don't have to take my word for it. You can see it across the planet with your own eyes: The ice caps are melting. Seas are rising. Deserts are spreading. Storms are more frequent, more violent and more destructive. And pollution, famine and natural disasters are killing millions of people every year. These are changes that many experts thought were still years down the line, but climate change is radically altering our planet at a rate much faster than even the pessimists expected.

All you need to do is look out your window. We just had the warmest March on record for the contiguous United States. The naysayers will tell you that one hot year doesn't prove global warming; but year after year, new records are being set. This isn't an anomaly—it's a giant step in the wrong direction. 2010 was the hottest year on record, and the last decade was the hottest decade since we've started recording the weather. And April, May, and June of this year are continuing the trend.

For the first time in memory, the Augusta National azaleas bloomed and wilted before the first golfers teed off at this year's Masters.

And at the Boston Marathon, temperatures hit 89 degrees Fahrenheit, more than 30 degrees higher than average. Official jackets, gloves and coffee? Are you kidding? How about hats, sunscreen and Gatorade—and medical tents filled with heat-exhausted runners starting at mile ten of the 26-mile course from Main Street in Hopkington to Bolyston Street in Boston.

CONNECTING THE DOTS

I've been working to connect the dots on this issue for a long time. In 1988, on an already hot June day, Al Gore and I held the first Senate hearings on climate change, during which Jim Hansen testified that the threat was real. Four years later, we joined a delegation of Senators to attend the first Earth Summit in Rio, where we worked with 171 other nations to put in place a voluntary framework on climate change and greenhouse gas reductions.

Back in 1992, we all came together for a simple reason: We accepted the science. President George H. W. Bush personally traveled to climate talks in Rio to help plant the seeds of a new beginning. We knew the road ahead would be long. But we also knew that this was a watershed moment—that it created the kind of grassroots momentum that made people sit up and start to listen to the damage we were doing to the environment.

And sit up and listen they did. The principles that came out of Rio transformed into mandatory requirements under the Kyoto Protocol. Each nation had accepted its own target goal. The European Union reduction would be eight percent; Japan's would be six percent, and so on. We were thinking big: Our goal was to reach a total decrease in global emissions of 5.2 percent below 1990s levels by the year 2010.

Well, 2010 has come and gone—and so, too, have the targets. We all know the story: global political leadership was distracted or absent. International negotiations in Buenos Aires and The Hague turned tense. The less developed nations saw the targets and timetables for greenhouse gas reductions as a “western market conspiracy.” And then there were the trumped-up, industry funded so-called “studies” that challenged the scientific assertions for climate change scenarios.

Looking back, it's not hard to understand why the final agreement got sidetracked in the Senate. After all, developing countries were excluded from the treaty's reduction targets, even though it had become clear that China and India were significant enough as industrial powers that to exempt them entirely would be a mistake. Nations left out were deemed capable of undoing all the reductions achieved by developed nations! American companies were understandably reluctant to put themselves at a competitive disadvantage, and many in Congress had not yet woken up to the realities of climate change—though, as we know, climate scientists were already studying the phenomenon of greenhouse gases and taking a serious look at the data.

So the question is not whether the treaty had its flaws. The question is whether we got the fundamentals right—and I believe we did. As I remind colleagues: The view from 2012 looks a whole lot different than 1992.

Countries like China, South Africa, Brazil and South Korea have now made far-reaching choices to reshape their economies and move forward in a new and very different global era. Take China. It is already outspending the United States three to one on public clean energy projects. And last year alone, it accounted for almost a fifth of renewable energy investment, with the United States and Germany trailing behind. Steven Chu, the secretary of energy, said it best: “For centuries, America has led the world in innovation. Today, that leadership is at risk.”

So, the United States is now the laggard—and we're missing out on achieving sustained economic growth by securing enduring competitive advantage through innovation.

The facts speak for themselves. Today's energy economy is a \$6 trillion market with four billion users worldwide—growing to 9 billion in 40 years and the fastest growing segment of that is green energy—projected at \$2.3 trillion in 2020. America needs to get its skin in the game here or we will miss the market of the future—if not the future itself. And I'll tell you something

else: We would be delusional to believe China, or any other of our competitors, will sit on the sidelines and let this market opportunity fall through the cracks.

