To: Willie Soon[romeosoon@gmail.com]
From: Joseph Bast
Sent: Tue 11/21/2017 4:47:13 PM
Subject: Ian Flanigan essay in honor of Bob Carter, and request for your help

Willie Soon forwarded the article below by Ian Flanigan, which recreates an excellent graph comparing temperature records to CO2 levels for the past 11,000 years based on the work of the late and great Bob Carter.

Willie also asks for help to correct Wikipedia's "the rather sickening mislabeling of Bob lifetime dedication and works as to 'promote climate change denial.'" Please write to Willie if you can help fix the Wikipedia page.

Joe

Core of climate science is in the real-world data

by Dr Ian Flanigan

The Government continues to flounder with directionless and inconsistent energy policies, inviting much public commentary, but the science these days scarcely gets a mention.

As we have seen in social policy, the strategy of the left is first to shut down debate and delegitimise any dissent from the position adopted by the left-leaning elements of the media, academia, bureaucracy, the environmental movement and renewable-energy interests.

Lacking the capacity to distinguish science from pseudo-science, the Coalition under Howard effectively acquiesced to the totalitarian-left idea that the science on global warming was settled. It dared not question the assertion that carbon dioxide was causing dangerous global warming for fear that it would be loudly denounced and ridiculed as being in denial about the harmful effects that our emissions of carbon dioxide were supposed to be having on the climate.

In doing so, the Coalition allowed the totalitarian left to define the terms of the debate. But, let us do the impermissible and look at the science behind the question of whether carbon dioxide is causing dangerous global warming.

The scientific method for investigating a new idea is to pose two falsifiable hypotheses: the null hypothesis and the alternative hypothesis. The null hypothesis tests the most obvious explanation; and the alternative hypothesis tests the new theory that the scientist is bringing to bear on the issue.

In the context of global warming, the null hypothesis is that the warming observed since the onset of industrialisation is due to natural causes; the alternative hypothesis is that this warming is due to anthropogenic carbon-dioxide emissions. Both hypotheses must be

A hypothesis can never be proved by this method but it remains viable only as long as it remains consistent with the data. You must not cherry-pick your data; the hypothesis must be consistent with all of the available data. It takes only one instance of the hypothesis being found to be inconsistent with the data for it to be falsified; and this is why the science is never "settled".

One must begin by assembling all of the available data. The data we are concerned with in this issue are the temperature and atmospheric carbon-dioxide data. The temperature data consists of the meteorological record that has been collected using various instrumental techniques since the 1850s, and also data from various "proxy" sources that enable the temperature record to be inferred. This may be done from such techniques as the measurement of isotope ratios in gas samples extracted from ice cores and seabed cores.

Using these proxy sources of temperature data, scientists have been able to reconstruct the temperature history of the planet going back thousands to hundreds of thousands of years and beyond. Samples collected from ice and seabed cores can also be used to determine the concentrations of carbon dioxide present in the air over those periods.

Figure 1 shows one example of data derived from such proxy sources. The top panel of the figure shows a declining temperature trend over the 8,000-year period from the Holocene Climate Optimum to the modern warm period (left-hand scale). It also shows that this location experienced numerous cycles of warming and cooling that involved temperature changes of the order of two degrees Celsius.

The superimposition of the temper-

Neither the cooling trend nor the cyclic behaviour of temperature is reflected in the carbon-dioxide record in the lower panel. Therefore carbon dioxide cannot be causing the observed temperature changes. No causation can exist if there is no correlation.

These data clearly show that whatever effect carbon dioxide may have on the temperature, it is far outweighed by other factors: and this falsifies the hypothesis that carbon dioxide causes dangerous global warming. The data show that there is nothing unusual about the current episode of increased global temperature in either its timing or its amplitude, which lies well within the bounds of natural variation.

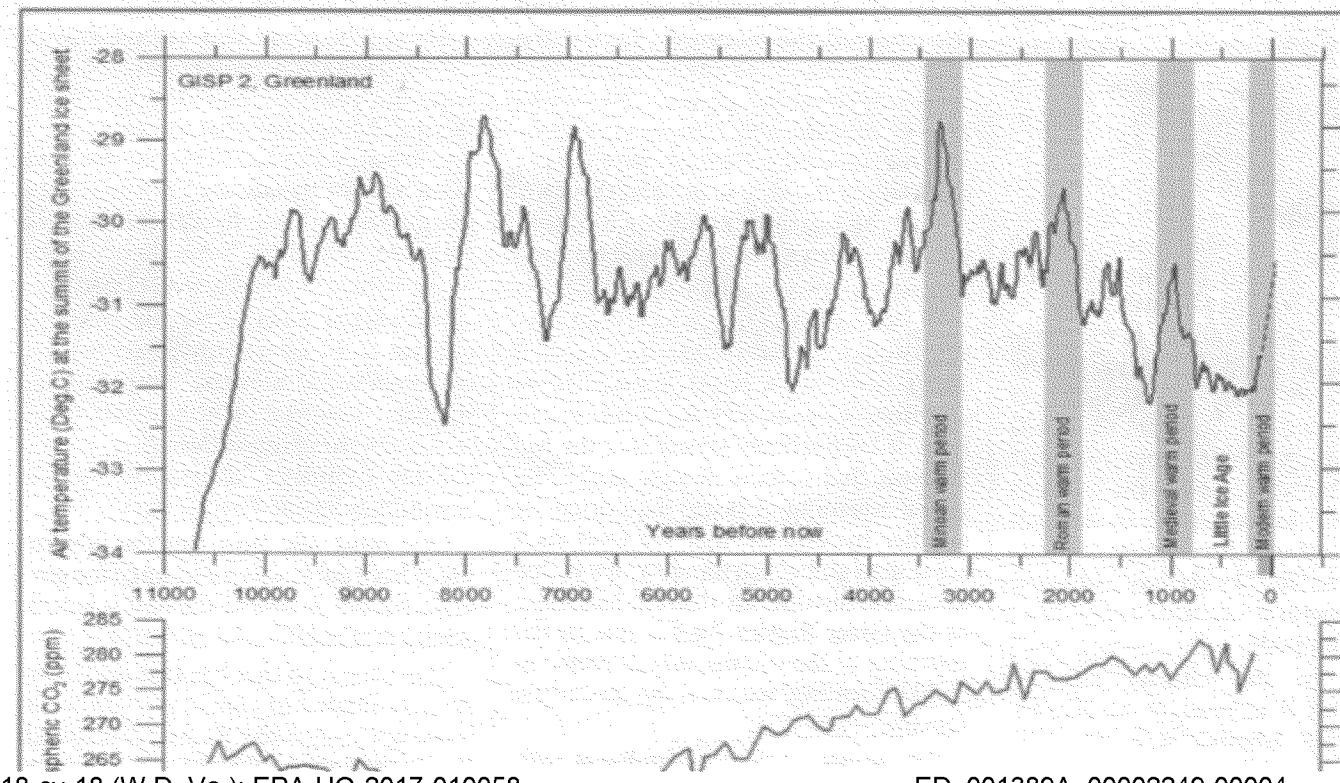
From these data we cannot ascribe any cause to the current warming event, nor is it necessary to do so. We simply observe that the data are seen to be consistent with the null hypothesis that the modern warming is due to natural causes, and inconsistent with the alternative hypothesis that this warming is due to carbon dioxide. We do not need to understand the details of the operation of the climate system, which so occupies the Intergovernmental Panel on Climate Change (IPCC).

It is important to recognise that no single data set is ideal. All available data sets have their limitations, including those of Figure 1. It is equally important to recognise that all of the available data must be considered. It is not valid to simply disregard data that don't suit you when there is no satisfactory data set available to provide all the information required on its own.

The data most commonly relied upon in making the case that carbon dioxide is causing dangerous global warming are the data from the instrumental meteorological record. Over the 167-year period of the meteorological record, it is not possible to observe the extent of natural variation in temperature that can be seen in the proxy record of figure 1. Therefore the meteorological record is incapable of being used to test the null hypothesis. This makes the meteorological record the least useful of the data sets that are available for answering the question of whether the warming observed over the last 100 years is due to increa dioxide in the atmosphere. C based on these data alone a worthless.

The main limitation of t Figure 1 is that they are de ice cores at a single location therefore be considered to the "global average" tempe the meteorological record a approximate. This does not these data can be disregarde evidence from a vast range that the warming cycles o among them the Mediae Period, The Roman Warm Minoan Warm Period and th Climate Optimum, did not at the sites from which the taken but were in fact wide probably global. (For a com discussion of the evidence, *and Earth. Global Warming: Science*, by Professor Ian Plim ble from Freedom Publishing

It is probable, however, that tude of the temperature excu the baseline in Figure 1 are



As the late Professor Bob Carter pointed out, it was not until the election to Parliament of Dr Dennis Jensen as a Liberal Member for the House of Representatives in 2004 that the Liberal Party had anyone with the scientific qualifications and training to discern the pseudo-science from the science and develop an informed approach to the global-warming issue. Dr Jensen displayed a healthy scepticism about the global-warming alarmism in his maiden speech to Parliament.

Unfortunately, Mr Howard did not put him in charge of global-warming policy. Instead, the Liberal Party continued to struggle with the issue while the myths and falsehoods associated with global warming took hold and green ideology took the moral high ground in professing to be intent on saving the planet from "carbon pollution" and the dangerous global warming it was alleged to cause.

Malcolm Turnbull entered Parliament in the same year as Dr Jensen and, in the biggest mistake of his career, Mr Howard in 2007 placed the left-leaning Turnbull in charge of Environment and Water Resources, presumably to give his environment policies some "green credentials". The opportunity to tackle the global-warming falsehoods and develop a rational energy policy was thereby lost.

The election of Donald Trump to the presidency of the United States and his rejection of the Paris Climate Change Agreement, however, provide the Australian Government with an opportunity to admit its mistake and change direction on global warming and energy policy and thereby give itself a chance of snatching victory from the jaws of defeat at the next election. It needs to find a leader who can tackle this issue head on in the face of the furious opposition that it will encounter from the ABC and the rest of the media, academia, the bureaucracies, and vested interests in the scientific and renewable energy industries.

It will be a tough fight, but it is a fight that can only be fought from within government and not from opposition. It is only when you control the appointments and the purse strings that it is possible to challenge those presenting pseudo-science as evidence and dismis
will not properly deal with t
objections to the global-wa
sensus" position.

I believe it is the only way
can be saved from the high
that are crippling our ind
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the availability of cheap a
power to lift underdevelop
out of the poverty that curr
them access to electricity,
and sanitation.

Dr Ian Flanigan (retired) obtain
in chemistry at the Research
of Chemistry (ANU).

Dedicated to the memor
late Professor Bob Carte
work did so much to infl
the context in which the
warming event should be

From: Joseph Bast
Sent: Tue 11/21/2017 4:07:40 PM
Subject: NYT: Communism is the cure to global warming

H/T Roger Bezdek, who says "You really cannot make this stuff up!" He's right. And a note to physicists getting this email: it's not about the science for these guys and gals, it never was.

https://www.nytimes.com/2017/11/20/opinion/climate-capitalism-crisis.html?action=click&pgtype=Homepage&clickSource=story-heading&module=opinion-c-col-right-region&region=opinion-c-col-right-region&WT.nav=opinion-c-col-right-region

Joe

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From: Joseph Bast
Sent: Tue 11/21/2017 2:22:23 PM
Subject: Lamar Smith: MIT Study Linking Hurricane Harvey Rainfall To Climate Change Is Alarmist Bunk

http://dailycaller.com/2017/11/20/bad-science-an-mit-study-linking-hurricane-harvey-rainfall-to-climate-change-is-alarmist-bunk/

Daily Caller

11/20/2017

BAD SCIENCE: An MIT Study Linking Hurricane Harvey Rainfall To Climate Change Is Alarmist Bunk

Posted By Rep. Lamar Smith

11/20/2017

An article published last week by The Daily Caller, entitled "Here's The Inconvenient Truth Behind MIT's Study Linking Hurricane Harvey to Global Warming," rightly exposes the major flaws in a newly-published Massachusetts Institute of Technology climate change study.

The MIT study attempts to attribute rainfall during Hurricane Harvey to climate change. As expected, media outlets are sensationalizing the findings of the study without checking the facts. The result is a continuation of the alarmist climate rhetoric we have seen for years.

