

100 Percent Carbon-Free Electricity Within 10 Years



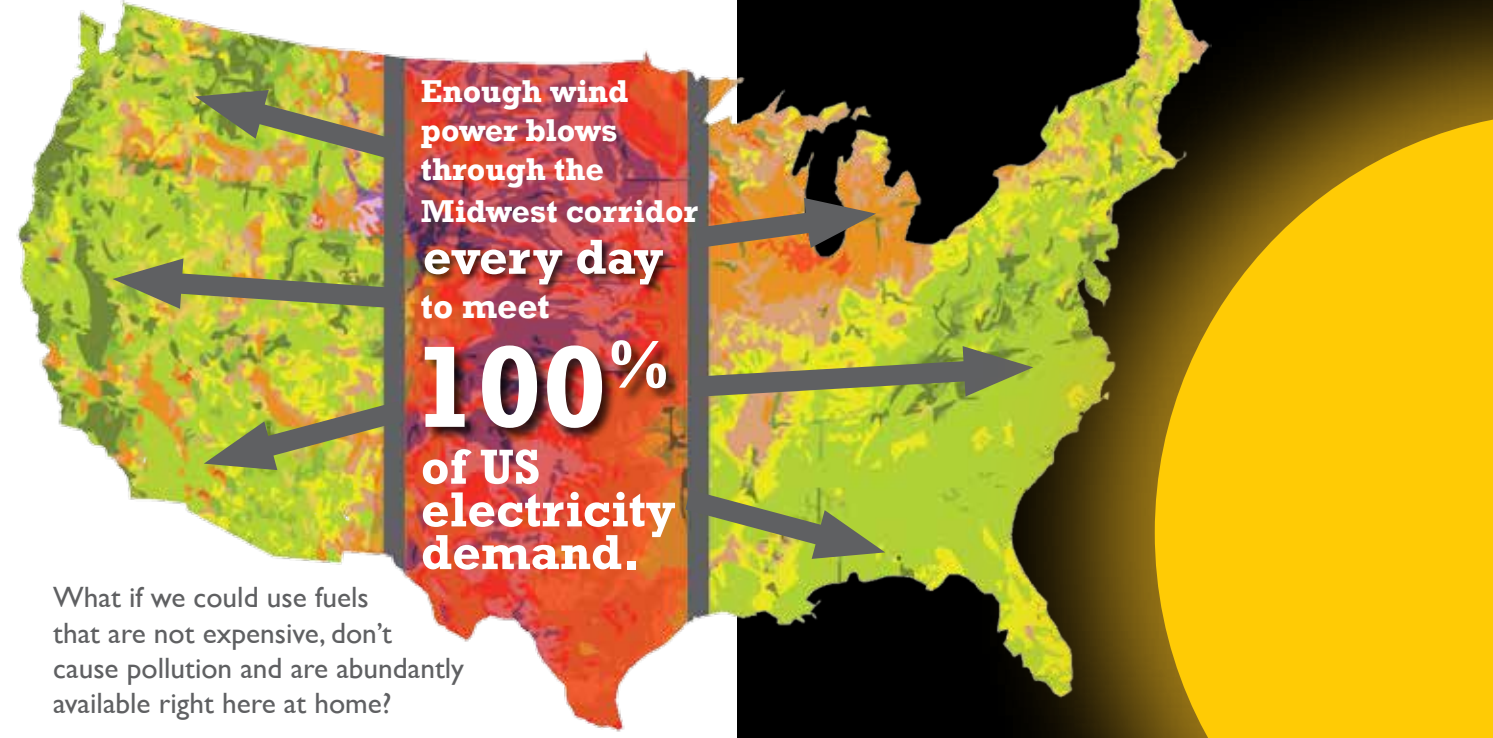
Photo courtesy Ken Oppram, and The Nobel Foundation.

• Former Vice President Al Gore
• (excerpt of speech to the nation, July 2008)

There are times in the history of our nation when our very way of life depends upon dispelling illusions and awakening to the challenge of a present danger. In such moments, we are called upon to move quickly and boldly to shake off complacency, throw aside old habits and rise, clear-eyed and alert, to the necessity of big changes. Those who, for whatever reason, refuse to do their part must either be persuaded to join the effort or asked to step aside. This is such a moment. The survival of the United States of America as we know it is at risk. And even more—if more should be required—the future of human civilization is at stake...