TIME IS RUNNING OUT

I realize that some will argue we cannot afford to address climate change in these tough economic times. But nothing could be further from the truth and nothing could be more self-defeating. We will recover from this slowdown. And when we do, we need to emerge as the world's leader in the new energy economy. That will be a crucial part of restoring America as a nation that measures prosperity in terms of hard work and innovation. Anyone who worries whether this is the right moment to tackle climate change should understand: We can't afford not to act now.

It is now that the most critical trends and facts all point in the wrong direction. The CO₂ emissions that cause climate change grew at a rate four times faster in the first decade of this new century than they did in the 1990s. Several years ago, the UN's Intergovernmental Panel on Climate Change issued a series of projections for global emissions, based on likely energy and land use patterns. Today, our emissions have actually moved beyond the worst case scenarios predicted by all of the models of the IPCC! Meanwhile, our oceans and forests, which act as natural repositories, are losing their ability to absorb carbon dioxide. This means that the effects of climate change are being felt stronger than expected, faster than expected.

The plain fact is that there isn't a nation on the planet that has escaped the steady onslaught of climate change. When the desert is creeping into East Africa, and ever more scarce resources push farmers and herders into deadly conflict, then that is a matter of shared security for all of us. When the people of the Maldives are forced to abandon a place they've called home for hundreds of years—it's a stain on our collective conscience, and a moral challenge to each of us. When our own grandchildren risk growing up a world we can't recognize and don't want to, in the long shadow of a global failure to cooperate, then—clearly, urgently, profoundly—we all need to do better.

Frankly, those who look for any excuse to continue challenging the science have a fundamental responsibility that they have never fulfilled: Prove us wrong or stand down. Prove that the pollution we put in the atmosphere is not having the harmful effect we know it is. Tell us where the gases go and what they do. Pony up one single, cogent, legitimate, scholarly analysis. Prove that the ocean isn't actually rising; prove that the ice caps aren't melting, that deserts aren't expanding. And prove that human beings have nothing to do with any of it.

And by the way—good luck in the effort! Because there are over 6,000 peer-reviewed articles, all of which document clearly and irrefutably the ways in which mankind is contributing to this problem. Sure we know the naysayers have their two-bit scientists who trade in doubt and misdirection about things like sun spots and clouds. But there's not a single credible scientist that will argue climate change isn't happening.

In fact, even the naysayers are starting to come to their senses. Just this year, a well-known climate skeptic, Dr. Richard Mueller, released a series of reports that were funded in part by the Koch brothers. Dr. Mueller thought his results would show something different than all of the other climate studies. Think he found what the Koch brothers were looking for? Here's Dr. Mueller in his own words: "You should not be a skeptic, at least not any longer." Bottom line: his studies found what all other credible climate studies have been telling us for decades—that global warming is real.

And if you just stop and look around for a moment, you'll see that its effects are everywhere: floods and droughts, pathogens and disease, species and habitat loss, and sea level rise and storm surge that threaten our cities and coastlines. No continent is escaping unscathed: Increasing ground instability in permafrost regions, increasing avalanches in mountainous zones, warmer and drier conditions in the Sahelian region of Africa leading to a shortened growing season, and coral bleaching events in the Great Barrier Reef.

THE COLD, HARD, STUBBORN FACTS ABOUT CLIMATE CHANGE

I want to take a moment to drill down on the science—on the cold, hard, stubborn facts that must guide us in addressing this challenge. I know it's detailed, but it's the very detail detractors can never address or refute and it's important to see the detail in all its cumulative force. Unlike the naysayers, I will respond point by point to the falsehoods and lay out a summary of critical evidence that should lead America—and the world—to action.

Here's what the science is telling us: Atmospheric carbon dioxide levels have increased by nearly 40 percent in the industrial era, from 280 to over 393 parts carbon dioxide for every million particles in the atmosphere. And, before long, we're likely to see global average concentrations of CO₂ at 400ppm. Within the last few months, monitoring stations in the Arctic region for the first time reported average concentrations of CO₂ at 400 parts per million. Because of the remote nature of the monitors, they generally reflect long-term trends as opposed to fluctuations in direct emissions near population centers.

As atmospheric scientist Pieter Tans with the National Oceanic and Atmospheric Association (NOAA) points out, "The northern sites in our monitoring network tell us what is coming soon to the globe as a whole...We will likely see global average CO₂ concentrations reach 400 ppm about 2016."

