

JANUARY 2016

THREAT MULTIPLIER

Climate Change & the State of Our Union



NEXTGEN **CLIMATE**

#GREEN FOR ALL





ADDRESSING CLIMATE CHANGE IS CRITICAL TO ENSURING THE STATE OF OUR UNION REMAINS STRONG & SECURE

President Obama is scheduled to address Congress for his final State of the Union—outlining his vision for the future and highlighting the most pressing issues of our time including the economy, healthcare, national security, and climate change.

Since 2009, President Obama has made significant progress—both at home and abroad—to ensure that the state of our union is strong. But our union will never truly be secure until we tackle climate change, which is inextricably linked to our economy, our health, and our national security. It is impossible to decouple the state of our nation from the potentially devastating impacts unchecked climate change will have on our country, or from the benefits that acting on climate change will have on our future prosperity.

In 2015, we saw unprecedented action on climate change and clean energy. Domestically, the Obama administration introduced historic limits on dangerous carbon pollution from power plants, our country's largest source of carbon emissions. Internationally, President Obama has engaged with world leaders, most notably securing an historic agreement with China to place limits on their pollution for the first time in history.¹ This important leadership set the stage for a successful Paris climate negotiation in December, where more than 190 countries submitted plans and committed to significantly reduce their greenhouse gas emissions.²

As President Obama begins his final year in office and the race to be his successor is underway, one thing is clear—addressing climate change is essential to ensuring America remains strong and secure, our economy continues to lead the world, our society becomes more just, and our children have access to a brighter, better future.

This paper compiles examples of the impacts that climate change will have on both the United States and the global community in 2016 and beyond. Presidential candidates should take note: their plans for improving and securing our nation must address climate change—there is too much at stake to ignore the greatest challenge our country faces.



ECONOMY

Our economy is rebounding from the Great Recession, but left unchecked climate change threatens this positive economic growth.

Our nation is finally emerging from the Great Recession—the stock market has rebounded, there have been 68 straight months of private sector job growth, and last month, the unemployment rate fell to five percent, the lowest in seven years.³ President Obama’s leadership in achieving these milestones is worth celebrating, but the consequences of climate change gravely threaten to eliminate these gains and undermine our future economic prosperity. Leading researchers predict that inaction on climate change will reduce the United States’ Gross Domestic Product (GDP) by five percent by the middle of the century and 36 percent by the end of the century.⁴ To put that in perspective, GDP declined by only four percent during the Great Recession, making the cost of inaction on climate change economically devastating.⁵

But there is still time to avoid these consequences and instead spur economic growth. By transitioning to a clean energy economy, our country will create millions of jobs, raise household income, and drive economic growth.⁶ Building a clean energy economy will not only help solve climate change but is a positive economic growth strategy for our country.

THE AMERICAN WORKFORCE

American families and agriculture workers will be hit the hardest by failing to act on climate change.

As temperatures rise due to climate change, productivity in the workforce will decline. The construction, utility maintenance, and agriculture sectors will see productivity reduced, particularly in the hottest parts of the nation such as the Southeast.⁷ A recent report from the Environmental Protection Agency (EPA) found that without greenhouse gas mitigation, over 1.8 billion labor hours are projected to be lost by the end of the century, costing workers an estimated \$170 billion in lost wages.⁸ As extreme heat spreads across the middle of the country, some states in the Southeast, lower Great Plains, and Midwest risk up to a 70 percent loss in average annual crop yields by the end of the century, proving catastrophic to farming communities in America’s heartland.⁹ Moreover, this will greatly impact availability of staple crops like soy, cotton, and wheat, causing food prices to surge for American consumers.¹⁰



THE COST TO AMERICAN TAXPAYERS

Taxpayers are already paying the price for climate disasters—and those costs will only increase until we take action.