Many of the extreme weather events cited by the media have no link to climate change.

This hurricane season has been no different. For instance, Hurricane Harvey was portrayed in the media as a deadly consequence of a warming climate. However, the facts are that this just isn't the case. When looking at historical data for hurricanes affecting the United States, the data shows no trend over time.

The United States recently experienced one of its longest hurricane "droughts" in modern history, spanning a decade since a major hurricane made landfall.

Likewise, flooding has been found to have no correlation to climate change. Even the Intergovernmental Panel on Climate Change found in its latest report that there is a lack of scientific evidence pertaining to floods and thus it has low confidence regarding any trends in magnitude or frequency of floods on a global scale.

The story is the same for many indicators of extreme weather, such as tornadoes and drought.

The data does not support the claims often made in the media, yet this does not stop journalists from using alarmist rhetoric to gain a larger readership. Scientists should look to trends before making dire predictions about extreme weather, but the trends show no link to climate change.

Basing a hypothesis on flawed reasoning and assumptions goes against the scientific method. These types of practices are all too common today. Scientists should instead adhere to sound science that is based on the core principles of the scientific method. These principles will steer scientists in the right direction. Assuming an outcome with no supporting evidence will not.

While the media will continue to report unfounded claims about climate change, the facts don't lie. Thank you for continuing to shine a light on one-sided reporting that our national media practices far too often.

Rep. Lamar Smith, a Republican from Texas, has represented Texas's 21st congressional district since 1987. He is currently the chairman of the United States House Committee on Science, Space, and Technology.

From: Joseph Bast
Sent: Mon 11/20/2017 5:29:59 PM
Subject: Will Happer interview reprint available

Friends,

Some of you recall that TheBestSchools.org published a fascinating interview with Prof. Will Happer last December. We obtained permission to produce a reprint of the interview. You can download it as a PDF using the link below. If you want copies of it... a really nice full-color and center-stitched version... watch your mail if you a Heartland donor, or ask me for copies.

Below is the website feature we created for this publication.

Joe

WILLIAM HAPPER INTERVIEW: FOCUSED CIVIL DIALOGUE ON GLOBAL WARMING

DECEMBER 1, 2016

By William Happer

Download the PDF

This is a reprint of an absolutely remarkable interview, conducted by TheBestSchools.org, with physicist William Happer, Ph.D., one of the most prestigious climate scientists in the world.

The interview was conducted in December 2016. TheBestSchools.org is "an independent organization comprised of a dedicated group of educators, editors, authors, and web professionals who—like you—believe learning transforms lives for the better and should remain a lifelong pursuit." TBS posted the interview online here.

Dr. Happer notes in response to one question:

Government actions to combat the non-existent problem have blighted the landscape with windmills and solar farms. They have driven up the price of electricity, which has disproportionately harmed the poorest segments of society. Government actions have corrupted science, which has been flooded by money to produce politically correct results. It is time for governments to finally admit the truth about global warming. Warming is not the problem. Government action is the problem. (p. 15)

Dr. Happer is the Cyrus Fogg Brackett Professor of Physics (emeritus) at Princeton University, former director of the Office of Energy Research, former director of research at the U.S. Department of Energy, and co-founder of Magnetic Imaging Technologies. He is also cofounder and chairman of the CO2 Coalition, the website of which is co2coalition.org.

He summarizes the interview this way:

Strongest arguments against consensus view:

■· Climate models have predicted far more warming than has been observed, as shown in Fig. 6. This is strong evidence that the equilibrium temperature increases from doubling CO2 levels is not 3° C to 3.5° C, as assumed in most climate models, but much less, probably close to 1° C.

■· The consensus has largely ignored the huge positive effects of more CO2, as illustrated in Fig. 18.

■· The large temperature changes of the Medieval Warm Period and the Little Ice Age occurred before the widespread use of fossil fuels after the industrial revolution, as shown in Fig. 11.

■· There is a strong correlation of temperature with solar activity as shown in Fig. 12, 14, and 15.

■· Frenzied, ad hominem attacks on credible opponents show that consensus supporters have a very weak scientific case. You don't need potentially counterproductive ad hominem attacks if you have strong scientific arguments.

Weakest arguments for consensus view:

■· Ninety-seven percent of scientists agree with the consensus.

■· Temperature has increased for the past century and CO2 levels have increased. Therefore the temperature increase was caused by CO2.

■· Increasing CO2

■· Government funded, consensus-supporting researchers have no conflict of interest.

■· Scientific opponents of the consensus are prostitutes of the evil fossil fuel industry.

Joe

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From: Joseph Bast
Sent: Mon 4/2/2018 7:05:03 PM
Subject: Today's WSJ: Climate Alarmists Lose in San Francisco Courtroom

View this email in your browser

Dear Friends,

This is a follow up to the email from this morning. For those of you who have trouble accessing Phelim's climate trial OpEd in the Wall Street Journal, please see below:

Climate Alarmists May Inherit the Wind

They likened a courtroom 'tutorial' to the Scopes Monkey Trial. But their side got schooled.

By Phelim McAleer

San Francisco

Five American oil companies find themselves in a San Francisco courtroom. California v. Chevron is a civil action brought by the city attorneys of San Francisco and Oakland, who accuse the defendants of creating a "public nuisance" by contributing to climate change and of conspiring to cover it up so they could continue to profit.No trial date has been set, but on March 21 the litigants gathered for a "climate change tutorial" ordered by Judge William Alsup—a prospect that thrilled climate-change alarmists. Excited spectators gathered outside the courtroom at 6 a.m., urged on by advocates such as the website Grist, which declared "Buckle up, polluters! You're in for it now," and likened the proceeding to the 1925 Scopes Monkey Trial.

In the event, the hearing did not go well for the plaintiffs—and not for lack of legal talent. Steve W. Berman, who represented the cities, is a star trial lawyer who has made a career and a fortune suing corporations for large settlements, including the $200 billion-plus tobacco settlement in 1998.

"Until now, fossil fuel companies have been able to talk about climate science in political and media arenas where there is far less accountability to the truth," Michael Burger of the Sabin Center for Climate Change Law at Columbia University told Grist. The hearing did mark a shift toward accountability—but perhaps not in the way activists would have liked.

Judge Alsup started quietly. He flattered the plaintiffs' first witness, Oxford

physicist Myles Allen, by calling him a “genius,” but he also reprimanded Mr. Allen for using a misleading illustration to represent carbon dioxide in the atmosphere and a graph ostensibly about temperature rise that did not actually show rising temperatures.

Then the pointed questions began. Gary Griggs, an oceanographer at the University of California, Santa Cruz, struggled with the judge’s simple query: “What do you think caused the last Ice Age?”

The professor talked at length about a wobble in the earth’s orbit and went on to describe a period “before there were humans on the planet,” which “we call hothouse Earth.” That was when “all the ice melted. We had fossils of palm trees and alligators in the Arctic,” Mr. Griggs told the court. He added that at one time the sea level was 20 to 30 feet higher than today.

Mr. Griggs then recounted “a period called ‘snow ballers,’” when scientists “think the entire Earth was frozen due to changes in things like methane released from the ocean.”

Bear in mind these accounts of two apocalyptic climate events that occurred naturally came from a witness for plainti s looking to prove American oil companies are responsible for small changes in present-day climate.

The defendants’ lawyer, Theodore J. Boutrous Jr., emphasized the little-discussed but huge uncertainties in reports from the United Nations Intergovernmental Panel on Climate Change and the failure of worst-case climate models to pan out in reality. Or as Judge Alsup put it: “Instead of doom and gloom, it’s just gloom.”

Mr. Boutrous also noted that the city of San Francisco—in court claiming that rising sea levels imperil its future—recently issued a 20-year bond, whose prospectus asserted the city was “unable to predict whether sea level rise or other impacts of climate change or flooding from a major storm will occur.”

Judge Alsup was particularly scathing about the conspiracy claim. The plainti s alleged that the oil companies were in possession of “smoking gun” documents that would prove their liability; Mr. Boutrous said this was simply an internal summary of the publicly available 1995 IPCC report.

The judge said he read the lawsuit’s allegations to mean “that there was a conspiratorial document within the defendants about how they knew good and well that global warming was right around the corner. And I said: ‘OK, that’s going to be a big thing. I want to see it.’ Well, it turned out it wasn’t quite that. What it was, was a slide show that somebody had gone to the IPCC and was reporting on what the IPCC had reported, and that was it. Nothing more. So they were on notice of what in IPCC said from that document, but it’s hard to say that they were secretly aware. By that point they knew. Everybody knew everything in the

IPCC," he stated.

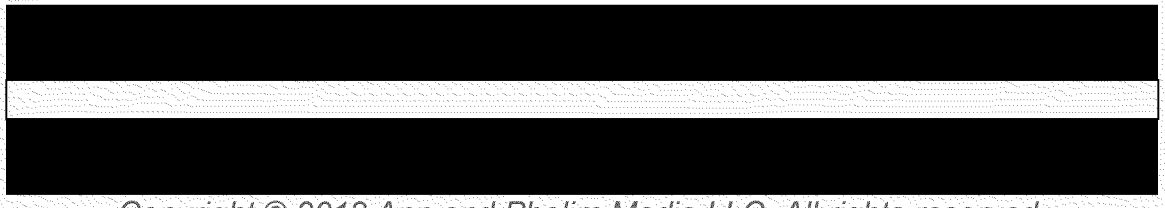
Judge Alsup then turned to Mr. Berman: "If you want to respond, I'll let you respond. . . . Anything you want to say?""No," said the counsel to the plainti s. Whereupon Judge Alsup adjourned the proceedings.

Until now, environmentalists and friendly academics have found a receptive audience in journalists and politicians who don't understand science and are happy to defer to experts. Perhaps this is why the plainti s seemed so ill-prepared for their first court outings with tough questions from an informed and inquisitive judge.

Activists have long claimed they want their day in court so that the truth can be revealed. Given last week's poor performance, they may be the ones who inherit the wind.

Mr. McAleer is a journalist, playwright and filmmaker. He is currently writing a play about Chevron Corp.'s legal fight over alleged pollution in Ecuador.





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From: Joseph Bast
Sent: Mon 4/2/2018 5:16:04 PM
Subject: A whole booklet about the fake AGW consensus!
Consensus_Handbook-1.pdf

Willie sends along the attached, which is also available at this link:

https://www.climatechangecommunication.org/wp-content/uploads/2018/03/Consensus_Handbook-1.pdf

Of course it's awful, completely unresponsive to challenges many of us have put forward over and over again to the fake claim of an AGW consensus. The good news is that they felt compelled to produce this... evidence that we are on target. Bad news is that some people will see this and believe it.

Joe

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The Consensus Handbook

Why the scientific consensus on climate change is important

- John Cook
- Sander van der Linden
- Edward Maibach
- Stephan Lewandowsky

Written by:

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First published in March, 2018.

For more information, visit
http://www.climatechangecommunication.org/all/consensus-handbook/

Graphic design: Wendy Cook

Page 21 image credit: John Garrett

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Available at http://www.climatechangecommunication.org/all/consensus-handbook/

Introduction

Based on the evidence, 97% of climate scientists have concluded that human-caused climate change is happening. This scientific consensus has been a hot topic in recent years. It's been referenced by presidents, prime ministers, senators, congressmen, and in numerous television shows and newspaper articles.

However, the story of consensus goes back decades. It's been an underlying theme in climate discussions since the 1990s. Fossil fuel groups, conservative think-tanks, and political strategists were casting doubt on the consensus for over a decade before social scientists began studying the issue. From the 1990s to this day, most of the discussion has been about whether there is a scientific consensus that humans are causing global warming.

As the issue has grown in prominence, a second discussion has arisen. Should we even be talking about scientific consensus? Is it productive? Does it distract from other important issues?

This handbook provides a brief history of the consensus on climate change. We'll summarize the research quantifying the level of scientific agreement on human-caused global warming. We'll examine what the public thinks about the consensus, and the misinformation campaigns that have sought to confuse people. We'll look at how we should respond to misinformation and how best to communicate the consensus. Lastly, we'll answer some of the objections to communicating the consensus.

The consensus story has several important chapters. Seeing the full story is essential to understanding why scientific consensus is important.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00003

Consensus on consensus

Naomi Oreskes was the first to quantify the level of expert agreement on human-caused global warming in 2004[1]. Analyzing 928 scientific papers on global climate change, she couldn't find a single peer-reviewed paper rejecting human-caused global warming. This was the first research that put hard numbers on the overwhelming scientific consensus, and was featured prominently in Al Gore's award-winning movie, *An Inconvenient Truth*.