Scientists have warned that anything above 450ppm—a warming of two degrees Celsius—could lead to severe, widespread and irreversible harm to human life on this planet. When concentrations of other greenhouse gases, like methane and black carbon, are factored into the equation, the analysis suggests that stabilizing concentrations around 400ppm of "equivalent carbon dioxide" would give us about an 80 percent chance of avoiding a two degree Fahrenheit increase above present average global temperature.

Considering what a two degree Fahrenheit increase could mean, scientists prefer not to take their chances. James Hansen, director of the NASA Goddard Institute for Space Studies, has done the math. His analysis shows that we need to be shooting for a stabilization level of 350ppm to increase our chances of avoiding a two degree Fahrenheit increase. That's a target we've obviously already exceeded. If we don't slam on the breaks now, we could be headed for a global temperature increase of two to four degrees Celsius by century's end, and greater warming after that.

AN AVALANCHE OF EVIDENCE

So what do these “postcards from the edge” look like? Let me walk through what is happening to our air, our health, and our environment.

A Warming Planet

Let me start with warming temperatures. The first ten years of this century were the warmest decade on record—and 2010 was tied with 2005 as the hottest year ever recorded.

The National Oceanic and Atmospheric Administration has reported that 2011 was the second warmest summer on record—just 0.1 degrees Fahrenheit below the 1936 record—and the U.S. Climate Extremes Index, a measure of the area of the country experiencing extreme conditions, was nearly four times the average.

Last year, many northeastern states experienced some of their wettest summers—especially those states caught in Hurricane Irene's destructive path. Meanwhile, persistent heat and below average precipitation across the southern United States created record-breaking droughts in Louisiana, New Mexico, Oklahoma, and Texas of greater intensity than the 1930's “Dust Bowl.” Texas endured the country's hottest summer ever recorded for any state at an average temperature of 86.8 degrees.

What's shocking is that the evidence of a warming planet is coming in faster and clearer every year. These graphs here show temperature changes from 1912 to 2011. See how the warming accelerates after 1970?

According to a new climate report from NOAA, the lower 48 states elbowed their way into the record books this spring with—and I quote: “the warmest March, third warmest April, and second warmest May...the first time that all three months during the spring season ranked among the 10 warmest, since records began in 1895.” In fact, the average temperature this spring was so far off the charts that the lower 48 beat out the old 1910 record by an astonishing two degrees Fahrenheit!

Inland, worsening conditions will create persistent drought in the Southwest United States and significantly increase Western wildfire burn area. The National Academy of Sciences has confirmed that the effects may be irreversible for a thousand years. Just look at the damage already wrought by pine bark beetles in the Rocky Mountains. For thousands of years, pine beetles were not a particular problem—their populations were kept in check by reliable winter

frosts. But in recent years, due to warmer winters, pine beetle populations have exploded, devastating these once majestic forests.

Health Impacts

Let me say something here about what this is doing to our health, because it's particularly important and many people are just not aware of it.

As average temperatures rise, we can expect to see more extreme heat waves during our summers, which, as we know from history, can seriously impact people with heart problems and asthma, the elderly, the very young, and the homeless. In the United States, Chicago is projected to have 25 percent more frequent heat wave days by the end of the century. In Los Angeles, we could see as much as a four- to eightfold increase.

Climate change may also heighten the risk of infectious diseases, particularly diseases found in warm areas and spread by mosquitos and other insects—like malaria, dengue fever and yellow fever. In some places, climate change is already altering the pattern of disease. In the Kenyan highlands, for example, it's now one of the major drivers of malaria epidemics.

And it's not just the health costs that are sounding the alarm. As many of you have seen with your own eyes, the Arctic is among the most startling places to witness the adverse effects of global climate change. Great sheets of ice have been calving off glaciers, marine mammals are struggling to survive, and where there used to be only frozen landscapes, now there is open water.

Changing Arctic

Every new report that's published suggests the situation is getting grimmer. Last year, the multi-country Arctic Monitoring and Assessment Program released a new assessment of the impact of climate change in the Arctic. It found that the period from 2005 to 2010 was the warmest ever recorded. According to AMAP ["A-map"] researchers, the changes in ice melt over the past ten years "are dramatic and represent an obvious departure from the long-term patterns."

Their conclusion is startling: they expect the Arctic Ocean to be nearly ice-free within this century, likely in the next 30 to 40 years.