The answer is to end our reliance on carbon-based fuels.

In my search for genuinely effective answers to the climate crisis, I have held a series of “solutions summits” with engineers, scientists and CEOs. In those discussions, one thing has become abundantly clear: when you connect the dots, it turns out that the real solutions to the climate crisis are the very same measures needed to renew our economy and escape the trap of ever-rising energy prices. Moreover, they are also the very same solutions we need to guarantee our national security without having to go to war in the Persian Gulf.



What if we could use fuels that are not expensive, don't cause pollution and are abundantly available right here at home?

We have such fuels. Scientists have confirmed that enough solar energy falls on the surface of the Earth every 40 minutes to meet 100 percent of the entire world's energy needs for a full year. Tapping just a small portion of this solar energy could provide all of the electricity America uses. And enough wind power blows through the Midwest corridor every day to also meet 100 percent of US electricity demand. Geothermal energy, similarly, is capable of providing enormous supplies of electricity for America.

The quickest, cheapest and best way to start using all this renewable energy is in the production of electricity.... But to make this exciting potential a reality, and truly solve our nation's problems, we need a new start. That's why I'm proposing a strategic initiative designed to free us from the crises that are holding us down and to regain control of our own destiny. It's not the only thing we need to do. But this strategic challenge is the lynchpin of a bold new strategy needed to re-power America.

The Challenge: Setting Our Targets High

I challenge our nation to commit to producing 100 percent of our electricity from renewable energy and truly clean carbon-free sources within 10 years. This goal is achievable, affordable and transformative. It represents a challenge to all Americans, in every walk of life: to our political leaders, entrepreneurs, innovators, engineers and to every citizen.

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A few years ago, it would not have been possible to issue such a challenge. But here's what's changed: the sharp cost reductions now beginning to take place in solar, wind and geothermal power coupled with the recent dramatic price increases for oil and coal have radically changed the economics of energy....

Sure enough, billions of dollars of new investment are flowing into the development of concentrated solar thermal, photovoltaics, windmills, geothermal plants and a variety of ingenious new ways to improve our efficiency and conserve presently wasted energy. And as the demand for renewable energy grows, the costs will continue to fall....

Defying the Status Quo: Focusing on What's Possible

To those who argue that we do not yet have the technology to accomplish these results with renewable energy: I ask

them to come with me to meet the entrepreneurs who will drive this revolution. I've seen what they are doing, and I have no doubt that we can meet this challenge.

To those who say the costs are still too high: I ask them to consider whether the costs of oil and coal will ever stop increasing if we keep relying on quickly depleting energy sources to feed a rapidly growing demand all around the world.

When demand for oil and coal increases, their price goes up. When demand for solar cells increases, the price often comes down. When we send money to

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foreign countries to buy nearly 70 percent of the oil we use every day, they build new skyscrapers and we lose jobs. When we spend that money building solar arrays and windmills, we build competitive industries and gain jobs here at home.

Of course there are those who will tell us this can't be done. Some of the voices we hear are the defenders of the status quo—the ones with a vested interest in perpetuating the current system, no matter how high a price the rest of us will have to pay. But even those who reap the profits of the carbon age have to recognize the inevitability of its demise. As one OPEC oil minister observed, "The Stone Age didn't end because of a shortage of stones."

To those who say 10 years is not enough time, I respectfully ask them to consider what the world's scientists are telling us about the risks we face if we don't act in 10 years. The leading experts predict that we have

less than 10 years to make dramatic changes in our global warming pollution lest we lose our ability to ever recover from this environmental crisis. When the use of oil and coal goes up, pollution goes up. When the use of solar, wind and geothermal increases, pollution comes down.

To those who say the challenge is not politically viable: I suggest they go before the American people and try to defend the status quo. Then bear witness to the people's appetite for change. I for one do not believe our country can withstand 10 more years of the status quo. Our families cannot stand 10 more years of gas price increases. Our workers cannot stand 10 more years of job losses and outsourcing of factories. Our economy cannot stand 10 more years of sending \$2 billion every 24 hours to foreign countries for oil. And our soldiers and their families cannot take another 10 years of repeated troop deployments to dangerous regions that just happen to have large oil supplies.



