SUSTAINABILITY TOOLKIT

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GREEN BUILDER® MEDIA
Defining Green

OUR WORLD IS CHANGING

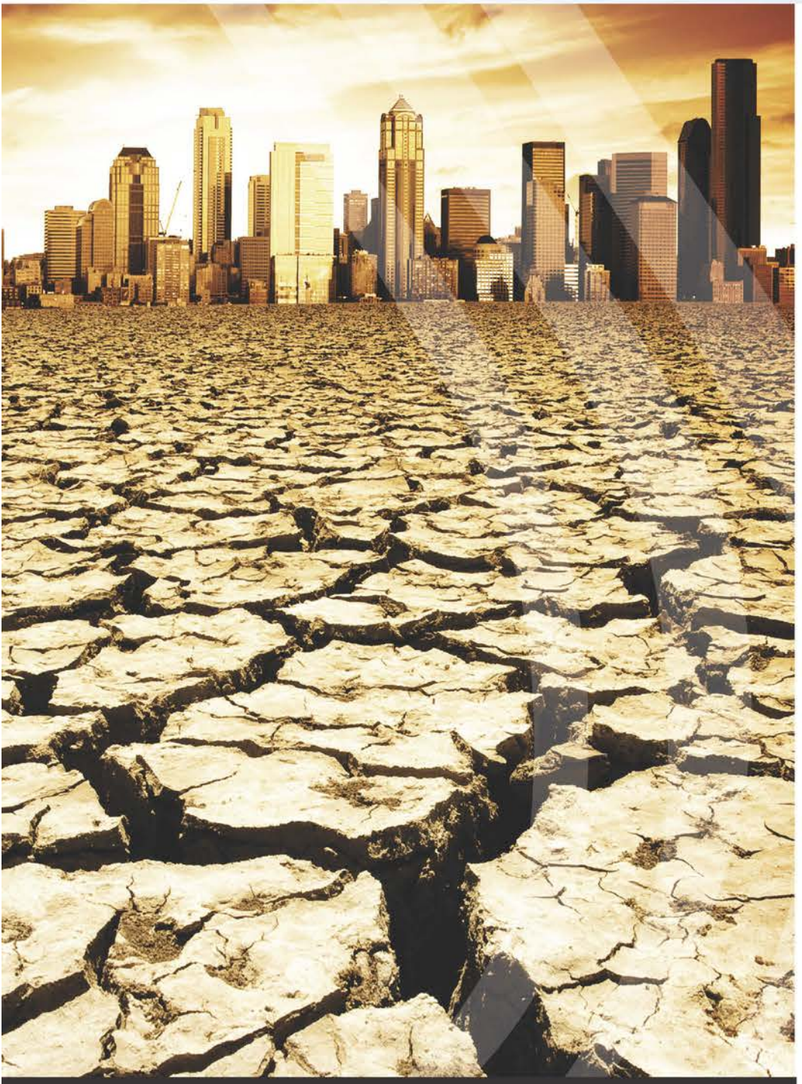
We have irrefutable scientific proof that our world is changing.

As our climate changes faster and more irreparably
than we anticipated, we're finding that the planet and all of the species
on it are more sensitive than we thought.

We don't need to be afraid,
but we do need to be realistic.

The actions that we take over the next few years will determine
the fate of our planet, and all the species on it.

FACT: OUR CLIMATE CHANGE IS TRANSFORMING



For more information, read Meltdown Meet Motivation

The United Nations Intergovernmental Panel on Climate Change (IPCC) recently issued a report confirming that global warming is "**unequivocal**" and that humans are without doubt responsible.

The report verifies that last three decades have been the **hottest on record**, ever.

The frequency and severity of extreme climate events is accelerating. There was 1 single billion-dollar storm event per year in the 1980s; 2 per year in the 1990s; 5 per year in 2010 in 2011; and 14 in 2012. The Philippines super storm in 2013 brought landfall winds 50% more intense than Katrina's.

We have exceeded 400 parts per million (PPM) of carbon emissions in the atmosphere. This level of carbon dioxide, as well as other heat-trapping greenhouse gasses (like methane), is the **direct cause of increased global temperatures**.

In the beginning of 2013, the Federal Government Accountability Office (GAO) added climate change to its "**High Risk**" list, identifying climate instability as one of the largest vulnerabilities of the federal government.

FACT: TEMPERATURES ARE RISING

Due to climate change, temperatures have already risen approximately .8 degrees Celsius.

According to the International Energy Agency (IEA), if temperatures rise, an **“irreversible feedback system”** will be triggered, where a vicious cycle of increased heat capture and greenhouse gas release will **destabilize our atmosphere** in a way that is incompatible with our current understanding of an organized global community.

The IEA says that “our present course leads to certain catastrophe.” In order to stabilize temperatures, global climate emissions must **peak within 5-10 years** and **decline rapidly every year thereafter**.

We have the financial resources and proven technology to reach **net-zero emissions** in 10 years. What we need most now is the **desire, determination, and discipline** to act accordingly.

For more information, read Eye of the Storm

FACT: SEA LEVELS ARE RISING

The National Academy of Sciences says that every degree of global warming due to carbon pollution will cause a **4.2 foot rise in sea level**.

Our current carbon emission levels are forecasted to result in **a 4 foot minimum sea level rise,** which could submerge 3.6 million people in 316 coastal cities, most of which are located in California, Texas, Louisiana, Florida, North Carolina, New Jersey, and New York.

By the end of the century, sea levels could rise over **23 feet**, threatening 1,429 municipalities and affecting over 18 million people.

For more information, read Hub of Innovation

Fact: Humans ARE the Tipping Point

Carbon emissions from human activity has contributed to a **5% increase in atmospheric moisture**, which is leading to climate instability and extreme weather events.