Think about that for a second: Within our children's lifetimes, one of Earth's polar caps will be completely gone. Average annual temperatures in the Arctic have increased at approximately twice the rate of average global temperatures. Within a generation—maybe two—kids will grow up learning geography on maps and globes that show simply an empty blue expanse on the top of the world.

In terms of impact, all of us who have been following this issue understand that the melting of the Arctic is at least partly mitigated by the fact that the ice is already afloat. But if there's ice melt from glaciers, as we're seeing not only in the Arctic, Greenland and Antarctica, but also in North America, South America and Africa—when you realize that all over the globe, glaciers

and ice caps are losing volume—that means other day-to-day, practical problems for our communities.

Melting Glaciers and Permafrost

Many of you may not know that there are hundreds of communities in America that rely on annual glacial melt for municipal water supplies and hydropower. Just ask Washington State, where glacial melt water provides 1.8 trillion liters of water every summer. Or talk to folks in Alaska, where glacier melt plays a key role in the circulation of the Gulf of Alaska, which is important to maintaining the very, very valuable fisheries—halibut and salmon—that reside in this body of water.

Again, the skeptics will say, “Look, there are some glaciers that are actually expanding.” And yes, there are some glaciers that are responding to unusual and unique local conditions and increasing in snow and ice accumulation. But again, the overwhelming evidence is that most of America’s glaciers are shrinking. Over the last four decades of the 20th century, North American glaciers lost some 108 cubic miles of ice—that’s enough to inundate California, Arizona, Nevada, Utah, and Colorado with one foot of water!

In 1850, there were approximately 150 glaciers in what is now Glacier National Park. Today, due to warmer temperatures, there are only 25 named glaciers remaining, and some models predict that the Park’s glaciers could disappear in just a few decades. But trust your own eyes, if you prefer. Look at photographs that depict glacial melt over various time periods in Glacier National Park, Montana and Holgate Glacier and Icy Bay, Alaska. As you’ll see, the effects are just staggering.

We all remember Wordsworth’s lines about “the Lake that was shining clear among the hoary mountains.” Well, these mountains are no longer hoary, and soon, lakes will reflect not snow-covered peaks, but naked ridges and sun-splashed steeps.

And to make matters worse, temperatures are likely to increase exponentially in the coming years. Because the environment is a closed system, the more conditions change, the faster they change. As the ice and permafrost melts, methane plumes under the surface have begun venting into the atmosphere. During a survey last summer of the East Siberian Arctic seas, a team of scientists encountered a high density of plumes—some more than a kilometer across—emitting methane into the atmosphere at concentrations up to 100 times higher than normal. If that process continues, we’re in real trouble since methane is a potent greenhouse gas: over a period of 100 years, it has a warming potential roughly 25 times greater than CO₂.

In part, we may become the victims of vicious feedback cycles in our climate system. Cycles associated with less cloud cover, changes in aerosols, peatlands, soils, and Arctic ice cover can all lead to accelerated climate change. One study estimated that thawing permafrost may turn the Arctic from a carbon sink—a place that stores carbon—to a carbon source by the mid-2020s, releasing 100 billion tons of carbon by 2100. What does that mean? One hundred billion tons of carbon is about equal to the amount of CO₂ that would be released worldwide from ten years of burning fossil fuels. That’s the future, folks—and it’s bleak if we don’t act.

Rising Sea Levels: An “Invisible Tsunami”

Here’s another “postcard from the edge”: rising sea levels. You’ll recall that some senators in the state legislature in North Carolina don’t think it’s much of a problem.

Well, let’s take a look at the evidence. Our best studies predict a higher sea level rise than previously projected. With the melting of the West Antarctic Ice Sheet alone, global sea levels could rise by as much as 3.26 meters in the coming years. And the Pacific and Atlantic coasts may be in for a 25 percent increase above average levels by century’s end. In all, the melting of the Greenland ice sheet has the potential to raise global sea level by about seven meters, and the ice sheets of Antarctica have the potential to contribute to 60 meters of sea level rise.

Think about what this means. As the *New York Times* reported in March, some 3.7 million Americans living within a few feet of high tide are at risk from the rising sea. So all you state senators out there, listen up: The effects of climate change will spare no one—from Tampa to Asheville, from Sausalito to Staten Island, all coastal communities are vulnerable.