Climate change is already costing U.S. taxpayers billions of dollars each year to rebuild infrastructure damaged by rising seas, storm surge, and extreme weather. In 2012, Superstorm Sandy devastated the East Coast, killing 159 people and leaving a trail of destruction in over a dozen states.¹¹ Sandy was the second-costliest weather disaster in American history—causing a whopping \$65 billion in damage.¹² Over the years, the costs to taxpayers associated with extreme weather have steadily increased. The National Oceanic and Atmospheric Administration (NOAA), which tracks U.S. billion-dollar disaster events resulting from extreme weather, has found that severe storms caused losses of \$8 billion in the 1980s, \$26 billion in the 1990s, \$43 billion in the 2000s, and \$78 billion in the 2010s.¹³ In the past few years, the United States has experienced nearly 50 climate-related disasters each costing taxpayers over \$1 billion.¹⁴ Without strong action on climate change, these deadly events will only increase—and American taxpayers will be stuck with the bill.

INCOME INEQUALITY & POVERTY

Failing to address climate change will exacerbate income inequality and increase poverty.

Both political parties call for the reduction of poverty, and while the parties may disagree on the best approach, one thing is clear—to truly address poverty, we must address climate change once and for all. The economic burden of climate change will not be shouldered by all families equally. A recent analysis found that climate change will disproportionately impact low income households, greatly exacerbating existing inequality.¹⁵ For instance, minority and low-income communities will be disproportionately affected by heat waves, poor air quality, and extreme weather, which will only increase with climate change.¹⁶ Refusing to act on climate change will ensure that the ever-growing gap between the wealthiest in our society and the rest of our country persists and worsens.

THE BENEFITS OF CLEAN ENERGY

Addressing climate change is an essential part of any strategy to create jobs, raise household income and grow our economy.

Transitioning to clean energy will grow our economy while reducing carbon pollution to avoid the worst impacts of climate change. A recent economic analysis by ICF International and NextGen Climate America finds that transitioning to a clean energy economy, with existing technology, will increase GDP and will create over a million jobs by 2030 and up to two million jobs by 2050.¹⁷ In the construction sector alone, shifting to clean energy will create more than 460,000 jobs

Reducing greenhouse gas emissions by 80% below 1990 levels

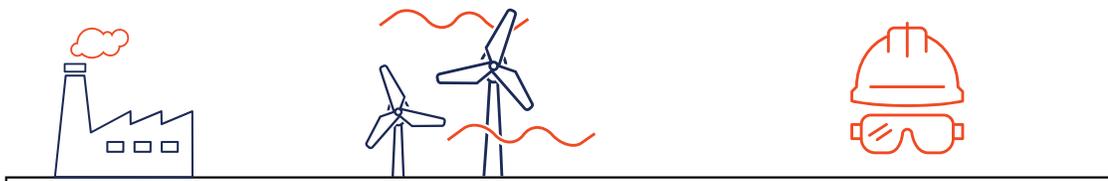


Investing in clean energy



2 MILLION

jobs added to the US economy by 2050





by 2030 and more than 1.2 million jobs by 2050.¹⁸ In addition to creating jobs, transitioning to a clean energy economy will result in concrete savings for American families. By 2050, electric bills will be reduced by \$41 billion, and household disposable income will increase by as much as \$650.¹⁹

Building a clean energy economy and cutting carbon pollution will also help prevent the negative economic impacts of climate change. The Environmental Protection Agency (EPA) estimates that a strong implementation of the Clean Power Plan will avoid an estimated \$160 billion in economic losses in 2050 and \$930 billion in 2100.²⁰ Simply put, Americans will be significantly better off in the clean energy economy.

This transition to clean energy is already well underway, and American companies are at the forefront of this shift. American businesses know that investing in clean energy is good for their bottom line. In fact, 45 major companies recently committed to cut their carbon pollution and transition to 100 percent clean energy, while 154 companies have signed the American Business Act on Climate—a voluntary pledge that sets ambitious, company specific goals.^{21, 22}

In recent years, we have seen enormous growth in the American wind and solar industries alone. In fact, the solar industry added jobs 20 times faster than the overall economy in 2014, increasing solar industry employment by a remarkable 86 percent in the last four years.²³ Additionally, the price of wind energy has fallen by more than half over the past five years.²⁴ In 2014, investment in United States for renewable energy amounted to \$38.3 billion, increasing seven-fold in the last decade.²⁵



HEALTH

Climate change threatens Americans’ health and will increase costs to our country’s healthcare system.