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Looking Back: Inspiration for Moving Forward

What could we do instead for the next 10 years? What should we do during the next 10 years? Some of our greatest accomplishments as a nation have resulted from commitments to reach a goal that fell well beyond the next election: the Marshall Plan, Social Security, the interstate highway system. But a political promise to do something 40 years from now is universally ignored because everyone knows that it's meaningless. Ten years is about the maximum time that we as a nation can hold a steady aim and hit our target.

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that goal. But 8 years and 2 months later, Neil Armstrong and Buzz Aldrin walked on the surface of the moon.

Overcoming the Obstacles and Rising to the Occasion

To be sure, reaching the goal of 100 percent renewable and truly clean electricity within 10 years will require us to overcome many obstacles. At present, for example, we do not have a unified national grid that is sufficiently advanced to link the areas where the sun shines and the wind blows to the cities in the East and the West that need the electricity.

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Photo courtesy NASA

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Our national electric grid is critical infrastructure, as vital to the health and security of our economy as our highways and telecommunication networks.

Today, our grids are antiquated, fragile and vulnerable to cascading failure. Power outages and defects in the current grid system cost US businesses more than \$120 billion a year. It has to be upgraded anyway. We could further increase the value and efficiency of a Unified National Grid by helping our struggling auto giants switch to the manufacture of plug-in electric cars. An electric vehicle fleet would sharply reduce the cost of driving a car, reduce pollution and increase the flexibility of our electricity grid.

At the same time, of course, we need to greatly improve our commitment to efficiency and conservation. That's the best investment we can make.

America's transition to renewable energy sources must also include adequate provisions to assist those Americans who would unfairly face hardship. For example, we must recognize those who have toiled in dangerous conditions to bring us our present energy supply. We should guarantee good jobs in the fresh air and sunshine for any coal miner displaced by impacts on the coal industry. Every single one of them.

Of course, we could and should speed up this transition by insisting that the price of carbon-based energy include

the costs of the environmental damage it causes. I have long supported a sharp reduction in payroll taxes with the difference made up in CO2 taxes. We should tax what we burn, not what we earn. This is the single most important policy change we can make....

Of course the greatest obstacle to meeting the challenge of 100 percent renewable electricity in 10 years may be the deep dysfunction of our politics and our self-governing system as it exists today. In recent years, our politics has tended toward incremental proposals made up of small policies designed to avoid offending special interests, alternating with occasional baby steps in the right direction....

But I've begun to hear different voices in this country from people who are not only tired of baby steps and special interest politics, but are hungry for a new, different and bold approach....

So I ask you to join with me to accept this challenge: for America to be running on 100 percent zero-carbon electricity in 10 years.... We need to act now. This is a generational moment. A moment when we decide our own path and our collective fate.

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This contribution is an approved adaptation of Vice President Gore's challenge to the nation on July 17, 2008. Mr. Gore was the 45th vice president of the United States serving from 1993 to 2001. He is a Nobel laureate and global leader who has been engaging in research and coalition building for 30 years to halt the progression of climate change. He is currently the founder and chair of Alliance for Climate Protection, the cofounder and chair of Generation Investment Management, the cofounder and chair of Current TV, a member of the Board of Directors of Apple Inc., and a senior advisor to Google. In addition, Mr. Gore is on the faculty of Middle Tennessee State University as a visiting professor, and was a visiting professor at Columbia University Graduate School of Journalism, Fisk University and the University of California, Los Angeles.