Benjamin Strauss, co-author of a smart new study on topographic vulnerability, said it best: “Sea level rise is like an invisible tsunami, building force while we do almost nothing... We have a closing window of time to prevent the worst by preparing for higher seas.” I think that’s exactly right—and it’s why, in cities like Boston, officials are actively planning for how to manage 100-year floods that are now arriving every twenty years in the face of a global sea level rise of three to six feet by 2100.

So, we can pass legislation at the state level to ban planning for sea level rise. It might be easy politics, but it’s not smart politics in terms of protecting our country. Just ask those living in Tuvalu and the low-lying nation of Kiribati. Think they could use some advance planning to deal with the “King” tides that may soon drown out life on their shores? You bet. But instead of learning from them, we’ve succumbed to the siren call of short-term interests.

One resident of Tuvalu poignantly asked: “What will happen to us in 10 years’ time?” I wish I could allay her fears. I wish I could tell her that the climate challenge would only be limited to occasional sea level rise, and that—naturally, surely—the King tides would recede.

Raging Floods and Water Scarcity

But the truth is much more harrowing. From Veracruz to Songkhla Province in Thailand, floods are devastating crops and stealing away opportunities for millions. On my travels, I’ve seen children orphaned by raging floodwaters, families deprived of basic necessities like food, clean drinking water and medicine. I’ve also seen the ways in which climatic changes interact with conflict, food insecurity and water scarcity. Think of Darfur and tensions over arable land. Think of drought in Syria and its impact on farmers in southern Dara’a. Think of water scarcity in Yemen—and the list goes on.

These are the “invisible tsunamis” that Benjamin Strauss spoke of. They develop slowly, quietly, determinately. And they devastate communities just as surely as they renew our sense of urgency about the costs of inaction.

THE BIG, COSTLY PICTURE

The fact is, unmitigated climate change is wreaking havoc on economies—and it will only get worse unless we act.

Just ask Professor Frank Ackerman, a prominent economist at Tufts University. He found that inaction in the face of climate change could cost the American economy more than 3.6 percent of GDP—or \$3.8 trillion annually—by the end of the century.

And he’s not alone. Harvard economist Joseph Aldy estimates that if temperatures push past the 2 degrees Celsius benchmark to 2.5 degrees Celsius above pre-industrial levels, the annual damages could amount to one to two percent of world GDP by 2100—and as high as two to four percent of world GDP if we push above four degrees Celsius.

Developing countries will face similar costs. According to a major international initiative on “The Economics of Ecosystems and Biodiversity,” developing countries will spend an estimated \$70 to \$100 billion a year from 2010 to 2050 just to adapt to a two degrees Celsius change in global temperatures, with the majority spent on protecting infrastructure and coastal zones, managing the water supply and protecting against the effects of floods.

The “grow now, clean later” approach is no longer viable—if it ever was. Before you know it, one quarter of the world’s land surface will bear the marks of soil erosion, salinization, nutrient depletion and desertification. Imagine what this will do to agricultural productivity and water supplies.

Another way of looking at this is to consider not the costs, but the economic benefits of keeping our ecosystems intact.

Back in 2005, the World Bank estimated the total value of the world’s natural assets to be \$44 trillion. The countries that manage their forests, agricultural lands, energy and minerals and other natural assets well will be economic leaders in the 21st century. They’ll be able to reap the benefits of ecosystem services like coral reefs, which provide food, water purification, tourism and genetic diversity—services valued at \$172 billion annually. And they’ll be able to invest more in the “intangible” drivers of growth like human skills, education and innovation.

TIME FOR CITIZEN ACTION

Mr. President, the message here is clear: Over forty years ago, twenty million Americans—fully one-tenth of our country's population at the time—came together to demand environmental accountability. And they didn't stop there. They elected a Congress that passed the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Endangered Species Act, Marine Mammal Protection Act, Coastal Zone Management Act, and Toxic Substances Control Act. They even created the Environmental Protection Agency—the best example of what our democracy can produce.

We need Congress now to do what the science tells us we have to do, to do what our economists tell us we have to do, to what common sense demands that we do: It's time for Congress to stand up and do its part on climate change.