> Among peer-reviewed studies examining expert agreement on climate change, there is consensus on consensus.

Since that seminal 2004 paper, a number of other studies have examined the scientific consensus in various ways. These include surveys of the scientific community[2, 3, 4, 5], analyses of public statements about climate change[6], and analyses of peer-reviewed research into climate change[7].

A synthesis of this research – a survey of surveys – concluded that the expert consensus on climate change is between 90 to 100%, with a number of studies converging on 97% agreement[8]. Among peer-reviewed studies examining expert agreement on climate change, there is consensus on consensus.

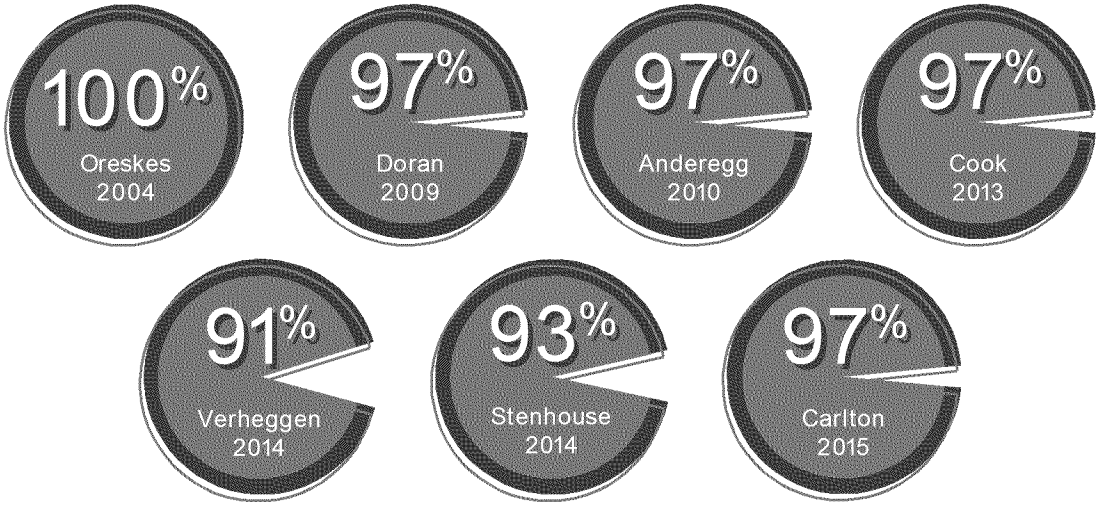


Figure 1: Summary of studies measuring agreement among climate scientists or climate papers on human-caused global warming.

What is a "climate expert"?

Clarifying what is meant by a "climate expert" is important to understand how misinformation campaigns have exploited confusion about experts in order to cast doubt on the consensus. In the context of climate change, most studies define a climate expert as a climate scientist publishing peer-reviewed climate research. For example, the first study finding 97% consensus looked at climate scientists actively publishing climate research[3]. The second study finding 97% consensus looked at scientists who had published peer-reviewed climate papers[6]. Analyses of scientific research have looked at papers published in peer-reviewed journals on the topic of "global climate change" or "global warming"[1,7]. The emphasis is on scientists who have published climate-related scientific research.

Why does the level of expertise matter? As expertise in climate science increases, so too does agreement that humans are causing global warming[8]. However, this link between expertise and consensus has made it possible for misinformers to cast doubt on the scientific consensus by appealing to groups with lower expertise in climate science. This technique is known as "fake experts" – portraying non-experts as subject matter experts in order to cast doubt on scientific consensus.

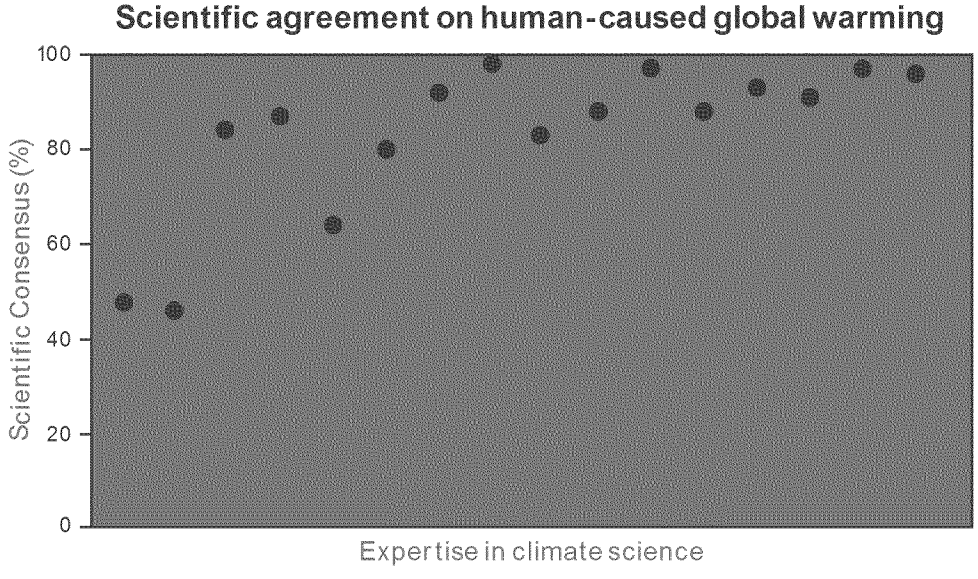


Figure 2: Scientific consensus vs. expertise in climate science. Each dot represents a group of scientists, from economic geologists to climate scientists publishing climate research. Groups with higher expertise in publishing climate research show higher agreement that humans are causing global warming[8].

The consensus gap

Despite many studies confirming the overwhelming scientific agreement on climate change, there is a gaping chasm between the actual 97% consensus and the public's perception of the consensus. On average, people think that around 67% of climate scientists agree that humans are causing global warming. An even more disturbing statistic is that only 13% of Americans are aware that the consensus is over 90%[9].

> ...there is a gaping chasm between the actual 97% consensus and the public's perception of the consensus.

This misconception doesn't just apply to the general public. Even many science teachers aren't aware of the consensus[10]. The unfortunate consequence of this misconception is that many teachers cover climate change by presenting contrarian viewpoints alongside mainstream climate science. As we'll see on Page 8, false-balance treatment of climate change has a misinforming effect.

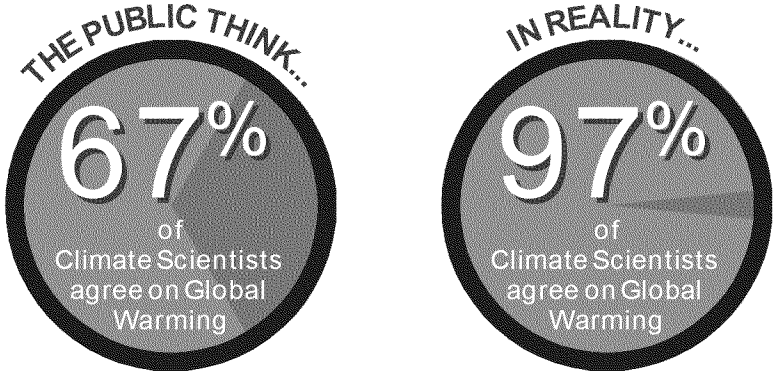


Figure 3: The consensus gap[8,9].

The role of politics and information

Why is there such a large consensus gap? Figure 4 reveals several contributors. First, we see that public perception of consensus varies widely across the political spectrum. The more politically conservative a person, the lower their perceived consensus. This means that political bias plays a large role in lowering perceived consensus.

> The more politically conservative a person, the lower their perceived consensus. This means that political bias plays a large role in lowering perceived consensus.

But even at the liberal end of the political spectrum, there's a gap between public perception and the 97% consensus. This means that information (either lack of awareness or the influence of misinformation) is arguably an even greater contributor to the consensus gap than political bias. This is not surprising given that misinformation campaigns have persistently confused the public about the consensus for nearly three decades[11,12]. In fact, the first messages that the public heard about the consensus on climate change came in the form of misinformation.

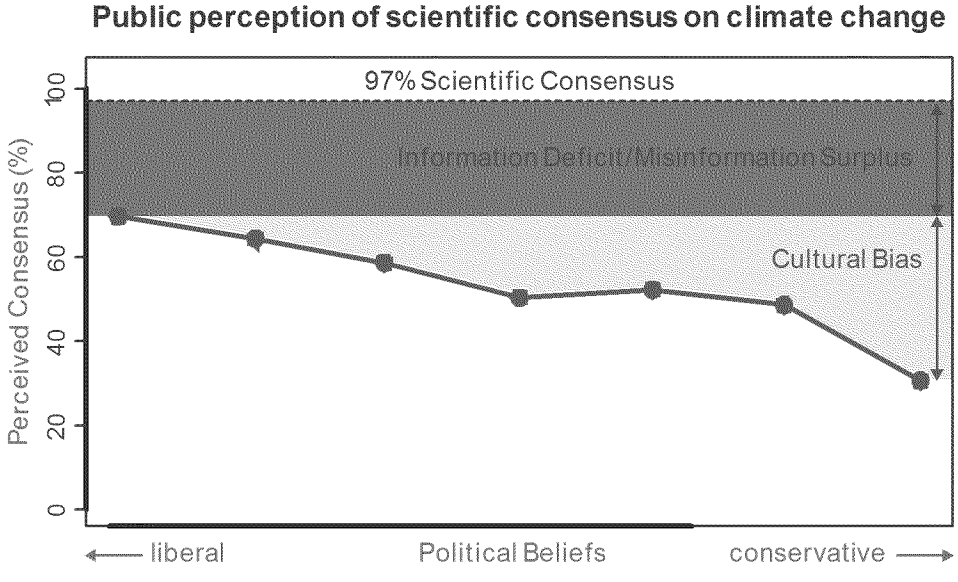


Figure 4: Perceived scientific consensus vs. political ideology measured in 2013[13].

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00007

••• Undermining the consensus

Over a decade before Naomi Oreskes first quantified the consensus, opponents of climate action began to cast doubt on the scientific consensus. The first public messages about the consensus on climate change were that there was no consensus.

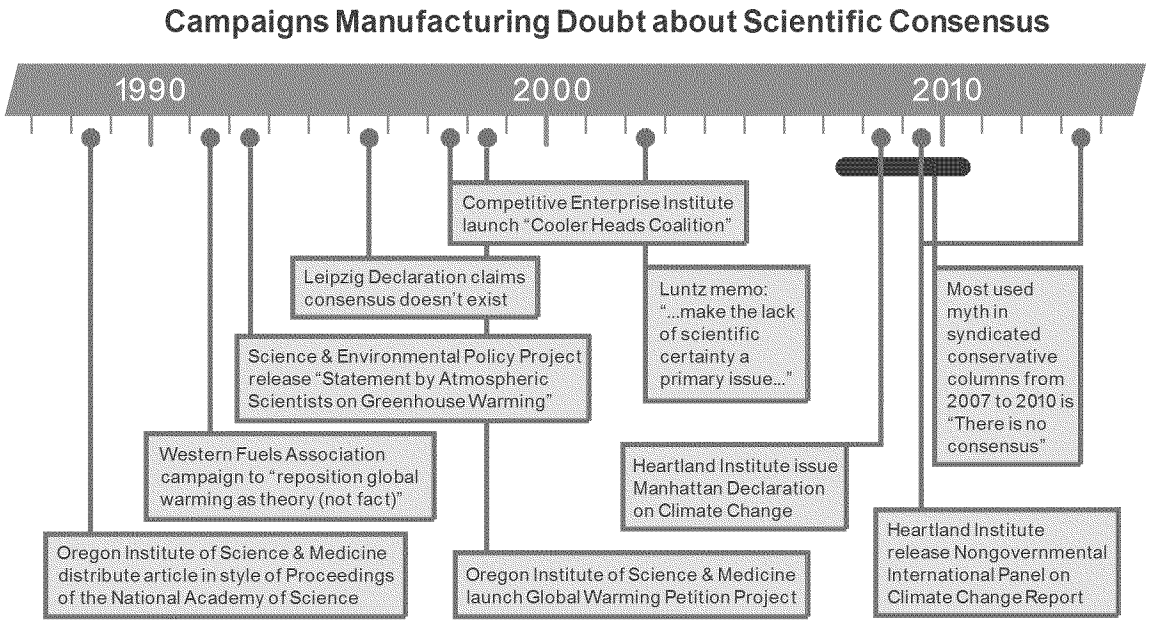


Figure 5: A timeline of misinformation campaigns casting doubt on the consensus on climate change.