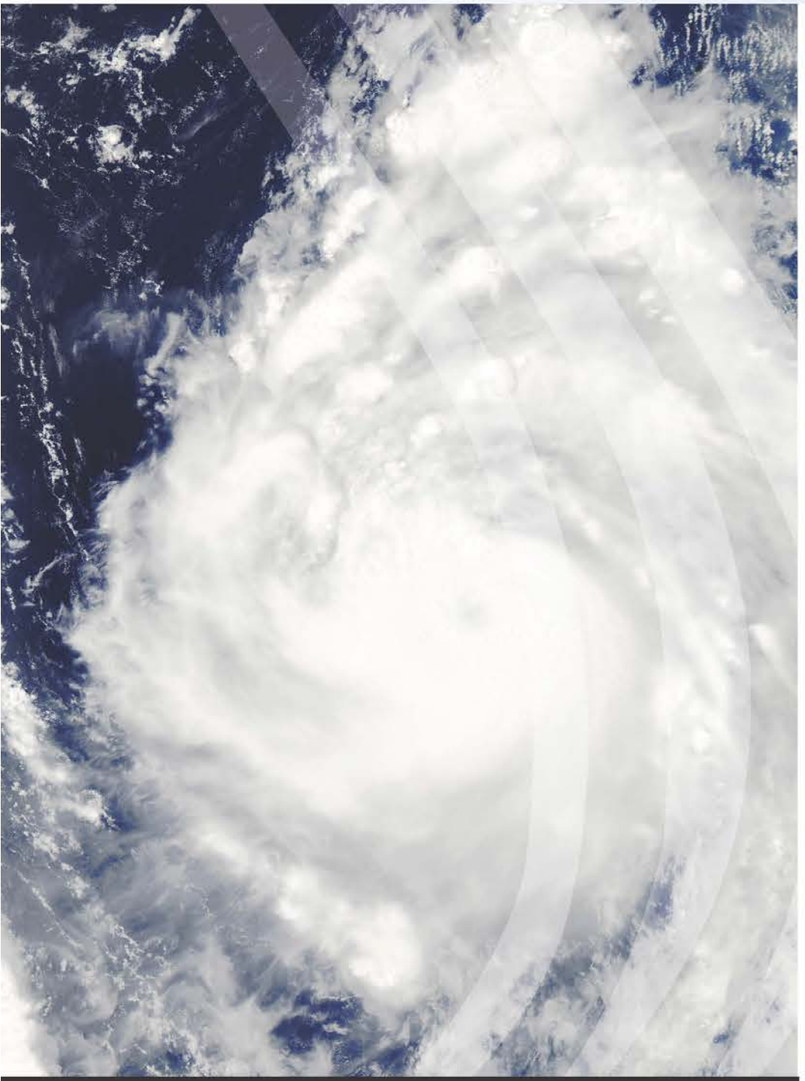
If we maintain our status quo, the global temperature will likely increase **4-5 degrees Celsius,** which would destabilize life as we know it on this planet.

Science indicates that we can release only 500 more gigatons of carbon into the atmosphere before we cross the barrier that **irreversibly changes our planet**.

At our current rate of energy use, it would take only **14 years** before the planet hits its maximum carbon intake potential.

For more information, read 14 Years

Prognosis: The Future if We Act Now



For more information, read Wide Awake

The Intergovernmental Panel on Climate Change forecasts that:

- Climate change will impact lives and livelihoods in almost all areas throughout the 21st century—costal zones will face rising sea levels; urban areas will grapple with extreme heat and inland flooding; and rural areas will struggle with insufficient access to drinking water.

- Climate change will reduce energy demand for heating and increase energy demand for cooling in the residential and commercial building sectors.

- Agricultural production will continue to be negatively affected due to warming, drought, precipitation variability, and climate extremes, which will lead to ongoing increases in food prices. Yield from major crops (namely, wheat, rice, and maize) is already suffering from increasing temperatures and is expected to decline by 2% by 2050, even while demand is anticipated to increase by 14% during the same timeframe due to population increases.

- Melting snow and ice are altering hydrological systems, affecting water availability and quality.

Prognosis *(continued)*

For more information, read Wide Awake

The Intergovernmental Panel on Climate Change forecasts that:

- Climate change is likely contributing to increased human sickness and mortality rates, mostly attributable to extreme weather events, diminished food production, and lack of clean water.
- In response to climate change, animals have been forced to shift their seasonal activities and migration patterns. Many species may not be able to find enough suitable habitat to avoid extinction during the 21st century.
- Throughout the 21st century, climate change impacts will slow down economic growth, expand poverty in urban areas and emerging “hunger hotspots”, and trigger new poverty pockets. Financial losses will increase exponentially with each degree rise in temperature.
- The time to act is now—the opportunity to reduce climate change risk will diminish over time and, in some parts of the world, has already expired.

The Backlash: High Financial Costs

For more information, read
Weather and the Built Environment

According to the National Oceanic and Atmospheric Administration (NOAA), 2011 and 2012 were the two most extreme years on record for destructive weather events, resulting in more than **$170 billion in damages**.

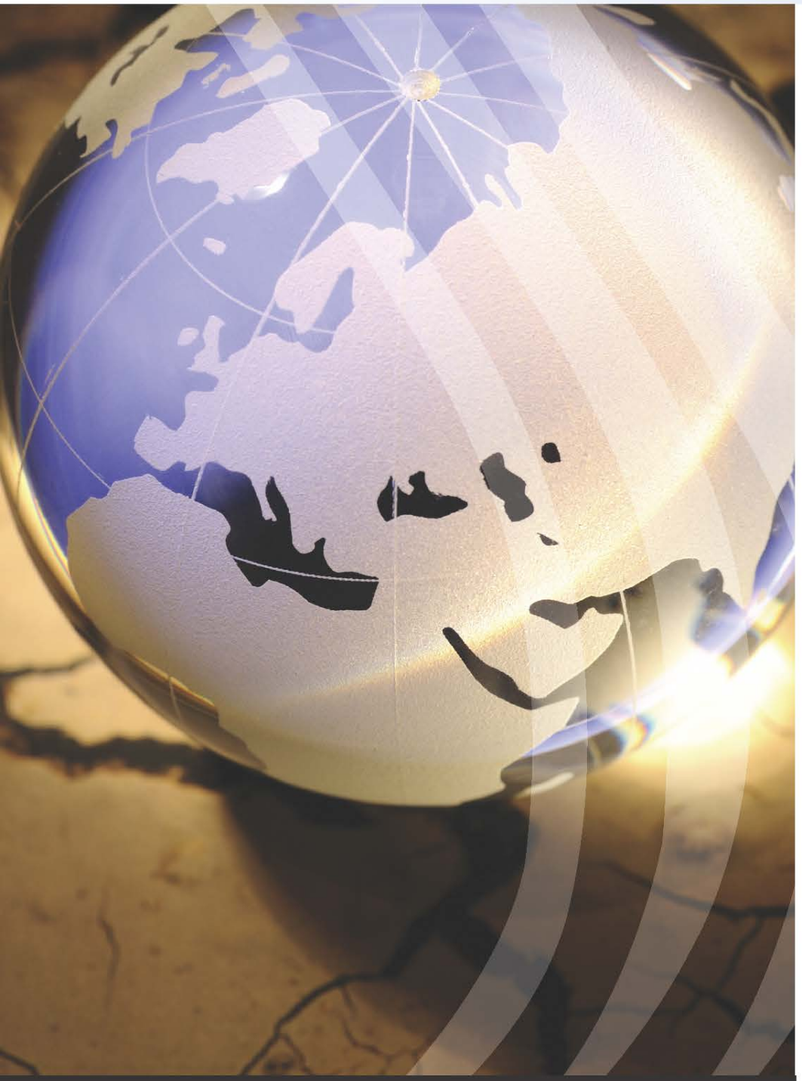
Weather has a major impact on the built environment, and restoration after an extreme weather event costs approximately **fourteen times** more than prevention.

States are now spending more money on **natural disaster restoration** than on education.

We need to adjust to a “new normal” of a more **adverse and costly climate**.

It will require a sizable amount of money to transform our economic system, but we simply **can’t afford not to change.**

The Backlash: Global Suffering



For more information, read
The Dark Shadow of Climate Change Politics

Climate change doesn't care about gender, race, class, occupation, or sexual orientation. Everyone will be affected by it.