The impact of climate change on human health is clear. From more frequent and severe heat waves to poorer air quality, communities across the country are already experiencing the immediate effects of climate change. Worse, many of these deadly impacts are likely to fall primarily on our country’s most vulnerable populations: young children, the poor, the elderly, and communities of color.²⁶ Without strong action to reduce greenhouse gas emissions, climate change will increasingly worsen human health.

AIR POLLUTION

As climate change leads to lower air quality, Americans will feel firsthand the negative effects—from higher asthma rates to cardiovascular disease.

Already, 138.5 million Americans live in areas where the air is often too dangerous to breathe.²⁷ Extreme heat and drought lead to increased levels of the most widespread forms of pollution are exposed to: smog (ground-level ozone) and particulate matter.²⁸ Elevated levels of these pollutants are linked to asthma attacks, cardiovascular disease, and premature death.²⁹ Asthma alone affects 25 million Americans, including seven million children, and asthma attacks cause 14.2 million visits to health care

professionals annually.³⁰ There were 3,630 deaths in the United States from asthma in 2014.³¹ Poor air quality is directly linked to an increase in asthma attacks, and these instances will only increase as climate change continues to degrade air quality, greatly impacting American families and stressing our healthcare system.



AMERICANS
affected by air pollution

25
MILLION
affected by asthma

14.2
MILLION
visits to health care professionals annually

Minority populations are at greater risk of experiencing the worst effects of air pollution. Seventy-one percent of African Americans live in counties in violation of federal air pollution standards.³² Latinos are 165 percent more likely to live in counties with unhealthy levels of

particulate matter pollution and 51 percent more likely to be in communities with dangerous levels of ozone than non-Latino whites.³³

EXTREME HEAT & DROUGHT

Inaction on climate change will make extreme heat and drought—and the negative health impacts that come along with them—more frequent and severe.

Left unchecked, climate change will triple the average number of extremely hot days in the United States between 2050 and 2100.³⁴ Heat waves and longer and more intense droughts will cause more than one third of U.S. counties to experience water shortages.³⁵ Extreme heat is also the most common cause of weather-related mortality and leads to heat stroke, dehydration, cardiovascular disease, respiratory disease, and death.³⁶ Furthermore, our elderly are two-and-a-half times more likely to be hospitalized during a heat wave.³⁷ Climate change will only make these dangerous health effects worse.

WATER

Increased carbon pollution will dramatically lower water quality.

As carbon pollution continues to rise, heavy precipitation events and flooding will increase. In turn, water quality will suffer dramatically as flooding can overwhelm our nation's water infrastructure, including our sewer systems. Unsafe and dirty water leads to outbreaks of waterborne diseases, like Salmonella and E coli, and threatens the quality of life and public health in the United States. Increases in rainfall will also cause runoff of sediment, nutrients, pollutants, trash, and animal waste into rivers and lakes, making them unsafe and unusable.³⁸ Between 1948 and 1994, about half of all waterborne disease outbreaks in the United States were preceded by days of heavy rain.³⁹



THE HEALTH BENEFITS OF CLEAN ENERGY

Reducing greenhouse gas pollution will save lives and reduce rates of asthma and heart attacks.

Fossil fuel combustion releases harmful particle pollution and contributes to smog formation, both of which have staggering public health costs. Transitioning away from dirty fossil fuels to clean energy will ensure American families live longer, healthier lives. By 2030, efforts to curb carbon emissions in the electricity sector will prevent 90,000 asthma attacks, 1,700 heart attacks, 3,600 premature deaths, 360,000 missed work days, and save up to \$34 billion in avoided health care costs.⁴⁰ The EPA estimates that cutting emissions would prevent 13,000 premature deaths in the United States in 2050 and 57,000 premature deaths by 2100 and reduce the risk of extreme temperature-related deaths in the United States saving 1,700 lives by 2050 and 12,000 lives by 2100.⁴¹ This would in turn have \$21 billion in health-related economic benefits in 2050 and \$200 billion in 2100.