As well as government-based misinformation, the fossil fuel industry were active in generating misinformation, using techniques that the tobacco industry had honed decades earlier[14]. In 1991, the Western Fuels Association spent over half a million dollars on a public relations campaign to "reposition global warming as theory (not fact)"[15 p.139].

One of the most prominent and potent misinformation campaigns against the consensus is the Global Warming Petition Project, launched in 1998. It is an online petition featuring over 31,000 Americans who have signed a statement claiming that humans aren't disrupting the climate. However, this petition uses the technique of fake experts (introduced on page 3); 99.9% of the signatories are not climate scientists (and many are not scientists, while others aren't real people). Further, while 31,000 seems like a lot, even if they were real scientists, they would represent only 0.3% of the 10 million Americans with a science degree.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00008

Despite its fatal flaws, the Petition Project is both popular and effective in misinforming people. An experiment testing six common myths about climate change found that the Global Warming Petition Project was the most damaging in reducing acceptance of climate change[16]. An analysis of social media posts in 2016 found that the most shared climate article featured this petition[17].

More recent misinformation efforts by the fossil fuel industry, conservative think tanks, and other conservative writers have continued to attack the consensus. From 2007 to 2010, the most common argument in conservative op-eds about climate change was that there was no consensus[12].

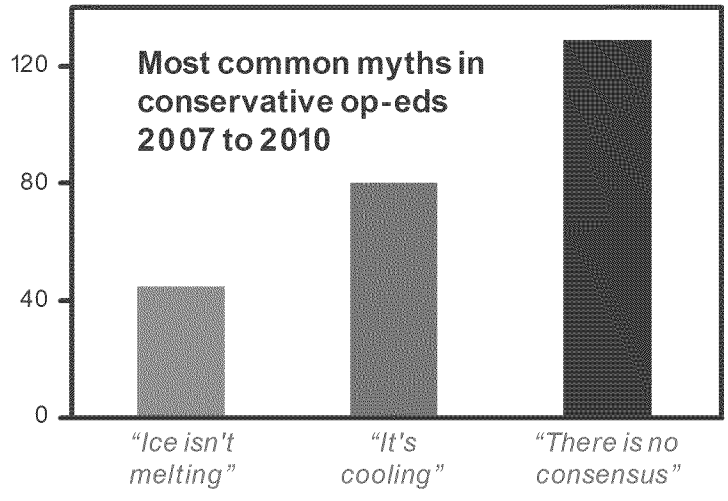


Figure 6: The three most common claims in conservative op-eds about climate change published from 2007 to 2010[12].

Undermining the existence of the scientific consensus has been a major strategy of opponents of climate action since 1990 and continues to be a dominant theme. Consensus misinformation can take many forms, including emphasizing uncertainty[38] and signed declarations. Another form of misinformation worth further examination is false-balance media coverage.

False-balance media coverage

One of the most insidious, albeit often inadvertent forms of climate misinformation is false-balance media coverage, where contrarian voices are given equal coverage with climate scientists. This stems from the journalistic norm assuming there are always two sides to an issue, thus giving mainstream and contrarian voices equal representation. As a result, a few dissenting scientists are given similar attention to the 97% of scientists who are convinced that humans are causing global warming.

Analysis of media coverage from 1988 to 2002 showed that newspapers often presented false balance media coverage of climate change[18]. While the situation has improved in prestige-press coverage[19], the tabloid press has shown no signs of improvement[20]. Similarly, 70% of U.S. TV coverage of climate change presents a false balance[21]. In short, much of what people learn about climate change from the media involves well-established scientific truth presented alongside groundless assertions.

What impact does this have? When people see two sides arguing a complicated scientific issue, they come away with the impression of an ongoing 50:50 debate. False-balance media coverage reduces the public's understanding across a range of issues[22,23,24]. When it comes to climate change, false-balance media coverage has been shown to lower perceived consensus[25].

How should the media cover climate change?

Covering climate change is a challenge for journalists. On the one hand, they should strive to maintain objectivity and balance. On the other hand, giving contrarians equal coverage with mainstream scientists when there is a scientific consensus misleads the public about the state of the science.

One way to present conflicting viewpoints without misleading is by presenting weight-of-evidence or weight-of-experts information. These approaches acknowledge multiple sides to a debate while also evaluating which side is supported by evidence and a scientific consensus[26]. This approach has been found to foster more accurate beliefs while also acknowledging contrarian viewpoints[27,28]. Media organizations such as the BBC have resolved to avoid false-balance coverage by consideration of due weight[29].

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00010

Visual exemplars such as a photo of scientists representing the state of scientific understanding are an effective way to communicate weight-of-evidence information[30]. However, too much information can overwhelm people – one study found combining weight-of-experts information with comments from scientists from each side made it hard for readers to distinguish between majority and minority views[23]. Consequently, it's more effective to provide a straightforward (ideally visual) summary of the state of expert agreement.

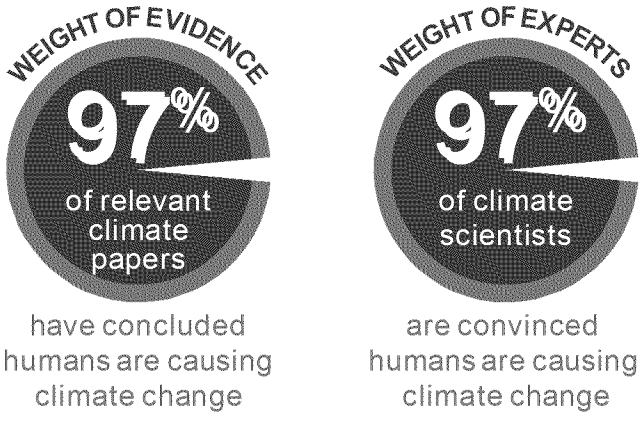


Figure 7: Weight-of-evidence[7] or weight-of-experts[2,3,6] visualisations.

To debate or not to debate

Debate is crucially important to climate science and in the case of human-caused climate change has already occurred over decades. The process of scientific debate is open to anyone—although it does require that participants subject their ideas to the scrutiny of the peer-review process, which is fundamental for the advancement of scientific knowledge[31]. However, contrarians refuse to participate in scientific debates: they do not present their views at scientific conferences, and have a negligible presence in the peer-reviewed literature. Instead, they demand special treatment by bypassing the usual scientific process and presenting unvetted ideas to the public.

How should one respond if invited to publicly debate mainstream climate science? Requests to "debate" climate science or the timing of climate impacts are for propaganda purposes and should be avoided. Agreeing to participate in such debates run the risk of misinforming the public by conveying the false impression that the scientific community is undecided on basic facts like human-caused global warming.

In contrast, debates over solutions to climate change are worthwhile. One response to an invitation to debate is to inform the organisers of the danger of misinforming the public by debating established science, and that a more appropriate and constructive debate topic is climate solutions. If the organisers persist in hosting a problematic debate, a further option is to issue a public statement explaining that you had advised the organisers not to go ahead due to the problematic nature of the event, but they went ahead regardless.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00011

Impact of misinformation

Misinformation about the consensus has persisted for decades. What impact does this have on public perceptions of climate change? Misinformation affects people in several ways.

First, misinformation causes many people to believe false information. A study testing the effect of misleading statistics found that providing just a handful of misleading numbers was effective in lowering acceptance of climate change [32]. Another study tested six different pieces of climate misinformation and found that attacks on the consensus were the most effective in lowering acceptance of climate change [16].

Second, misinformation can cancel out the impact of accurate information. When people are presented with conflicting pieces of information, the two can cancel each other out [16,25,33]. In other words, misinformation doesn't just cause some people to believe falsehoods, it can stop them from believing the facts.

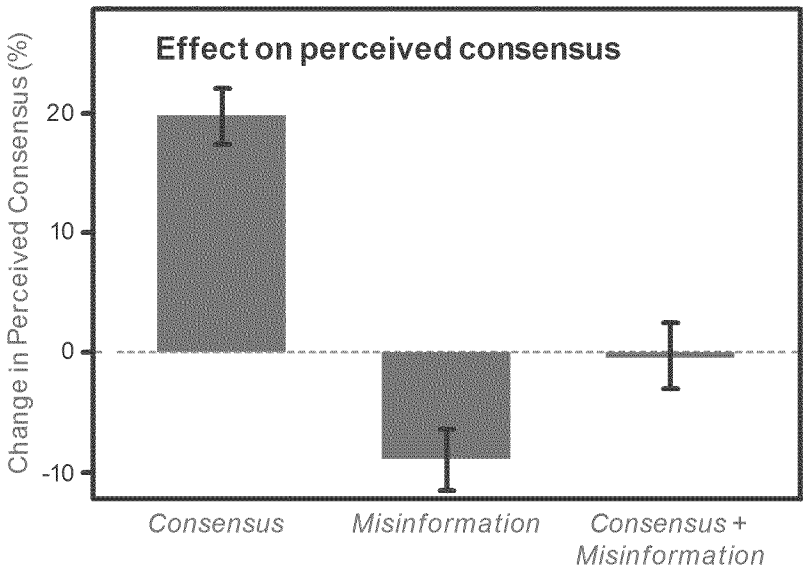


Figure 8: The effect of different types of messages about climate change. The first bar shows the positive effect of a 97% message. The second bar shows the negative effect of misinformation. The third bar shows how consensus information and misinformation cancel each other out[16].

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00012

Why attack consensus?

In 1998, the American Petroleum Institute along with other industry groups and conservative think-tanks teamed together to publish the "Global Climate Science Communications Plan" report. They surveyed over 1000 Americans and found that casting doubt on scientific agreement reduced concern about climate change. Their strategy was simple yet effective – recruit a handful of scientists to hit news organizations with a steady stream of misinformation. By exploiting the journalistic norm of covering both sides, the goal was to confuse the public through false-balance coverage of climate change.

Around the same time, political strategist Frank Luntz was conducting market research into how Republican politicians who opposed policies to stop global warming should talk about climate change[31]. He found that if people thought the experts disagreed about human-caused global warming, their opinions on climate policy would change accordingly. Luntz recommended casting doubt on the scientific consensus to win the policy debate. The (ethically dubious) merits of this communication strategy have been confirmed by subsequent research finding that when people are told that experts disagree, their support for environmental policy goes down[34].

WINNING THE GLOBAL WARMING DEBATE – AN OVERVIEW

Please keep in mind the following communication recommendations as you address global warming in general, particularly as Democrats and opinion leaders attack President Bush over Kyoto.

1. ***The scientific debate remains open.*** Voters believe that there is ***no consensus*** about global warming within the scientific community. Should the public come to believe that the scientific issues are settled, their views about global warming will change accordingly. Therefore, ***you need to continue to make the lack of scientific certainty a primary issue in the debate,*** and defer to scientists and other experts in the field.

Excerpt from the Luntz memo.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00013

A gateway belief

Over a decade after fossil fuel groups and political strategists discovered the important role of perceived consensus and systematically began to undermine it, social scientists began to catch up. The first studies came in 2011 and 2013, finding that perceptions about scientific agreement are linked to support for climate policy and acceptance of science more generally[35, 36]. Later research built on this line of work, advancing the "Gateway Belief Model", which confirmed that what people think about expert agreement influences a range of other key climate attitudes, including whether global warming is real, caused by humans, resulting in serious impacts and importantly, whether we should act to solve it[37].