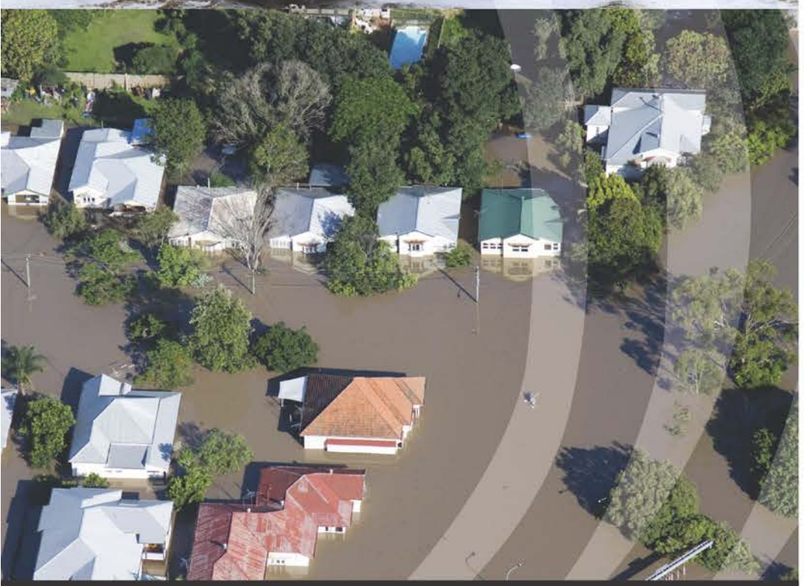
Poor people and developing countries are expected to bear the brunt of climate change, since they will lack the resources necessary to adequately deal with reconstruction, migration, or adaptation. Climate change is expected to exacerbate poverty in low income countries and create new poverty pockets in middle and high income nations (primarily attributable to slowed economic growth and increased food prices.)

Only four developed countries are included in the top 20 countries that are expected to be hit hardest by climate change.

Honduras, Myanmar, and Haiti suffered the most from climate related disasters from 1993-2012.

The United Nations Environment Programme (UNEP) forecasts that, over the next decade, Bangladesh, Sudan, Siberia, Australia, Myanmar, Vietnam, Cambodia, Dominican Republic, the Philippines, and China will be most severely affected—environmentally, socially, and economically—
due to rising sea levels, escalating drought, increased flooding, and melting permafrost.

Why Act: The Moral Imperative



The **moral fiber** of our society is being tested by natural disasters like super storms, wildfires, floods, and droughts.

Our current anemic approach to the changing climate is equivalent to applying a Band-Aid to an aneurism. The decisions we make today will **determine the future of the planet**.

How will we respond in the **face of adversity**?

- Who will we become in the face of these trying times?
- Will we rise to the challenge of rebuilding our cities and communities responsibly, sustainably, and environmentally appropriately?
- Will we develop the courage to deploy wisdom and long-term consideration that has been missing from our approach to the environment for too many decades?

For more information, read
Moral Imperative of Sustainability

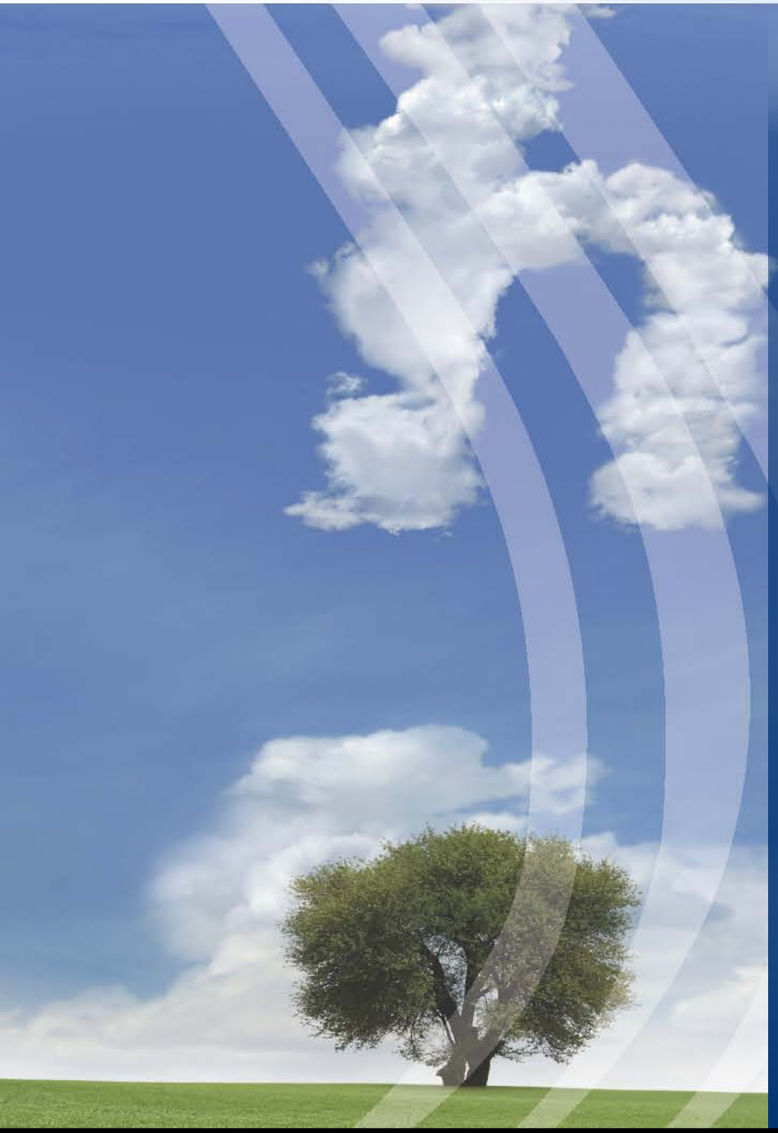
There is Hope: The Good News

According to the National Resources Defense Council (NRDC), for the first time in modern history, the national growth rate for electricity consumption has dropped below that of the population over the past decade, primarily due to energy efficiency measures.

We have doubled the economic productivity of the oil that runs our vehicles and the natural gas and electricity that runs everything else. As a result, across the U.S., total energy used per dollar of goods produced is down; gasoline per mile driven is down; and the cost of energy services (from lighting to refrigeration) is down.