NATIONAL SECURITY

Climate change is a grave threat to our national security and global stability—and shifting to a clean energy economy will make our nation safer and stronger.

A recent report from the Pentagon found that climate change is an “urgent and growing threat to our national security.”⁴² It is a “threat multiplier” that will aggravate “stressors abroad such as poverty, environmental degradation, political instability, and social tensions — conditions that can enable terrorist activity and other forms of violence.”⁴³ Another report from 16 retired four-star generals and admirals warns extreme weather will put our men and women in uniform at increased risk and dubs climate change a “catalyst for conflict.”⁴⁴ According to these experts, it is in America’s best national security interest to take action on climate change.

The military and America’s veterans are already embracing clean energy. The Department of Defense —the single largest consumer of energy in the United States—recognizes that energy efficiency and clean energy are part of a strong defense strategy and has committed to deploying three gigawatts of renewable energy on military installations by 2025.⁴⁵ Recognizing the opportunities in clean energy, Solar Ready Vets, trains returning service members to work in the solar industry, which already boasts a veteran and minority employment rate of 39 percent.⁴⁶

THE REFUGEE CRISIS

Left unaddressed, climate change will create the greatest humanitarian crisis our world has ever seen.

Reflecting the concerns of our military leaders, the Syrian refugee crisis illustrates how climate change drives humanitarian disasters. From 2006 to 2011, Syria experienced devastating and extreme droughts, exacerbated by climate change.⁴⁷ During this time, two million people were displaced, contributing to conflict and the civil war that has led to the unprecedented migrant crisis that Europe now faces.⁴⁸ By the end of the century, climate change will cause areas of the Persian Gulf to suffer from such extreme heatwaves and humidity that they will likely become uninhabitable.⁴⁹ This would cause widespread migration and disastrous destabilization. Dangerous scenarios like this make international climate commitments and leadership from the United States critically important.



COP21 & GLOBAL COOPERATION ON CLIMATE CHANGE

Across the world, major businesses, young people, people of faith and more than 190 countries have committed to cutting carbon pollution.

To aid in avoiding the most serious national security implications of global climate change, the international community must work together to create concrete solutions to this problem. Thanks in large part to the leadership shown by President Obama, the COP 21 Paris climate summit has emerged as an important milestone for the United States—and the world in addressing climate change. For the first time, more than 190 countries have made commitments to address climate change, including all of the largest emitters.⁵⁰ And while Paris was a critical moment for the climate movement, it also signifies the historic momentum that has been building for months.

Many of the commitments lauded in Paris happened before world leaders even convened at COP21: China, the world's largest carbon emitter, announced it will introduce a national program to cut carbon pollution and India, the world's fourth largest carbon emitter, committed to getting 40 percent of its electricity from clean sources by 2030.⁵¹ President Obama played a crucial role internationally—inking bilateral agreements with both of these countries—while also implementing robust policy solutions like the Clean Power Plan at home. Meanwhile, America's business leaders and major banking institutions added their voices to the broad coalition calling for climate action.

This coalition was at the forefront of the Paris dialogues. At COP21, business leaders, people of faith, young people, and political leaders committed to building a more secure, more sustainable world by addressing the climate crisis. This shift is remarkable—and it is only the beginning.



CONCLUSION

America's leaders must address climate change and build a clean energy economy.

There is no question that climate change is tied directly to the most important issues in our country: our economy, our health, our national security, and our future prosperity. President Obama's leadership has put our country on a path to meaningfully cut our greenhouse gas emissions. However, in order to avoid the worst impacts of climate change, significant work remains in order to truly tackle the greatest challenge facing our country.

In order to protect and grow our economy, we must transition to clean energy. That's why NextGen Climate is calling for our country to be powered with more than 50 percent clean energy by 2030, putting us on a path to a completely clean energy economy by 2050.

As presidential candidates are vying for their chance to deliver next year's State of the Union, it is critical that they develop concrete strategies to address climate change and transition to a clean energy economy.



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