I don't know how many have read David Orr's terrific book, "Down to the Wire: Confronting Climate Collapse", but it's important for everyone to take the time to understand his argument. Nowhere is the challenge of our moment more clearly expressed: "The real fault line in American politics is not between liberals and conservatives... It is, rather, in how we orient ourselves to the generations to come who will bear the consequences, for better and for worse, of our actions." As Orr reminds us, we're at a tipping point—and it's going to take leadership.

Unfortunately, we are witness to just the opposite.

In a "talking point" memo to his fellow Republicans last summer, House Majority Leader Eric Cantor of Virginia took aim at environmental safeguards as "job killers." He listed the "Top 10 job-destroying regulations," seven of which dealt with reducing air pollution from industrial incinerators, boilers and aging coal-fired power plants.

Job killers? The facts just don't support that.

The Labor Department keeps close tabs on extended mass layoffs, and in 2010, the Department found that of the 1,256,606 mass layoffs, employers attributed just 2,971 to government regulation. That's only about two-tenths of one percent of all layoffs.

In fact, decreasing carbon pollution presents a huge economic opportunity in terms of new jobs and innovation. For every \$1 we spend, we get \$30 in benefits. The U.S. environmental technology industry in 2008 generated approximately \$300 billion in revenues and supported almost 1.7 million jobs. The air pollution sector alone produced \$18 billion in revenue.

If we're going to remake the world before 2050, and this is one area where I agree with my Republican friends, we're going to have to harness the power of the good old American market economy. And one way to do that is to put a price tag on carbon and other global warming pollutants.

With a price tag, we more accurately reflect the consequences of these pollutants, not just for the environment but also for the quality of our lives and the health of our families. If we understand the consequences of our choices, especially in economic terms, we'll make better choices.

One way to do this is to levy a pollution fee that reflects the true environmental cost of coal and oil. But there's no chance the current Congress will enact any tax, especially one on smokestack industries.

Over the course of 2011, the Republican-controlled House held nearly 200 votes to weaken our environmental safeguards, including the bedrock legislation spawned by the very first Earth Day—the Clean Air Act, the Clean Water Act, the Endangered Species Act, even the agency created to enforce those laws, the Environmental Protection Agency.

If we don't use the market, the other option is direct regulation of carbon emissions by the EPA under the Clean Air Act. The conservative-dominated Supreme Court has already given the green light to the EPA to do this. But this invites even more bitterness and political partisanship.

Besides, pricing pollution has already shown itself to be effective. During the 1980s, instead of imposing regulations, we used a cap-and-trade system to reduce the sulfur dioxide emissions from power plants that caused plant- and soil-destroying acid rain. The system included cash incentives to over comply: polluters received allowances for every ton of sulfur oxide under the limits, and they could trade, sell or bank the allowances. The system worked so well that regulated plants reduced emissions 40 percent more than required.

There is every reason to believe some variation of that system would work just as well to curb carbon emissions. But anything related to or resembling "Cap And Trade" isn't the best rallying cry these days thanks to the concerted, cynical rebranding of the concept. But whatever rallying cry is used, the point is the time for action is now. We need a "Million Man-Million Woman-Million Child" March on Washington and the voting booths of America. We need people marching up the steps of the Capitol, pounding on the doors of Congress, demanding a solution to our climate crisis.

SHIFTING TO A NEW GLOBAL ENERGY PARADIGM

Deadlines, as we know, are necessary to instill a sense of urgency—and we've got a big one coming up this week at the global Rio +20 Earth Summit.

Much has changed since the first Earth Day Summit back in 1992—and much of it for the worse. True, we're seeing innovation and entrepreneurship flourish in countries that were once considered among the poorest. We should celebrate that. But I'll tell you: Twenty years after Rio, fifteen years after Kyoto, we're further behind than ever. The science is screaming at us. And our planet is sending us a SOS.

Part of the problem is that we failed to implement or be held accountable for the commitments we made twenty years ago. Earlier this month, the United Nations Environment Program issued the official summit report, which noted “significant progress” in only 4 of 90 crucial environmental goals over the past five years. We can—and we must—do better.

I spoke earlier of the need to take advantage of the green energy economy.

Our best economists say that to ward off catastrophic climate change, the green revolution has to happen three times faster than the industrial revolution did. That’s why I believe America and the world are facing a moment of truth. Are we going to step up and put in place the policies that will galvanize our green entrepreneurs, drive development of new clean technologies, re-energize our economy, and tackle global climate change—all at the same time?