For more information, read Profiles of Courage

There is Hope: The Good News *(continued)*



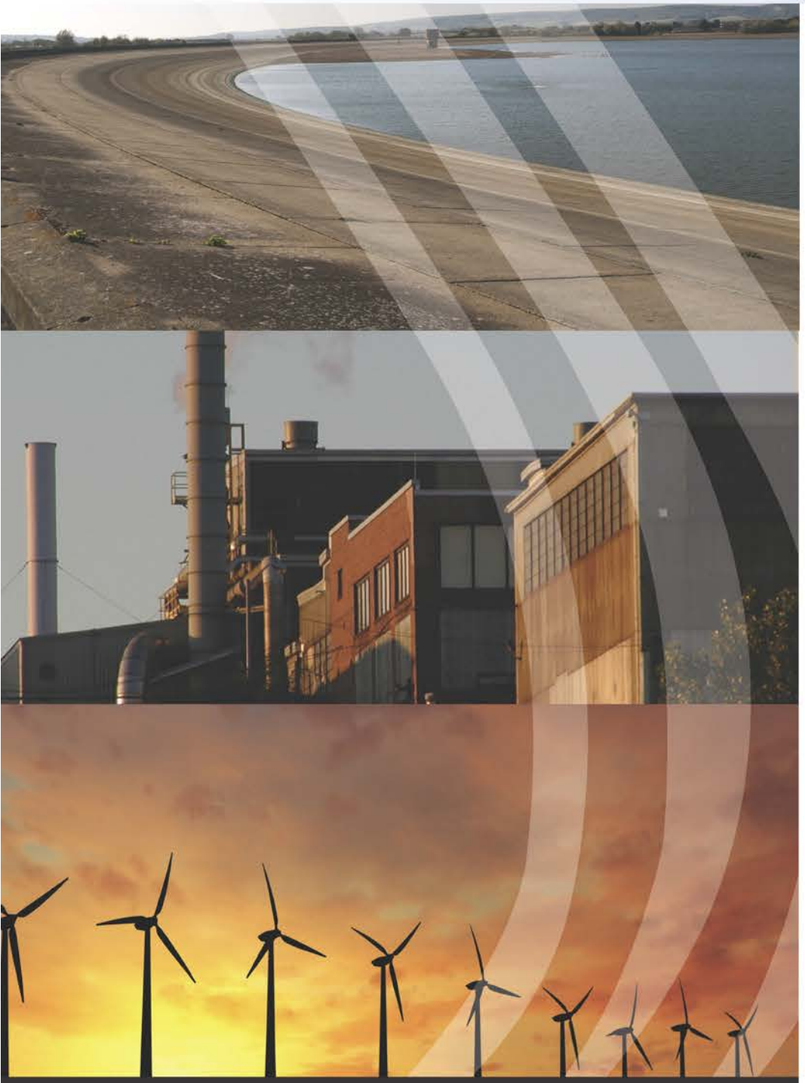
Since increasing energy efficiency is far less costly than adding other energy resources like fossil fuels, our nation is saving hundreds of billions of dollars annually, helping workers and companies compete worldwide, and making our country more energy-secure.

The use of oil and coal used in vehicles, homes, and businesses in the U.S. continues to decline, down 14% and 25% respectively in 2012 from peak usage rates in 2005, with further reductions expected due to fuel economy, clean car standards, and the desire to get away from “dirty and obsolete power generation.”

Furthermore, large corporations who are embracing sustainability are realizing substantial cost savings from eco-efficiency (for example, Interface Flor reports that it has achieved $450 million in savings over 10 years from its green initiatives, and Unilever has saved $395 million in two years) as well as significant top line revenue gains from sustainability focused product innovation (Levis reported $500 million in green gains and General Electric reported $130 billion from its portfolio of green products and clean technology solutions).

For more information, read Profiles of Courage

Incremental Change is Not Sufficient



Incremental change is no longer enough (we could have taken incremental steps if we had started combating climate change in the 1970's, but that window has long since closed.)

The only way out of this titanic crisis is through bold structural changes that will dramatically **increase the cost of oil** and put a **price on carbon emissions**. Fossil fuel industry is the only sector that doesn't pay for its waste.

If we are proactive about dealing with climate change, we will **save lives, improve our quality of life, and actually provide financial stimulus**. If we don't act now, climate change will cause serious damage in all areas of our society, economy, and environment.

For more information, read Creative Destruction

Externalities Matter

For more information, read A Balanced Budget?

We must **include sustainability** when we measure our country's GDP and ongoing financial viability.

In our ever-evolving global economy, countries that enact sustainability legislation will win because:

- They will **level the playing field** for sustainable companies, green lifestyle choices, and clean energy sources, thereby reducing energy use, saving quickly diminishing water resources, and decreasing overall operating costs.
- They will invite, enable, and embrace further **innovation of enabling technologies and green products.**

Effective **environmental strategies** simultaneously encourage economic activity, spur the adoption of renewable energy, and reduce carbon emissions.

Cities are Key

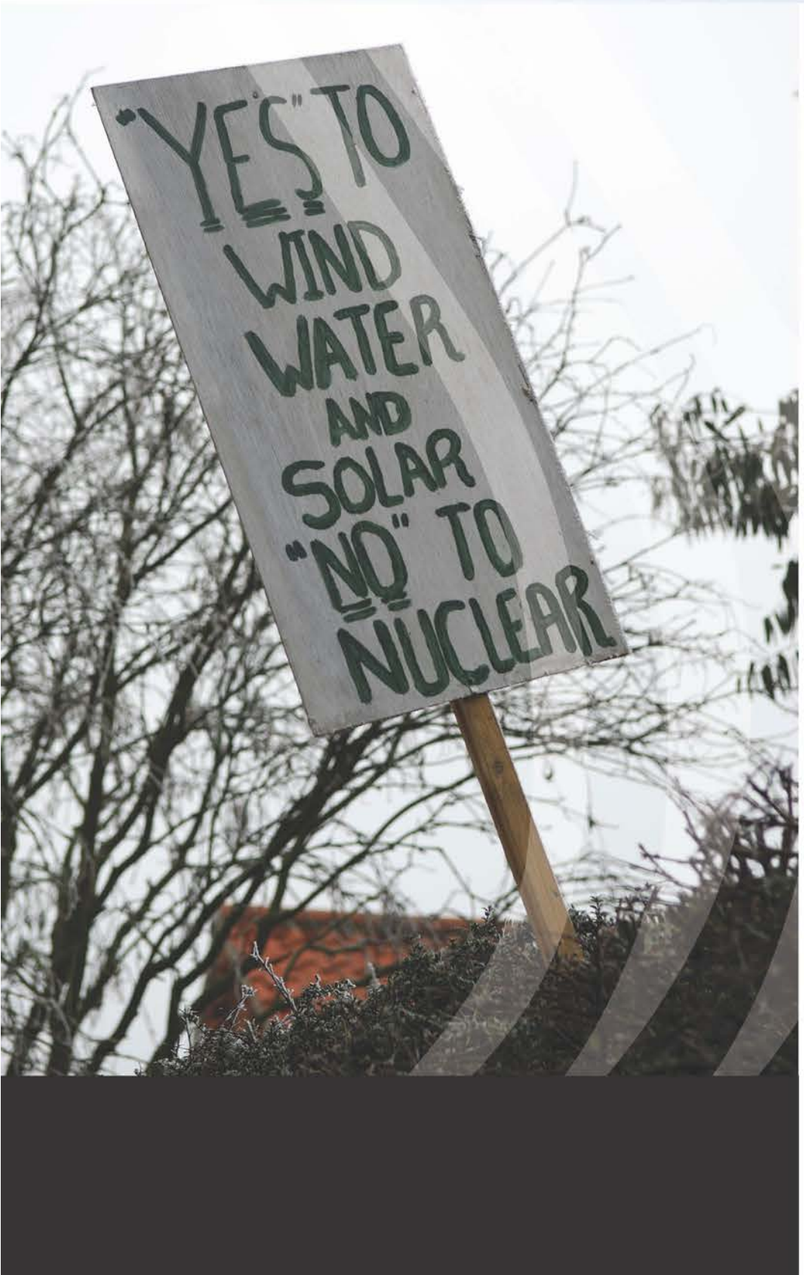
Cities are making the most interesting and comprehensive decisions when it comes to sustainability. They're dealing with megatrends on a daily basis and creating customized plans that address their unique issues and challenges.