Photo courtesy NASA



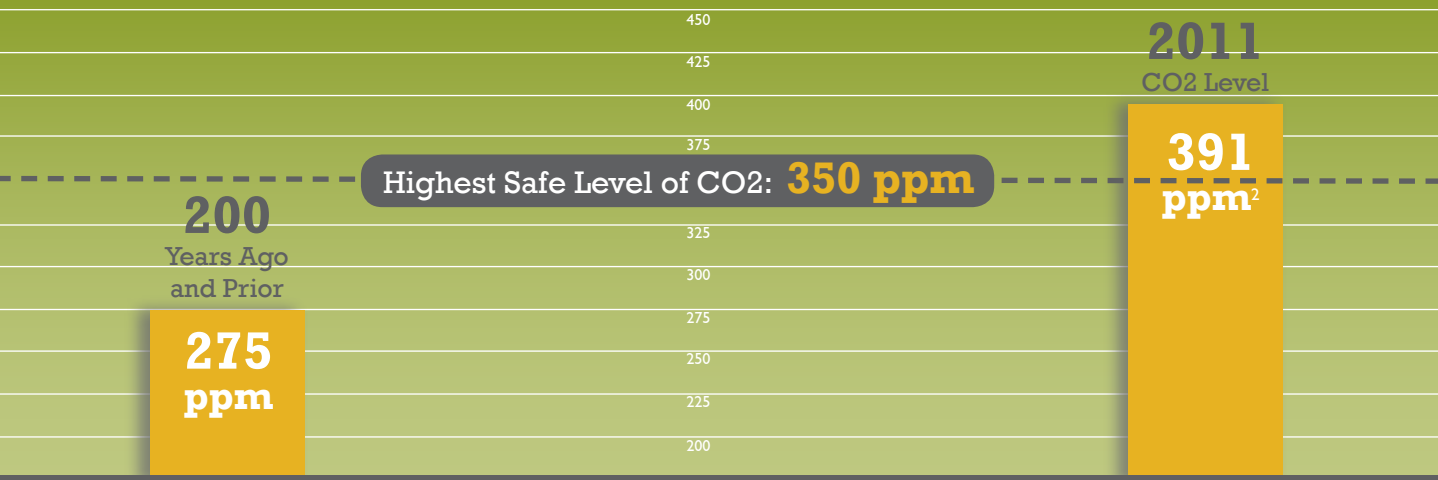
Photo courtesy iMatter



Photo courtesy 350.org

Atmospheric CO2 Concentrations

Prior to the Industrial Revolution of the late 19th and early 20th centuries, the carbon dioxide level was about 280 parts per million. That figure had changed very little over the prior 1,000 years. Today, the CO2 concentration is 391 ppm and rising about 2 ppm each year. The only time in history that we find evidence for carbon dioxide levels that high was 15 to 20 million years ago, when the planet was dramatically different.¹



Scientists say that the increasing CO2 level is causing sea levels to rise, glaciers to melt, mosquitoes to spread, oceans to acidify and weather to become more severe. Getting back to 350 ppm is possible but will require phasing out fossil fuel use and adopting agricultural and forestry practices that sequester carbon.³

Pioneering organizations such as 350.org and the iMatter March are working to build global grassroots movements to solve the climate crisis through campaigns, organizing and public projects.⁴

from the editor

from the editor

Youth Activism: Getting Serious About Climate Change

Alec Loorz, a 16-year-old activist is suing the federal government for failure to protect the atmosphere. “The time has now come for young people to stand up and hold our government accountable,” said Loorz.¹

In this landmark case against the government, Loorz along with youth climate activists in all 50 states and the District of Columbia, is asking the government to recognize that the atmosphere is a public trust that needs to be protected for future generations.²

“Our addiction to fossil fuels is messing up the perfect balance of nature and threatening the survival of my generation,” wrote Loorz. “If we continue to hide in denial and avoid taking action, I and my generation will be forced to grow up in a world where hurricanes as big as Katrina are normal, people die every year because of heat waves, droughts, and floods, and entire species of animals we’ve come to know disappear right before our eyes.”³

The lawsuit is backed by NASA climate scientist James Hansen and lawyers say there’s precedence for such a case based on the Public Trust Doctrine, which states that common resources like water and air are held in trust by the government for the people and for future generations.⁴

Loorz wants “let the world know that climate change is not about money, it’s not about power, it’s not about convenience. It’s about our future. It’s about the survival of this and every generation to come.” He organized the iMatter March, a series of more than 100 marches across planet to empower youth to organize and be heard on the issue of global climate change.⁵

At 16 Loorz is no stranger to activism. At age 12 when his application to be a speaker with Gore’s Climate Project was declined because of his age, he founded his own non-profit organization, Kids Against Global Warming, and has since delivered climate change presentations to more than 200,000 youth and adults.⁶



Photo courtesy Alec Loorz and Kids vs Global Warming

I’m always impressed with what young people can do before older people tell them it’s impossible.

➤ David Brower,
Founder Earth Island Institute



Photo courtesy Alec Loorz and Kids vs Global Warming