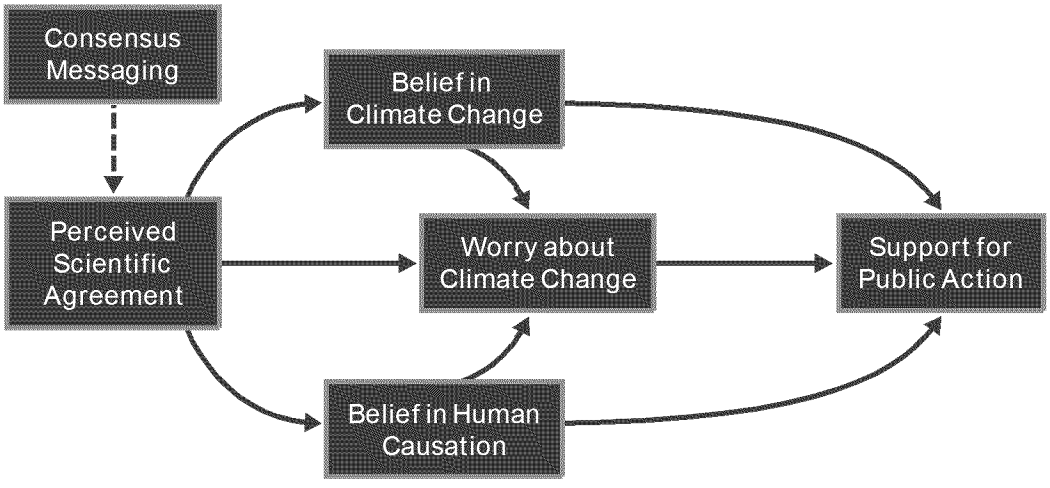


Figure 9: Perceived consensus as a gateway belief[37].

The status of perceived consensus as a gateway belief to acceptance of (climate) science has since been confirmed by a number of independent studies[35, 38, 39, 40]. This includes experiments finding that highlighting the 97% consensus increases acceptance of climate science[13, 36, 41, 42, 43].

Based on this research, communication experts have urged scientists to communicate the overwhelming agreement on human-caused global warming in order to address the misconception that scientists still disagree[44]. Informing people about the consensus is not a magic bullet that solves everything, but it is a powerful tool for helping people to understand climate change and reach appropriate conclusions about it.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00014

The powerful role of heuristics: wisdom of the crowd

People simply don't have the time, energy (or infinite brain capacity) to become an expert on every topic they encounter. So they employ mental short-cuts or heuristics, either consciously or unconsciously, to help them make decisions. Much research has shown that heuristics do a fairly good job at helping people arrive at sound decisions[45], particularly in situations that are complex and uncertain.

> "...a useful heuristic is relying on the opinion of experts to guide one's views on complicated issues.

For example, a useful heuristic is relying on the opinion of experts to guide one's views on complicated issues. This approach makes a lot of sense – no one has time to research every issue they encounter and thus we have to defer to expert opinion. We are also often influenced by the opinion of other people, including peers and experts. Importantly, research has shown that group verdicts can be very accurate, and under certain conditions, more accurate than the individuals within the group. This socially-derived wisdom is known as the "wisdom of the crowd"[46,47] and makes good sense on an intuitive level too. For example, we often feel better about getting a second, independent opinion when faced with a serious dilemma. It is therefore for good reason that humans pay very close attention to the opinions and judgments of others, and when an entire group of specialists all agree on something, that sends an important signal. In fact, relying on a select "crowd" of experts has been found to be both popular and reliable[48]. It makes sense mathematically too: Condorcet's Jury Theorem tell us that when judgments are aggregated independently (more or less), and when the probability of each individual being "correct" is 50% or higher (e.g. in the case of experts), adding more votes to the majority consensus will increase the likelihood that the consensus is correct[49].

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00015

••• Communication best practices

There are a variety of ways to convey the overwhelming agreement among climate scientists, and a number of studies have tested different approaches. One study that tested numeric versus non-numeric statements about the level of scientific agreement found that numeric statements were more effective [42]. For example, the statement "97% of climate scientists have concluded that human-caused climate change is happening" elicited estimates of the consensus that were 15 percentage points higher than the statement "An overwhelming majority of climate scientists have concluded that human-caused climate change is happening".

Another study tested different ways of framing consensus such as using verbal and visual analogies (i.e., "if 97% of doctors concluded that your child is sick, would you believe them?"). They found that while metaphors are useful, a pie-chart that visually communicated the 97% consensus was the most effective, particularly among conservative audiences[37].

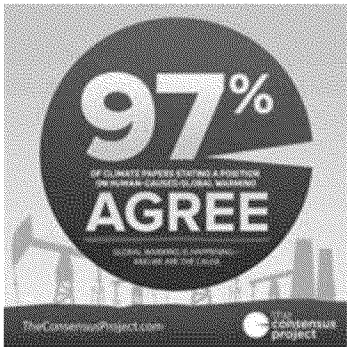


Figure 10: Pie-chart infographic from The Consensus Project, a website launched to communicate the results of Cook et al. (2013)[7].

Asking people to estimate the level of agreement prior to telling them about the 97% consensus is another useful approach. This "estimation and reveal" technique has been found to be more effective than simply communicating the consensus [42].

More generally, communication experts recommend the following approach to enhance the effectiveness of science communication: simple clear messages, repeated often, by a variety of trusted voices [44, 50]. This approach is echoed by Frank Luntz, the political strategist who recommended that opponents of climate action attack the scientific consensus [51]:

> *"You say it again, and you say it again, and you say it again, and you say it again, and you say it again, and then again and again and again and again, and about the time that you're absolutely sick of saying it is about the time that your target audience has heard it for the first time."*

Opponents of climate action have followed the advice of Luntz and persistently attacked the consensus for nearly three decades. From a messaging campaign point of view, it is a sound strategy if one wishes to decrease public support for climate action. Fortunately, it is possible to defang that strategy.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00016

Inoculating against misinformation

A number of studies illustrate the importance and efficacy of communicating the 97% consensus. However, when consensus information is combined with misinformation about the consensus, the two cancel each other out[16]. This helps explain why public opinion has not shifted as much as it might have over the years – persistent misinformation about the consensus has reduced the effectiveness of communicating the scientific consensus. How might we resolve this stalemate?

One answer comes from inoculation theory: a branch of psychological research that takes the idea of physical vaccination and applies it to knowledge[52]. By exposing people to misinformation along with a clear warning that it is misinformation can help people become more resistant to such misinformation.

An inoculating text consists of two elements: a warning that people might be misled, and preemptive counter-arguments explaining the techniques used to distort the facts. Preemptively refuting misinformation has been found to be more effective than debunking the misinformation after people receive it[38]. When it comes to misinformation, prevention is better than cure[53].

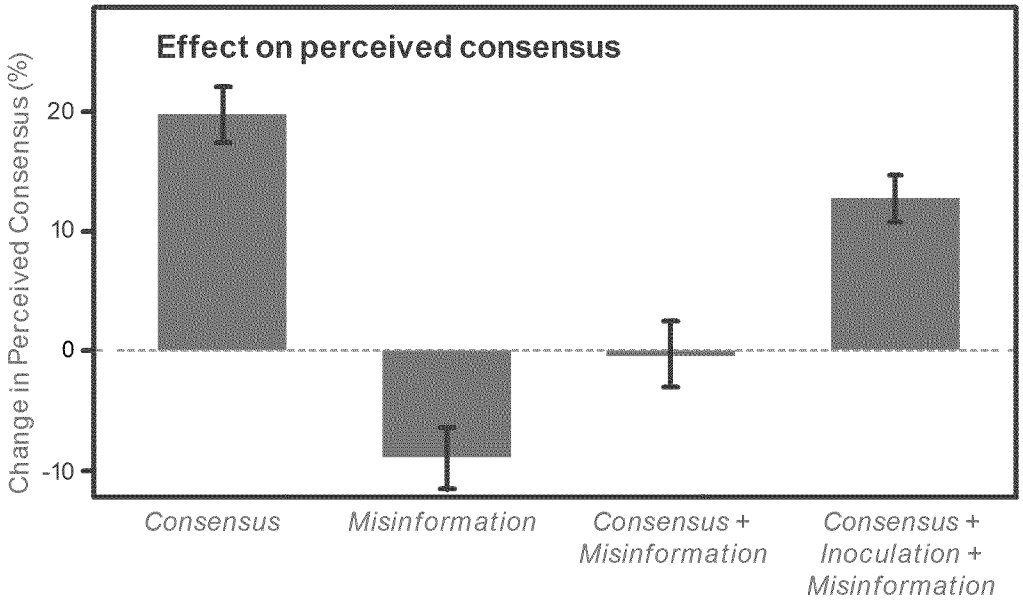


Figure 11: The effect of different types of messages about climate change. This figure is an amendment of Figure 8, now with a fourth bar showing the effect of inoculating people before showing them misinformation.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00017

Several approaches to inoculation have been shown to be effective in supporting the scientific consensus on climate change. One study found that providing people with explicit forewarning about the type of misinformation they might encounter largely counteracted the effect of the misinformation[16]. Another study found that explaining the techniques of misinformation in general terms without specifically mentioning the misinformation is also helpful[25].

In addition, another study found that warning people that science shouldn't be politicized, along with a statement about the consensus, was successful in neutralizing misinformation about new energy technologies[38]. Similarly, simply communicating the 97% consensus before false-balance media coverage was successful in neutralizing the negative influence of such misinformation[25].

Satire is a powerful form of inoculation. One example is a comedy video by John Oliver that parodies how televised debates about climate change reinforce the false balance problem. They produced a satirical weight-of-experts response, with 3 contrarian scientists debating 97 mainstream scientists as a "statistically representative climate change debate". Watching this video has been shown to increase people's acceptance of global warming and perceived consensus[39].



Deconstructing misinformation

To create an effective inoculation message, it helps to start with a strong understanding of how misleading arguments are constructed. This requires a critical thinking approach to argumentation, in order to detect the reasoning fallacies in a misleading argument[54].

Arguments are made up of one or more starting assumptions, or premises, leading to a conclusion. To reliably detect where an argument goes wrong, one needs to deconstruct the argument into its constituent premises and conclusion. This then allows one to determine whether all the premises are true, and if so, whether the premises logically lead to the conclusion. This process allows one to detect the fallacies included within a false argument, which can then be used in an inoculating text.

For example, the Global Warming Petition Project claims that there is no expert consensus on climate change based on two premises: a large proportion of science graduates dissent, and these dissenters are climate experts. By deconstructing the claim into its constituent parts, we are able to identify that both premises are false. The first premise uses the magnified minority fallacy: 31,000 is a tiny proportion of the total number of U.S. science graduates. The second premise relies on fake experts: almost all signatories have no expertise in climate science.

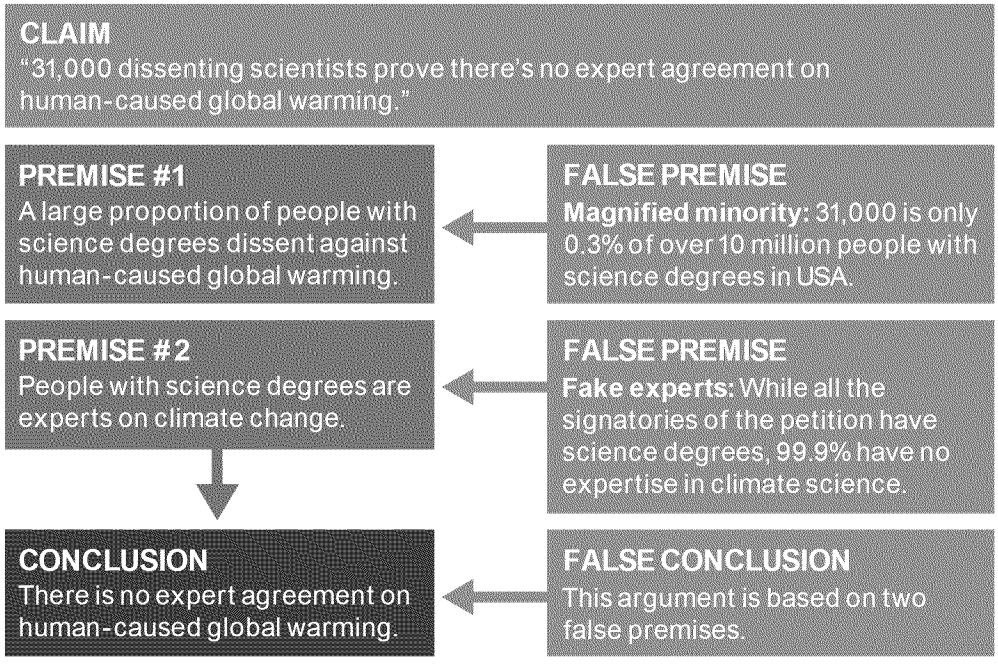


Figure 12: Structure of the claim that there is no scientific consensus, based on the Global Warming Petition Project.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00019

••• Critiques of consensus messaging & rebuttals

Opponents of climate action have used the insights of audience research and communicated "there is no consensus" for nearly three decades. While social scientists have also realized the important psychological role of perceived consensus, some scientists and others have raised objections about efforts to communicate the scientific consensus. These objections are worthy of rebuttal, because they typically ignore relevant evidence on how people think about scientific matters[55].