The quickest adoption of renewables, intelligent infrastructure, green building requirements, and other progressive policies is being driven by mayors that have the political will to make hard decisions and can garner support from a motivated local constituency.

Cities are innovating by necessity. Green cities like San Francisco and Vancouver effectively utilize local resources in creative ways, incentivize their residents to support sustainable programs, and have consistent policy across multiple administrations.

The problems that cities are facing now will assist in the creation of strategies that can serve as roadmaps for short-term response and long-term policy at the state, national, and international levels.

Community Action



Don’t acquiesce. Activate!

The time is here to act with our votes, our purchasing dollars, our corporate power, and our individual voices.

Being neutral is the same as doing nothing, which is no longer acceptable.

- Reduce: set an example by limiting your personal impact , using less energy, water, and other resources, and producing less waste
- Motivate: rally your community to take action
- Advocate: educate and vote for appropriate public policy on local, state, and national level
- Liberate: encourage individuals, companies, municipalities, and governments to divest from investments in fossil fuel

Raise Your Voice

SPEAK UP

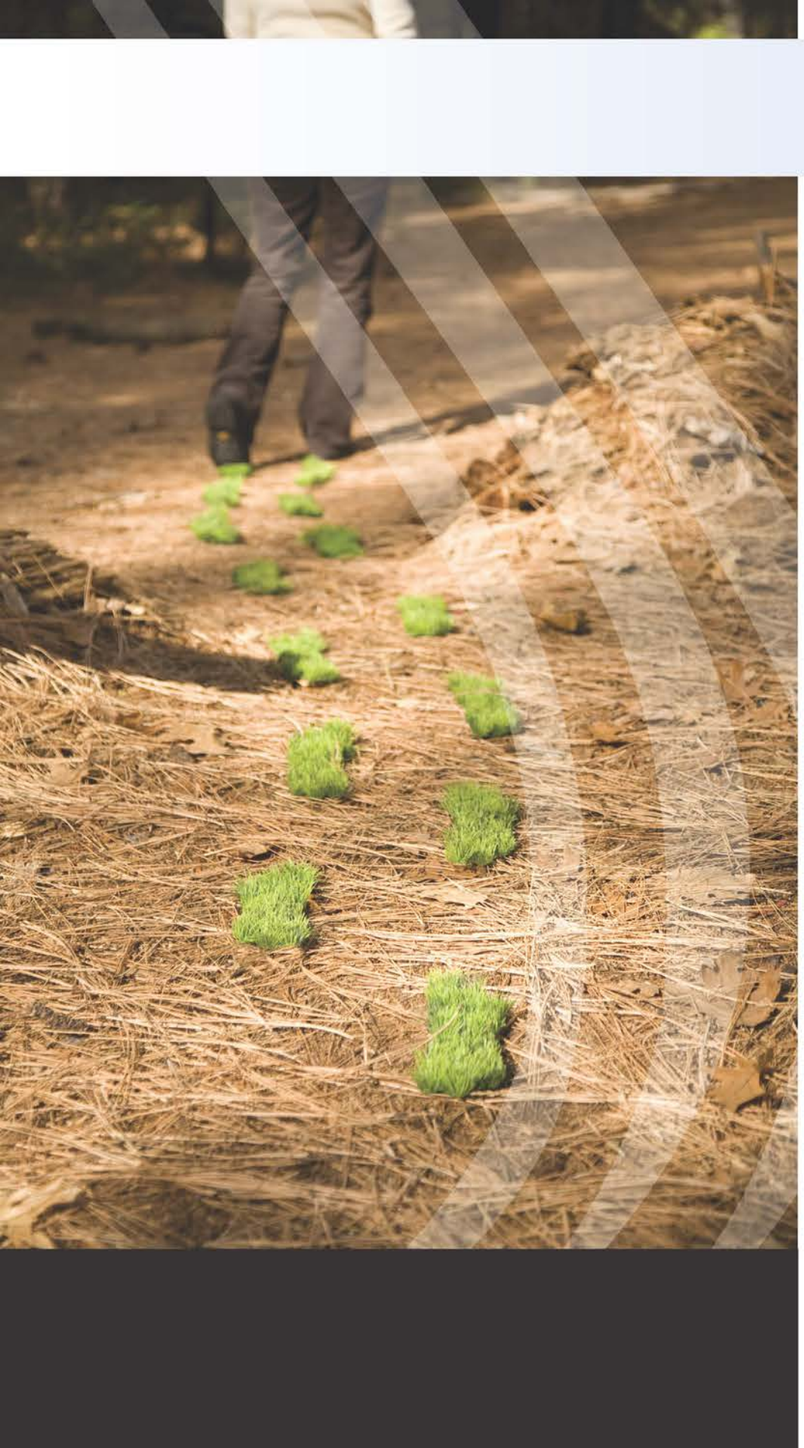
We have more influence than we know on our families, communities, and companies. People listen to us when we're passionate about something. So speak loudly, freely, and clearly about what's happening to the planet. We manifest what we see. Share your ideas about how we can create a sustainable future and the world around you will change in positive and unexpected ways.

STAND UP

You wouldn't stand for social discrimination, so don't stand for environmental injustice. Be the change you wish to see in the world, and encourage others to do the same. Don't be afraid to combat climate myths or challenge the claims of climate deniers!

SHOW UP

If you're serious about climate change, you can't be neutral. The time for action is now. Run for office or actively support people running for Congress, city council, school board, or other influential positions who have strong climate action plans. And hold their feet to the fire—make sure that they're walking and not just talking.



Share Your Time

BE ACTIVE

Affect positive change by participating in and donating to climate and environmental groups on a local, state, and national level. Want climate action? Donate to 350.org. Love animals? Give to World Wildlife Fund. Like to fish? Donate to Trout Unlimited. Plant trees with Trees for our Future. Offset your footprint by purchasing carbon credits from TerraPass. Can't find an organization that you like? Start one!