We invented solar and wind technology, but German and Japanese companies developed it. Today, of the top thirty companies in the world in solar, wind and advanced batteries, only six are based in the United States. If we do this right, I truly believe that the next four or five Googles will emerge in the energy sector. The question is not whether the twenty-first century economy will be a green economy—it has to become one, and it will. The question is whether it happens in time to avert catastrophe, and whether America will continue to lead.

Accelerating the transition to a new energy paradigm is the most important single step the world can take to reduce the threat of climate change. And Rio is as good a place as any to make that happen. At the Summit, nations are expected to announce commitments to the Sustainable Energy for All initiative. Tackling the challenges of energy access, energy efficiency and renewable energy in an integrated way is absolutely essential. That’s why a wide variety of stakeholders—from governments to businesses to civil society leaders—have indicated they will be coming to Rio with national action plans in hand that can be monitored over time as part of a new mission of the United Nations and its partners.

I am convinced the countries that take advantage of these opportunities are going to be the leaders of the 21st century. I have already seen successes in Massachusetts. Many of you may not know that Massachusetts was recently ranked first in the nation in energy efficiency and clean energy leadership, edging out California for the first time ever. My state is a great example of the speed in which we can turn ourselves around on this issue. It won’t happen overnight, but with serious vision and commitment, we can revolutionize the way we obtain and use energy—and we all need to be working towards that end.

Of course, governments alone can’t solve this problem. The private sector is the key. Public-private partnerships like the Global Alliance for Clean Cookstoves can bring together the drive and creativity of for-profit industries with government financial support and encouragement to meet growing energy needs while combating climate change.

TRANSFORMATIVE CHANGE IS POSSIBLE

Bottom line: we Americans need to face up to the climate change challenge—not just as individuals or separate interests, but as a nation with a national purpose. Of course, that’s easier said than done when the latest “Trends in American Values” Pew poll shows a 46-point gap between Republicans and Democrats on the need to protect the environment. And I’ll give you one guess which party fell by 39 points in its support for protecting the environment since 1992.

Again, I think David Orr is right on the mark: Our challenge is fundamentally political. It’s not about budgets. It’s not about regulations. It’s about leaders in this country who are unwilling to deal with the truth about climate change—leaders that have cowed the silent majority into submission with their contrived and concerted attacks on the facts.

I’ve spoken before about this country’s crisis of governance and the dangers of being held hostage to one party’s remarkably cynical and selfish drive for power that comes at the expense of all common sense. Well, what we need today is a transformative moment in our politics.

Let me quote Orr in full here:

“Our situation calls for the transformation of governance and politics in ways that are somewhat comparable to that in U.S. history between the years of 1776 and 1800. In that time Americans forged the case for independence, fought a revolutionary war, crafted a distinctive political philosophy, established an enduring Constitution, created a nation, organized the first modern democratic government, and invented political parties to make the machinery of governance and democracy work tolerably well.”

So we have made transformative changes before. And there are other examples. We once burned wood, and then we transitioned to relying on oil and coal. We can make the leap to a mix of renewable energy sources such as hydro, wind and solar. Now we need to set our sights on the next transformation. As the old saying from the 1970s goes, “The Stone Age didn’t end because we ran out of stones, and the oil age is not going to end because we run out of oil.” Truer words could not be spoken.

In the end, the question is not whether we’re going to pay for climate change. We’re already paying for it—in warmer temperatures, rising sea levels, melting glaciers, floods, droughts, wildfires, the decimation of animal and plant life, and so much more. The real question is whether we walk a path that addresses it now in a responsible way and that also helps us break humanity’s addiction to oil, cleans up our environment and creates jobs—or whether we suffer the consequences later on a massive, unpredictable scale in the form of environmental devastation, war, human misery, famine, poverty, and reduced economic growth for decades to come.

Mr. President: The fork in the road points in two directions. The task ahead of us is to take the one less traveled by. At the height of the American Revolution, Thomas Paine wrote about the “summertime soldiers and sunshine patriots” who abandoned the cause. Well, science has shown that we can’t afford to be summertime soldiers anymore.

So, in this time of challenge and opportunity, I hope and pray colleagues commit to transformative change in our politics. I hope we confront the conspiracy of silence head-on and allow complacency to yield to common sense, and narrow interests to bend to the common good. Future generations are counting on us. I yield the floor.

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