The false dichotomy between consensus & policy

One argument against consensus communication is that it distracts from policy discussion[56]. This "either/or" choice between consensus or policy is a false dichotomy. Consensus messaging complements rather than competes with policy discussion. Establishing that experts agree there's a problem serves as a stepping-stone to discussing how to solve it[57]. In actual fact, therefore, consensus messaging *permits* discussion of policy rather than prevent it.

> The 97% consensus offers a lot of bang for one's communication buck.

In contrast, misinformation that casts doubt on the consensus is designed to delay climate policy discussions. This was identified early by opponents of climate action who directed their focus on confusing the public about the consensus in order to reduce support for climate action. Consensus misinformation is a "lever for inaction".

Consensus messaging is designed to remove a distraction designed to delay climate policy. The "consensus vs policy" false dichotomy runs the risk of causing the very outcome it seeks to avoid.

The effectiveness of consensus messaging

A number of studies show that consensus messaging is a powerful communication tool (see page 14). Simply communicating the current state of scientific agreement (97%) not only raises perceived consensus, it also has a positive influence on acceptance that global warming is real, human-caused, and is a serious problem. Most importantly, it increases support for climate policy. The 97% consensus offers a lot of bang for one's communication buck.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00020

However, another objection to consensus messaging is that public perception of the consensus hasn't changed over the last decade. As scientists have been communicating the consensus over this period, the argument goes that consensus messaging doesn't work[58, 59].

This argument, however, is false on several points. First, public perception of the consensus is shifting. A number of independent surveys find that perceived consensus has been steadily increasing since 2010 [60, 61, 62].

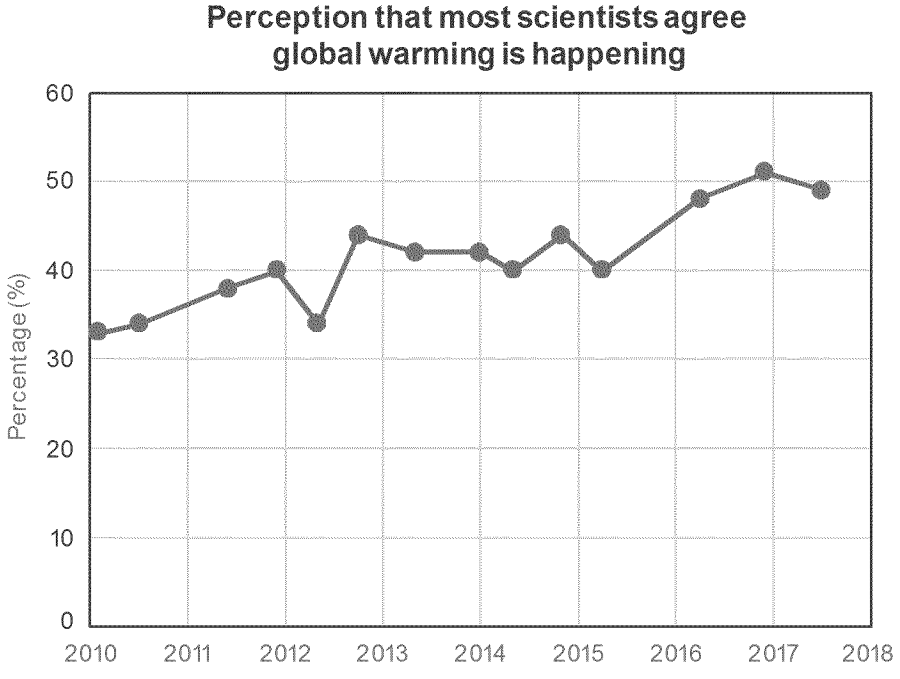


Figure 13: Public perception of scientific consensus from U.S. national representative surveys[62].

Second, this argument ignores the role of misinformation in reducing the effectiveness of consensus messaging. Page 10 showed that misinformation can cancel out the influence of consensus information[16]. Attacking the consensus has been one of the most common arguments used by climate contrarians[12]. This underscores the need to not only continue to communicate the 97% consensus but also to inoculate people against misinformation casting doubt on the consensus.

Neutralizing political ideology

A third objection to communicating the consensus is that it is a polarizing message[58]. While one study found a small proportion of conservatives react negatively to consensus information[13], the majority of studies testing consensus messaging find that either consensus neutralizes the influence of political ideology[16,25,36,37,43] or works equally well across the political spectrum[41,42]. People's perception of the scientific consensus is a so-called "meta-cognition", a belief about what other people believe. It is therefore relatively less threatening for people to simply change their beliefs about what other people think than it is to overhaul one's deeply held worldview. However, we know that changing one's beliefs about what the experts think ultimately leads to subsequent changes in private beliefs (page 12). In short, we can think of perceived consensus as a non-identity threatening gateway cognition.

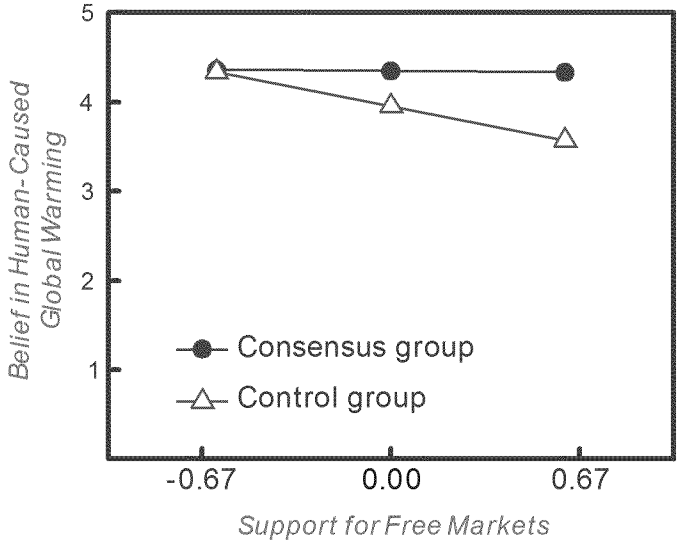


Figure 14: Effect of consensus message across political ideology. While a control group shows the biasing influence of political ideology, this influence is neutralized after receiving a consensus message[36].

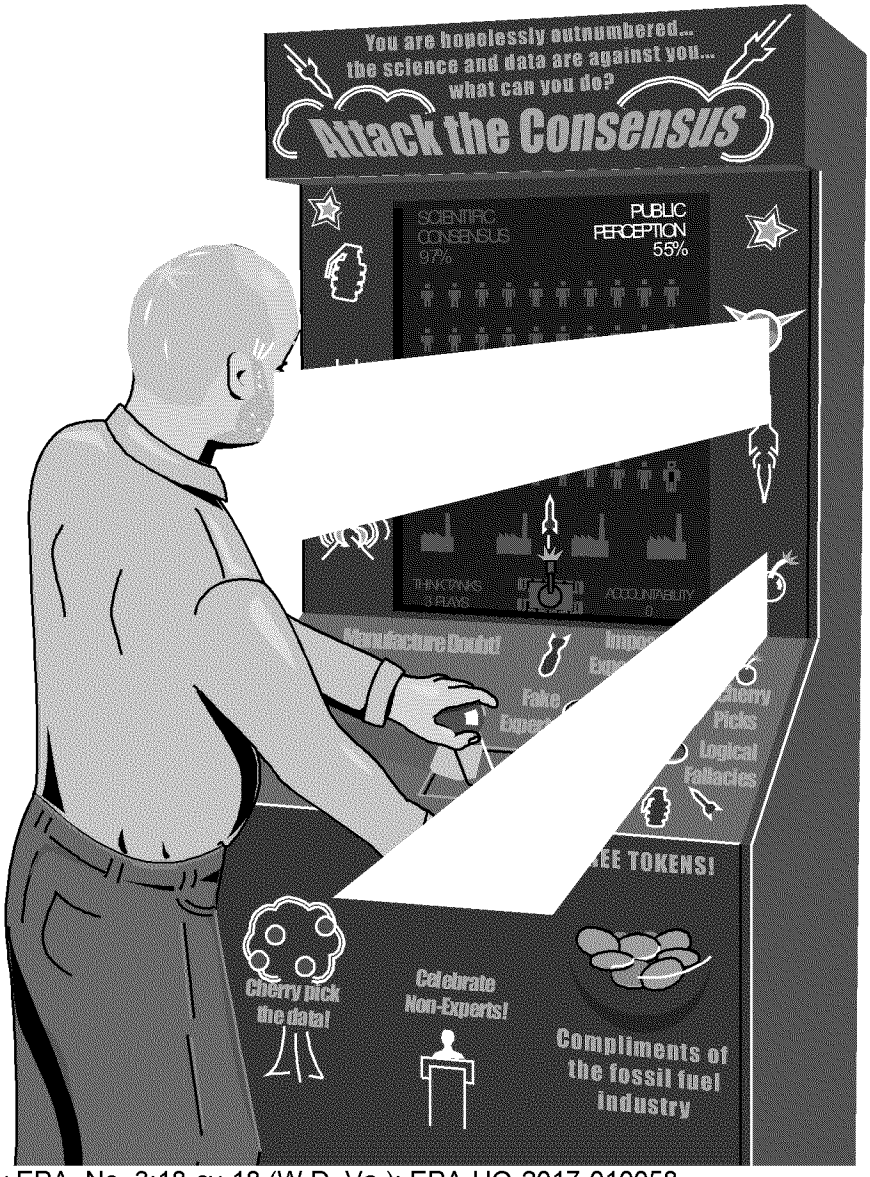
Political ideology is important but not the full picture. Figure 4 (page 5) shows two contributors to the consensus gap: political bias and information deficit/misinformation surplus. Consequently, science communicators should employ two channels of science communication: addressing both cultural values and information deficit[63].

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002255-00022

Conclusion

There is strong support – in both theory and research findings – for the value of communicating the full extent of the scientific consensus about human-caused climate change in simple, clear numeric terms. As a result of sustained misinformation campaigns, few members of the public currently understand the extent of the consensus – a damaging misconception that reduces support for climate action. Moreover, efforts to inform people about the consensus have shown to be effective, and help people reach accurate conclusions about climate change. Lastly, efforts to inoculate members of the public against the misinformation campaign about the scientific consensus appear likely to help neutralize the harmful effects of that campaign.

Because successful science communication campaigns typically feature "simple clear messages, repeated often, by a variety of trusted voices," the community of individuals and organizations seeking to help the public and policymakers better understand – and make better decisions about – climate change should demonstrate the patience, perseverance, and communication discipline necessary to set the record straight about the scientific consensus on human-caused climate change.



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Based on the evidence, 97% of climate scientists agree that humans are causing global warming. However, only 12% of the American public are aware that the consensus is over 90%. Why the gaping chasm between the overwhelming consensus and public perceptions?

For three decades, opponents of climate action have sought to cast doubt on the scientific consensus. Their focus on consensus is due to a single, important reason: perceived consensus is a gateway belief that influences a range of attitudes and beliefs about climate change.

Scientists and communicators need to understand the psychology of consensus and the misinformation campaign that attempts to exploit this psychology to reduce public support for climate action.

The Consensus Handbook is written by scientists who have studied the psychology of consensus. It examines the misinformation campaigns attacking the consensus and explains how we can close the consensus gap.

From: Joseph Bast
Sent: Mon 12/18/2017 7:24:32 PM
Subject: National Security Strategy Report

https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf

This is the only reference to climate change in the entire 56-page document:

Climate policies will continue to shape the global energy system. U.S. leadership is indispensable to countering an anti-growth energy agenda that is detrimental to U.S. economic and energy security interests. Given future global energy demand, much of the developing world will require fossil fuels, as well as other forms of energy, to power their economies and lift their people out of poverty. The United States will continue to advance an approach that balances energy security, economic development, and environmental protection. The United States will remain a global leader in reducing traditional pollution, as well as greenhouse gases, while expanding our economy. This achievement, which can serve as a model to other countries, flows from innovation, technology breakthroughs, and energy efficiency gains, not from onerous regulation.