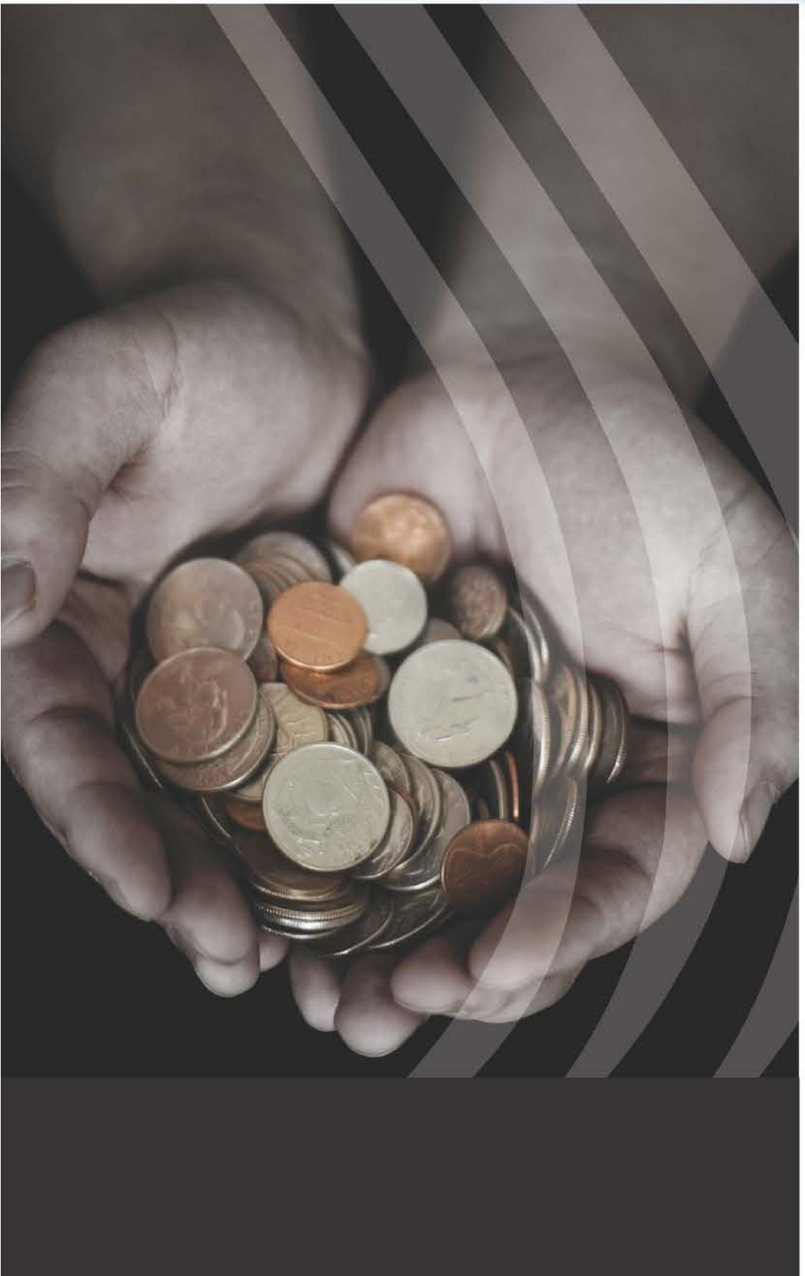
SMALL CHANGES MAKE A BIG DIFFERENCE

Don't underestimate the power of little things. You don't have to renounce all of your worldly possessions and live in a tree in order to have a green life. Small steps add up and result in massive change. There are so many easy things you can do to make a difference and inspire people around you. Download Green Builder Media's Homeowner's Handbook for ideas to make your home and life greener.

UNDERSTAND YOUR IMPACT

Figure out how to measure, monitor, and reduce your personal carbon footprint. Encourage your friends and family to do the same. Set up fun competitions in your family or neighborhood, at work or school, that incentivize people to act more environmentally responsible. Want to engage your kids in the conversation, visit VISION House Green for kid-friendly tips and games.

Spend Your Dime



YOUR MONEY HAS POWER!

Making purchasing decisions that are aligned with your green values are perhaps the most influential way to manifest your priorities. Do you want a future that is filled with dirty energy, water, and air, or one that is healthy, clean, and safe? It's simple economics—purchasing green products will drive demand, increase supply, and lower prices. It's also important to find out how your dollars are being spent by your utility, municipality, state government, and other groups that you support. After all, money talks, and those who have the gold make the rules.

KNOW THY SUSTAINABILITY STRATEGY

It's important to show support for companies who have strong corporate Sustainability strategies and are taking a stance on climate change (feel free to boycott the ones who aren't!) There are lots of companies doing good things in all areas of the marketplace—from apparel (Patagonia) to appliances (Bosch) to snacks (Cliff Bar). Check out 1% For The Planet for more information about companies who are supporting climate action.

SHARE THE WEALTH

Join individuals across the country and corporations like GM, Intel, Nike, and Starbucks in signing the Climate Declaration to encourage policy makers to pass meaningful energy and climate legislation. Get your Alma Mater to sign the Climate Commitment and join colleges and universities around the country who are creating comprehensive plans to achieve climate neutrality.

Make a Difference!

Here are a few quick and easy ways that you can reduce your environmental impact:

At home:

- Your grandma was right—turn down your heat and wear a sweater!
- Got a drafty home? Contact an expert to find out if your house is sealed and insulated properly.
- Energy Star appliances and LED lights can cure all your ills.
- Don’t be a water hog! Monitor your water use and only use low flow plumbing fixtures.
- All those hippies couldn’t have been wrong—make reduce, reuse, & recycle your personal mantra.
- Composting is beautiful!
- Ditch the lawn—it takes too much water, and, besides, who wants to mow on Sundays when you could be watching football!
- Don’t be a scrooge—support green power! Either invest in your own renewable energy system or purchase green power from your utility. With solar leasing programs and affordable solar thermal for water heating making renewables accessible for everyone, there is no reason to resist!

Make a Difference!

At work:

- Put the squeeze on wasting energy by powering down your electronics when not in use.
- Cut that commute! Take public transportation, or better yet, work from home. It's amazing what can be done these days with modern technology.
- Your company doesn't recycle? Oh, that's so '80's! Get with the times—recycling is just the baseline for corporate sustainability programs anymore.
- If your company doesn't have a corporate sustainability strategy, start a green team to develop one!
- If your company does have a corporate sustainability strategy, figure out how to enhance it.
- Don't be a bad apple. Understand what effects your company's operations has on our irreplaceable planet.
- Be the voice of reason. Teach those around you about climate change facts.
- Divest! Insist that your company takes it money out of fossil-fuel based investments or R&D projects , or any other environmentally harmful initiative.

OUR WORLD IS CHANGING

Sustainability is not something you wish for.

It's something you make.

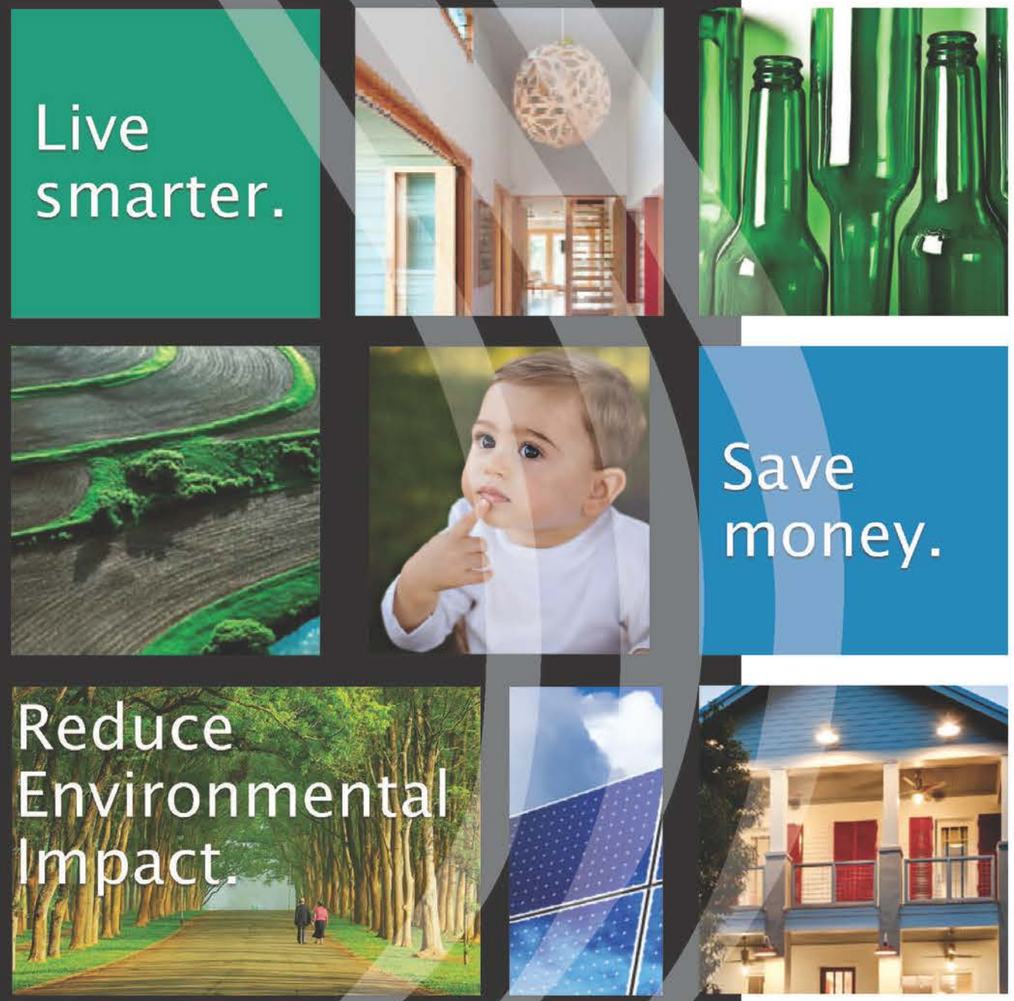
Something you do.

Something you are.

And something you give to others.....

“A living planet is a rare thing. Perhaps the rarest thing in the universe.” —Ken Brower

About Green Builder Media



Green Builder Media's mission is to effect meaningful, positive change for a better world.

As advocates for sustainability, we provide mind-expanding information that catalyzes and inspires commitment to sustainable, intelligent living.

For more information, visit us at www.greenbuildermedia.com.

About Emerald Circle

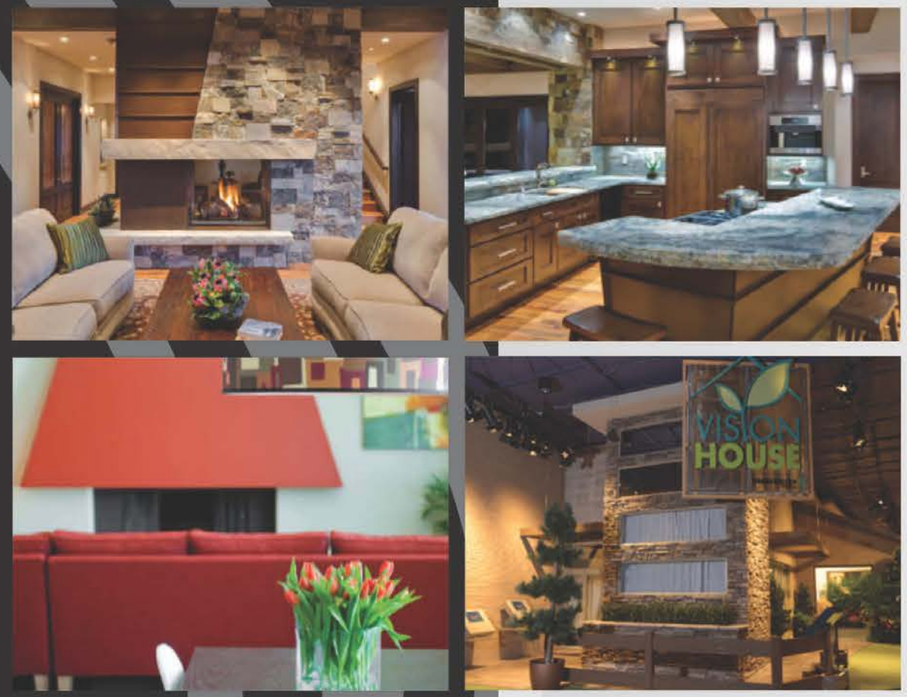
Emerald Circle Participants

EMERALD CIRCLE

The Emerald Circle is a thought-leadership program comprised of the most progressive companies in the building industry.

The purpose of the Emerald Circle is to create innovative business solutions that appropriately address today's pressing environmental challenges.

The Emerald Circle program is powered by Green Builder Media.



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For more information about the Sustainability Toolkit, Emerald Circle, or Green Builder Media please contact:

Sara Gutterman, CEO
360.376.8859
sara@greenbuildermag.com

Craig Coale, Publisher
512.344.9754
craig@greenbuildermag.com

Resources

Here are some resources if you want more information.

Green Builder Media: Homeowner's Handbook – a guide to building and remodeling sustainably
http://www.greenbuildermedia.com/the-homeowners-handbook

Intergovernmental Panel on Climate Change 2013 Report
http://www.ipcc.ch/report/ar5/wg1/#.UoP3fvnrzxQ

350: Grassroots movement to solve the climate crisis led by Bill McKibben
www.350.org

Climate Access: Seven Reasons Why the Public is Not Engaged on Climate
http://www.climateaccess.org/blog/seven-reasons-why-public-not-engaged-climate

National Geographic: How climate change has affected sea level with graphic images
http://ngm.nationalgeographic.com/2013/09/rising-seas/folger-text

Cool Sustainability Links

Here are some fun sustainability videos that we thought you'd enjoy.