As a growing supplier of energy resources, technologies, and services around the world, the United States will help our allies and partners become more resilient against those that use energy to coerce. America's role as an energy exporter will also require an assessment of our vulnerabilities and a resilient American infrastructure.

Finally, the Nation's long-term energy security future rests with our people. We must invest in our future by supporting innovation and R&D, including through the National Laboratories.

Tone perfect. Thank you, Mr. President. Merry Christmas and happy new year!

Joe

Joseph Bast

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From: Joseph Bast
Sent: Mon 12/18/2017 6:28:09 PM
Subject: National Security Strategy Fact Sheet -- not one reference to climate change

This is what winning looks like, folks. That whole "global warming is a threat multiplier" thing is so over.

Joe

From: Sadler, Kelly J. EOP/WHO
Sent: Monday, December 18, 2017 12:09 PM
To: Sadler, Kelly J. EOP/WHO
Subject: National Security Strategy Fact Sheet

PRESIDENT DONALD J. TRUMP ANNOUNCES A NATIONAL SECURITY STRATEGY TO ADVANCE AMERICA'S INTERESTS

"Our government's first duty is to its people, to our citizens -- to serve their needs, to ensure their safety, to preserve their rights, and to defend their values." – President Donald J. Trump

A NEW NATIONAL SECURITY STRATEGY FOR A NEW ERA: Less than a year after taking office, President Donald J. Trump is unveiling a new National Security Strategy that sets a positive strategic direction for the United States that will restore America's advantages in the world and build upon our country's great strengths.

•□□□□□□□□ The 2017 National Security Strategy (Strategy) builds on the 11 months of Presidential action to restore respect for the United States abroad and renew American confidence at home.

•□□□□□□□□ Strategic confidence enables the United States to protect its vital national interests. The Strategy identifies four vital national interests, or "four pillars" as:

I. Protect the homeland, the American people, and American way of life;

II. Promote American prosperity;

III. Preserve peace through strength;

IV. Advance American influence.

•□□□□□□□□ The Strategy addresses key challenges and trends that affect our standing in the world, including:

•□□□□□□□□ Revisionist powers, such as China and Russia, that use technology, propaganda, and coercion to shape a world antithetical to our interests and values;

•□□□□□□□□ Regional dictators that spread terror, threaten their neighbors, and pursue weapons of mass destruction;

•□□□□□□□□ Jihadist terrorists that foment hatred to incite violence against innocents in the name of a wicked ideology, and transnational criminal organizations that spill drugs and violence into our communities.

•□□□□□□□□ The Strategy articulates and advances the President's concept of principled realism.

•□□□□□□□□ It is a realist strategy because it acknowledges the central role of power in international politics, affirms that strong and sovereign states are the best hope for a peaceful world, and clearly defines our national interests.

•□□□□□□□□ It is principled because it is grounded in advancing American principles spreads peace and prosperity around the globe.

I. PROTECT THE HOMELAND: President Trump's fundamental responsibility is to protect the American people, the homeland, and the American way of life.

•□□□□□□□□ We will strengthen control of our borders and reform our immigration system to protect the homeland and restore our sovereignty.

•□□□□□□□□ The greatest transnational threats to the homeland are:

•□□□□□□□□ Jihadist terrorists, using barbaric cruelty to commit murder, repression, and slavery, and virtual networks to exploit vulnerable populations and inspire and direct plots.

•□□□□□□□□ Transnational criminal organizations, tearing apart our communities with drugs and violence and weakening our allies and partners by corrupting democratic institutions.

•□□□□□□□□ America will target threats at their source: we will confront threats before they ever reach our borders or cause harm to our people.

•□□□□□□□□ We will redouble our efforts to protect our critical infrastructure and digital networks, because new technology and new adversaries create new vulnerabilities.

•□□□□□□□□ We are deploying a layered missile defense system to defend America against missile attacks.

II. PROMOTE AMERICAN PROSPERITY: A strong economy protects the American people, supports our way of life, and sustains American power.

•□□□□□□□□ We will rejuvenate the American economy for the benefit of American workers and companies, which is necessary to restore our national power.

•□□□□□□□□ America will no longer tolerate chronic trade abuses and will pursue free, fair, and reciprocal economic relationships.

•□□□□□□□□ To succeed in this 21st century geopolitical competition, America must lead in research, technology, and innovation. We will protect our national security innovation base from those who steal our intellectual property and unfairly exploit the innovation of free societies.

•□□□□□□□□ America will use its energy dominance to ensure international markets remain open, and that the benefits of diversification and energy access promote economic and national security.

III. PRESERVE PEACE THROUGH STRENGTH: An America strengthened, renewed, and rejuvenated will ensure peace and deter hostility.

•□□□□□□□□ We will rebuild America's military strength to ensure it remains second to none.

•□□□□□□□□ America will use all of the tools of statecraft in a new era of strategic competition—diplomatic, information, military, and economic—to protect our interests.

•□□□□□□□□ America will strengthen its capabilities across numerous domains – including space and cyber - and revitalize capabilities that have been neglected.

•□□□□□□□□ America's allies and partners magnify our power and protect our shared interests. We expect them to take greater responsibility for addressing common threats.

•□□□□□□□□ We will ensure the balance of power remains in America's favor in key regions of the world: the Indo-Pacific, Europe, and the Middle East.

IV. ADVANCE AMERICAN INFLUENCE: As a force for good throughout its history, America will use its influence to advance our interests and benefit humanity.

•□□□□□□□□ We must continue to enhance our influence overseas to protect the American people and promote our prosperity.

•□□□□□□□□

•□□□□□□□□ America's diplomatic and development efforts will compete to achieve better outcomes in all arenas—bilateral, multilateral, and in the information realm—to protect our interests, find new economic opportunities for Americans, and challenge our competitors.

•□□□□□□□□

•□□□□□□□□ America will seek partnerships with like-minded states to promote free market economies, private sector growth, political stability, and peace.

•□□□□□□□□ We champion our values – including the rule of law and individual rights – that promote strong, stable, prosperous, and sovereign states.

Our America First foreign policy celebrates America's influence in the world as a positive force that can help set the conditions for peace, prosperity, and the development of successful societies.

From: Joseph Bast
Sent: Mon 12/18/2017 4:44:17 PM
Subject: Some Recent Energy & Environmental News - 12/18/17

John Droz's latest newsletter, below, has links to some very interesting articles. This one, on wind power, reports these findings:

• Despite a growing chorus of complaints, the wind industry has expanded largely unopposed. Ten years ago, less than 300 industrial wind farms dotted the U.S. landscape. Today, more than 1,000 exist. Much of the growth has been funded by American taxpayers. Billions of dollars in state and federal incentives have made wind farms so profitable that companies are racing to develop them before the handouts disappear.

• Industrial wind turbines generate countless complaints nationwide about sleep disturbances, migraines, nausea, ear pressure, blurred vision, tinnitus and heart palpitations. Rampant reports about such effects from the Shirley Wind Farm in Brown County, Wisconsin, prompted the local Board of Health to declare the turbines a human health hazard.

• Wind industry officials have denounced people who complain about these symptoms, calling them misinformed or "anti-wind." Some wind companies offer money or other concessions to frequent complainers, often in exchange for silence and a waiver for turbine-related claims. "I call it a shut-up clause," said Jim Miller of South Dakota, who refused to sign such an agreement with Florida-based NextEra.

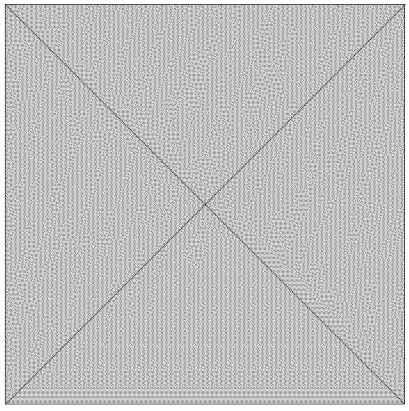
• Wind developers have used what some landowners describe as misleading tactics to get their contracts signed. Attorneys asked to review several such contracts called them one-sided, giving wind companies sweeping control over people's property with few rights for the landowner.

• Wind farms have divided communities across America. Contracted landowners eyeing profits spar with neighbors opposing turbines near their backyards. Lifelong friendships can end. Families sometimes fray. Hopkinton, New York, resident Janice Pease said she stopped talking to relatives who support a proposed wind farm in their town. Pease adamantly opposes it.

Pity Republicans didn't stick to their guns and end the subsidies to wind producers.

Joe

From: John Droz, jr. [mailto:aaprjohn@northnet.org]
Sent: Monday, December 18, 2017 6:10 AM
To: Joseph Bast
Subject: Some Recent Energy & Environmental News - 12/18/17



Energy & Environmental Newsletter - 12/18/17

AWED Friends:

Welcome to the last *Energy and Environmental Newsletter* of 2017! Note that this issue has a special section on Offshore Wind Energy.

Superior news: a major US media organization just finished a six month investigation into some effects of wind energy on local communities. Unlike many journalists, these people wrote an *objective* report that was quite critical of the wind industry. Due to space constraints, they purposefully omitted some pertinent issues (like military impacts). We hope that a Part 2 will be forthcoming.

Some of the more informative energy articles in this issue are:

Peer-reviewed study:

Why Wind Turbine Sounds are Annoying, and Why it Matters

Court Finds Wind Turbine Noise Exposure a 'Pathway to Disease'

What a local legislator learned from dealing with wind turbines

Excellent Wind Energy related study: Roadmap to Nowhere

Wind+Gas = the Death of Wind Energy

Final US Tax Bill is Favorable to Wind Energy

Who Saved US Solar Energy & Wind Energy Tax Credits?

France: 1.2 to 3.3 million bats destroyed by wind turbines

Are Big Wind Firms Actually "Subsidy Miners"?

Major Massachusetts Offshore Wind Project Is Terminated

New US wind energy rules regarding the military: minor improvements

For a huge 'peace dividend,' end the war on fossil fuels

End the "War on Coal"

A Leading Environmentalist: Why I Changed My Mind About Nuclear

Advanced Nuclear Finds a More Welcome Home in Canada

Some of the more interesting Global Warming articles in this issue are:

Revisiting The Endangerment Finding

Pruitt Guaranteeing Debate on Climate Soon

A new paper shows why the climate policy debate is broken

Global Warming Study Casts Doubt On Media's Climate Change Fairy Tale

A Veneer of Certainty Stoking Climate Alarm

The relationship between Physics and Philosophy

Death of Science Journalism

I want to thank the loyal readers of our Newsletter for their efforts and encouragement in 2017. My very best wishes for an enjoyable holiday season and a successful New Year!

John Droz, jr.

physicist & citizen advocate

PS: Our intention is to put some balance into what most people see from the mainstream media about energy and environmental issues... As always, please pass this on to open-minded citizens, and on your social media sites. If there are others who you think would benefit from being on our energy & environmental email list, please let me know. If at any time you'd like to be taken off this list, simply send me an email saying that.

PPS: I am not an attorney, so no material appearing in any of the Newsletters (or our WiseEnergy.org website) should be construed as giving legal advice. My recommendation has always been: consult a competent attorney when you are involved with legal issues.

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From: Joseph Bast
Sent: Mon 12/18/2017 3:26:19 PM
Subject: Blame Government, not the Market, for Dwindling Coal Market

This is where the debate is now, my friends.

Joe

The Hill
http://thehill.com/opinion/energy-environment/365137-blame-government-not-markets-for-dwindling-coal-industry

Blame government, not the market, for dwindling coal industry

BY ISAAC ORR, OPINION CONTRIBUTOR

12/15/17 03:00 PM EST 173

Renewable energy advocates [claim] free and competitive markets are to blame for coal-fired power plants being replaced by natural gas and wind generation. The problem is, there is no such thing as "free-market electricity generation," because electricity markets are warped by a series of state and federal government policies.

These market-distorting policies include a host of regulations that require states to purchase a portion of their electricity from renewable sources (state renewable energy mandates) and federal policies that subsidize renewable energy sources and impose onerous regulations on coal-fired power plants, such as the Clean Power Plan.

The confluence of these policies has created carrots and sticks that have been used to manipulate wholesale electricity prices, to the detriment of coal and nuclear electricity generators.

Renewable energy mandates have decreed that more electricity generation capacity must be built, even though demand for electricity has been stagnant. Federal subsidies bankrolled much of the cost. As a result, the supply of electricity has outpaced demand for that electricity, causing wholesale prices to fall.