Green Builder Media: Green tips for homeowners
http://www.greenbuildermedia.com/green-builder-media-videos

The Guitar of Reality: Video featuring guitar made from beetle-kill wood for Jack Johnson
http://climaterealityproject.org/the-guitar-of-reality/

Follow The Frog: How not to fight sustainability…and one way you can!
http://www.youtube.com/watch?v=3iIkOi3srLo

Rachel Beckwith's Last Wish Brings Clean Water to Over 37,700
http://www.youtube.com/watch?v=nC_vXAF-pBM

Carbon Visuals: Visualization of New York city's carbon footprint
http://www.youtube.com/watch?feature=player_embedded&v=DtqSIplGXOA

Conversation Starters

Here are some topics for discussion in your company and community.

Corporate Toolkit:

What is our company currently doing to affect change?
What changes can be made immediately to reduce our carbon footprint?
What changes can we implement over the next year?
How can we engage our employees to reduce their impact at home?
Are there ways we can engage our suppliers, customers, community?
What can we do to encourage our lawmakers to make sustainable decisions?

Consumer Toolkit:

What are you personally doing to combat climate change?
What is are three additional steps you can take?
How can we engage our families, neighbors and community?

Rebuttal Points

Here are some talking points that you can use to refute those pesky climate deniers!

Argument: The sun is heating up the planet, not humans.
Rebuttal: In the last 35 years of global warming, the sun has shown a slight cooling trend. Sun and climate have been going in opposite directions.

Argument: The climate has changed before, even before humans were here.
Rebuttal: Climate reacts to whatever forces it to change at the time; humans are now the dominant forcing. Natural climate change in the past proves that climate is sensitive to an energy imbalance. If the planet accumulates heat, global temperatures will go up. Currently, CO2 is imposing an energy imbalance due to the enhanced greenhouse effect. Past climate change actually provides evidence for our climate's sensitivity to CO2.

Argument: There is no consensus about climate change.
Rebuttal: 97% of climate experts agree humans are causing global warming, including the scientists from the Academies of Science from 19 countries plus many scientific organizations that study climate science. More specifically, around 95% of active climate researchers actively publishing climate papers endorse the consensus position.

Argument: Many scientists refute the consensus.
Rebuttal: Close inspection of the studies alleged to refute man-made global warming finds that many of these papers do no such thing. Of the few studies that do claim to refute man-made global warming, these repeat well debunked myths.

For more information, visit
Climate Progress

Rebuttal Points

Argument: Climate models are unreliable.
Rebuttal: Models successfully reproduce temperatures since 1900 globally, by land, in the air and the ocean. While there are uncertainties with climate models, they successfully reproduce the past and have made predictions that have been subsequently confirmed by observations.

Argument: The temperature record is unreliable.
Rebuttal: The warming trend is the same in rural and urban areas, measured by thermometers and satellites. Numerous studies into the effect of urban heat island effect and microsite influences find they have negligible effect on long-term trends, particularly when averaged over large regions.

Argument: We're heading into an ice age.
Rebuttal: We need to be thinking about global warming impacts in the next 100 years, not an ice age in over 10,000 years. The warming effect from more CO2 greatly outstrips the influence from changes in the Earth's orbit or solar activity, even if solar levels were to drop to Maunder Minimum levels.

Argument: The planet is actually cooling.
Rebuttal: The last decade 2000-2009 was the hottest on record. Empirical measurements of the Earth's heat content show the planet is still accumulating heat and global warming is still happening. Surface temperatures can show short-term cooling when heat is exchanged between the atmosphere and the ocean, which has a much greater heat capacity than the air.

For more information, visit
Climate Progress

Rebuttal Points

Argument: Extreme weather isn't caused by global warming.
Rebuttal: Extreme weather events are being made more frequent and worse by global warming. There is growing empirical evidence that warming temperatures cause more intense hurricanes, heavier rainfalls and flooding, increased conditions for wildfires and dangerous heat waves.

Argument: There's no empirical evidence.
Rebuttal: There are multiple lines of direct observations that humans are causing global warming. Direct observations find that CO2 is rising sharply due to human activity. Satellite and surface measurements find less energy is escaping to space at CO2 absorption wavelengths. Ocean and surface temperature measurements find the planet continues to accumulate heat. This gives a line of empirical evidence that human CO2 emissions are causing global warming.

Argument: Animals and plants can adapt to global warming.
Rebuttal: Global warming will cause mass extinctions of species that cannot adapt on short time scales. A large number of ancient mass extinction events have been strongly linked to global climate change. Because current climate change is so rapid, the way species typically adapt (e.g. – migration) is, in most cases, simply not be possible. Global change is simply too pervasive and occurring too rapidly.

Argument: Humans are too insignificant to affect global climate.
Rebuttal: Humans are small but powerful, and human CO2 emissions are causing global warming. Atmospheric CO2 levels are rising by 15 gigatons per year. Humans are emitting 26 gigatons of CO2 into the atmosphere. Humans are dramatically altering the composition of our climate.

For more information, visit
Climate Progress

Rebuttal Points

Argument: CO2 lags temperature.
Rebuttal: Recent CO2 increase has caused recent warming without any time lag. When the Earth comes out of an ice age, the warming is not initiated by CO2 but by changes in the Earth's orbit. The warming causes the oceans to give up CO2. The CO2 amplifies the warming and mixes through the atmosphere, spreading warming throughout the planet. So CO2 causes warming AND rising temperature causes CO2 rise.

Argument: CO2 is not a pollutant.
Rebuttal: Excess CO2 emissions will lead to hotter conditions that will stress and even kill crops. While there are direct ways in which CO2 is a pollutant (acidification of the ocean), its primary impact is its greenhouse warming effect. While the greenhouse effect is a natural occurance, too much warming has severe negative impacts on agriculture, health and environment.

Argument: CO2 was higher in the past.
Rebuttal: When CO2 levels were higher in the past, solar levels were also lower. The combined effect of sun and CO2 matches well with climate.

Argument: Carbon limits will harm the economy.
Rebuttal: Various economic estimates find the net economic impact of a price on carbon will be minor. Economic assessments of proposed policy to put a price on carbon emissions are in widespread agreement that the net economic impact will be minor. The costs over the next several decades center around $100 per average family, or about 75 cents per person per day, and a GDP reduction of less than 1%.

For more information, visit
Climate Progress

Rebuttal Points

Argument: You're just overreacting. Things aren't that bad.
Rebuttal: The negative impacts of global warming on agriculture, health & environment far outweigh any positives. We don't need to panic, but we need to be smart about the decisions we make over the next decade in order to mitigate the impact risk of climate change.

Argument: It's too hard, I don't want to think about it.
Rebuttal: Scientific studies have determined that current technology is sufficient to reduce greenhouse gas emissions enough to avoid dangerous climate change. The argument that solving the global warming problem by reducing human greenhouse gas emissions is "too hard" generally stems from the belief that (i) our technology is not sufficiently advanced to achieve significant emissions reductions, and/or (ii) that doing so would cripple the global economy. However, studies have determined that current technology is sufficient to reduce greenhouse gas emissions the necessary amount, and that we can do so without significant impact on the economy.

For more information, visit
Climate Progress