This is similar to the tactic called "product dumping," which occurs when foreign companies sell their products in other countries for less than the cost of producing them to gain an unfair market share.

In the United States, product dumping in the electricity sector is enabled by a federal tax subsidy called the Renewable Electricity Production Tax Credit, which grants $23 per megawatt hour of energy produced to wind electricity generators. The payment is issued regardless of whether there is consumer demand for the electricity created.

This government policy is important, because it enables wind producers to sell their power for a profit no matter what the market demand is, a phenomenon that occurs most frequently in areas where renewables have been aggressively pursued and are dictated by state mandates.

It is this government-induced oversupply of electricity, coupled with low natural gas prices, that provides the real explanation for why wholesale electricity prices are currently suppressed. However, it is important not to be fooled into believing artificially low wholesale electricity prices are a windfall for consumers. As additional coal and nuclear plants retire, the oversupply of electricity will decline and push prices upward.

This has already started to happen in California, which has experienced higher retail electricity prices, despite higher incidences of negative wholesale prices, thanks to state policies that mandate renewables and the shuttering of coal-fired facilities. Residential customers in California now pay 39 percent more for their electricity than the national average.

Coal and nuclear plants are not retiring because they are inefficient and need subsidies to remain competitive; they are retiring because state and federal policies have placed a thumb on the scale, unfairly favoring renewables over traditional forms of energy.

Isaac Orr is a research fellow for energy and environmental policy at The Heartland Institute.

From: Joseph Bast
Sent: Sun 12/17/2017 8:13:32 PM
Subject: "Global Warming: Fake News from the Start"

Strong language from Tim Ball and Tom Harris, but this is justified and appropriate with Trump in the White House and Pruitt at EPA. The legacy media will never report it or admit it. No reason for us to keep silent about the disgraceful history of the global warming movement.

Joe

Hi Friends,

Here is our piece, just published on Townhall.com, the leading conservative Web site – note that there have already been 500 FaceBook shares!

https://townhall.com/columnists/tomharris/2017/12/17/global-warming-fake-news-from-the-start-n2423586

Here is the text:

Global Warming: Fake News from the Start

By Dr. Tim Ball and Tom Harris

President Donald Trump announced the U.S. withdrawal from the Paris Agreement on climate change because it is a bad deal for America. He could have made the decision simply because the science is false, but most of the public have been brainwashed into believing it is correct and wouldn't understand the reason.

Canadian Prime Minister Justin Trudeau, and indeed the leaders of many western democracies, though thankfully not the U.S., support the Agreement and are completely unaware of the gross deficiencies in the science. If they did, they wouldn't be forcing a carbon dioxide (CO_2) tax, on their citizens.

Trudeau and other leaders show how little they know, or how little they assume the public know, by calling it a 'carbon tax.' But CO_2 is a gas, while carbon is a solid. By calling the gas carbon, Trudeau and others encourage people to think of it as something 'dirty', like graphite or soot, which really are carbon. Calling CO_2 by its proper name would help the public remember that it is actually an invisible, odorless gas essential to plant photosynthesis.

Canadian Environment Minister Catherine McKenna is arguably the most misinformed of the lot, saying in a recent interview, for example, that "Polluters should pay." She apparently does not know that CO_2 is not a pollutant.

And, like many of her political peers, McKenna dismisses credentialed PhD scientists who disagree with her government's approach, labelling them "deniers." She does not seem to understand that questioning scientific hypotheses, even scientific theories, is what all scientists should do. That is why the official motto of the Royal Society is "Nullius in verba," Latin for "Take nobody's word for it." Ironically, the Society rarely practices this approach when it comes to climate change.

Mistakes such as those made by McKenna are not surprising considering that the entire claim of anthropogenic global warming (AGW) was built on falsehoods and spread with fake news.

The plot to deceive the world about human-caused global warming gathered momentum following creation of the United Nations Intergovernmental Panel on Climate Change (IPCC) in 1988 by the World Meteorological Organization and the United Nations Environment Program (UNEP). After spending five days at the U.N. with Maurice Strong, the first executive director of UNEP, Hamilton Spectator investigative reporter Elaine Dewar concluded the overarching objective of the IPCC was political. "Strong

was using the U.N. as a platform to sell a global environment crisis and the global governance agenda," wrote Dewar.

The political agenda required 'credibility' to achieve the deception. It also required some fake news for momentum. Ideally, this would involve testimony from a scientist before a legislative committee.

U.S. Senator Timothy Wirth (D-CO) was fully committed to the political agenda and the deception as he explained in a 1993 comment, "We've got to ride the global warming issue. Even if the theory of global warming is wrong, we will be doing the right thing…"

In 1988 Wirth was in a position to jump start the climate alarm. He *worked with colleagues on the Senate* Energy and Natural Resources Committee *to organize a June 23, 1988 hearing where Dr. James Hansen, then the head of the* Goddard Institute for Space Studies (GISS), was to testify. Wirth explained in a 2007 interview with PBS Frontline:

"We knew there was this scientist at NASA, you know, who had really identified the human impact before anybody else had done so and was very certain about it. So, we called him up and asked him if he would testify."

Hansen did not disappoint. The New York Times reported on June 23, 1988:

"Today Dr. James E. Hansen of the National Aeronautics and Space Administration told a Congressional committee that it was 99 percent certain that the warming trend was not a natural variation but was caused by a buildup of carbon dioxide and other artificial gases in the atmosphere."

Specifically, Hansen told the committee,

"Global warming has reached a level such that we can ascribe with a high degree of confidence a cause and effect relationship between the greenhouse effect and observed warming...It is already happening now"

Hansen also testified:

"The greenhouse effect has been detected and it is changing our climate now...We already reached the point where the greenhouse effect is important."

Dr. John S. Theon, Hansen's former supervisor at NASA, wrote to the Senate Minority Office at the Environment and Public Works Committee on January 15, 2009. "Hansen was never muzzled even though he violated NASA's official agency position on climate forecasting (i.e., we did not know enough to forecast climate change or mankind's effect on it). Hansen thus embarrassed NASA by coming out with his claims of global warming in 1988 in his testimony before Congress."

Hansen never abandoned his single-minded, unsubstantiated claim that CO_2 from human activities caused dangerous global warming. He defied the Hatch Act that limits bureaucratic political actions, and, in 2011, was even arrested in a protest at the White House against the Keystone XL pipeline, at least his third such arrest to that point.

Wirth, who presided at the hearing, was pre-disposed to believe Hansen and told the committee:

"As I read it, the scientific evidence is compelling: the global climate is changing as the earth's atmosphere gets warmer. Now, the Congress must begin to consider how we are going to slow or halt that warming trend and how we are going to cope with the changes that may already be inevitable."

So, like Trudeau and other leaders duped by the climate scare, Wirth has either not read or not understood the science. In fact, an increasing number of climate scientists (including Dr. Ball) now conclude that there is no empirical evidence of human-caused

global warming; there are only computer model speculations that humans are causing it and every forecast made using these models since 1990 has been wrong.

More than any other event, that single hearing before the Energy and Natural Resources Committee publicly initiated the climate scare, the biggest deception in history. It created an unholy alliance between a bureaucrat and a politician, that was bolstered by the U.N. and the popular press leading to the hoax being accepted in governments, industry boardrooms, schools, and churches across the world.

Trump must now end America's participation in the fake science and the fake news of man-made global warming. To do this, he must withdraw the U.S. from further involvement with all U.N. global warming programs, especially the IPCC as well as the agency that now directs it—the United Nations Framework Convention on Climate Change. Only then will the U.S. have a chance to fully develop its hydrocarbon resources to achieve the president's goal of global energy dominance.

--

Tom Harris, B. Eng., M. Eng. (Mech.)

Executive Director

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Canada

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613-728-9200

Note: To help ICSC cover its operating expenses, please go here: http://tinyurl.com/3ttkw82.

From: Joseph Bast
Sent: Sat 12/16/2017 6:01:02 PM
Subject: This is winning: Climate change is to be removed as a national security threat on Monday.

See the article at the end of this email. If this comes true... if the bureaucracy follows through with it... it is yet another big victory for us. It comes on top of a similar action by the Department of Interior:

http://www.nydailynews.com/news/national/new-interior-strategy-doesn-mention-climate-change-report-article-1.3587435

In July, some of us signed an open letter to the Trump administration asking it to remove AGW junk from Pentagon planning and operations:

http://www.washingtonexaminer.com/groups-push-to-gut-pentagons-climate-directives-in-spending-bill/article/2628566

Some of us met with a senior DOD official a couple years ago and laid out our case against making climate change part of national security policy. We were assured that while DOD might go through the motions of implementing Obama's directives, it would subject every real investment to rigorous cost-benefit analysis that didn't include alarmist AGW assumptions. A recent GAO report suggests this might in fact be what happened, which would be more good news:

http://thehill.com/policy/defense/364760-watchdog-pentagon-taken-few-steps-to-prepare-overseas-bases-for-climate-change

Sometimes, too, bureaucratic inertia and "deep state" opposition to a President works to our advantage.

Heartland produced two papers and circulated a third on this subject:

https://www.heartland.org/publications-resources/publications/climate-change-energy-policy-and-national-power

https://www.heartland.org/publications-resources/publications/critique-of-climate-change-adaptation-dod-can-improve-infrastructure-planning-and-processes-to-better-account-for-potential-impacts

https://www.heartland.org/_template-assets/documents/publications/Tom_Hayward_Global_Warming_.pdf

We also have a 67-page draft chapter on this subject prepared for *Climate Change Reconsidered II: Benefits and Costs of Fossil Fuels.* If you want to be a peer reviewer for this chapter, let me know and I'll send you the latest draft.

H/T Nancy Thorner.

Joe

https://wattsupwiththat.com/2017/12/15/breaking-trump-to-remove-climate-change-as-a-national-security-threat/

BREAKING: Trump to remove 'climate change' as a national security threat

Anthony Watts / 22 hours ago December 15, 2017

This is encouraging news:

The Trump administration will reverse course from previous Obama administration policy, eliminating climate change from a list of national security threats. The National Security Strategy to be released on Monday will emphasize the importance of balancing energy security with economic development and environmental protection, according to a source who has seen the document and shared excerpts of a late draft.

"Climate policies will continue to shape the global energy system," a draft of the National Security Strategy slated to be released on Monday said. "U.S. leadership is indispensable to countering an anti-growth, energy agenda that is detrimental to U.S. economic and energy security interests. Given future global energy demand, much of the developing world will require fossil fuels, as well as other forms of energy, to power their economies and lift their people out of poverty."

…

President Obama made climate change, and the burdensome regulations that accompany its focus, a primary focus of his administration, including in his National Security Strategy released in 2015. "[W]e are working toward an ambitious new global climate change agreement to shape standards for prevention, preparedness, and response over the next decade," that report said.

"In some ways, [climate change] is akin to the problem of terrorism and ISIL," Obama said at climate talks in Paris in 2015. During a weekly address, Obama said "Today, there is no greater threat to our planet than climate change."

In September 2016, President Obama released a memorandum requiring federal agencies to consider the effects of climate change in the development of national security-related doctrine, policies, and plans. All of this alarmed critics concerned with more pressing security risks.

Buh-bye!

Read more at The Federalist

From: Joseph Bast
Sent: Fri 12/15/2017 10:42:12 PM
Subject: Jeff Jacoby: Could global warming be a good thing?

H/T Larry Greenberg.

Joe

https://townhall.com/columnists/jeffjacoby/2017/12/07/the-blessings-of-climate-change-n2419314

The Blessings of Climate Change

Jeff Jacoby | Dec 07, 2017

POINT HOPE, ALASKA, is tiny and ill-provisioned, an Arctic backwater so inaccessible that basic groceries have to be flown in and gasoline can only be brought in by barge during the summer. The town is remote not only geographically, but also digitally: Its internet connection is so slow that teachers must spend hours downloading course material that most of us could pull off the internet in minutes.

But Point Hope's luck is changing. High-speed internet is coming, and with it the benefits of ties to the world: Improved education and health care, more options for consumers, new customers for local artists, and a chance to attract tourists.

All thanks to global warming.

The New York Times reported Sunday that Quintillion, a global communications company, is taking advantage of melting sea ice to build a faster digital link between Europe and Asia by positioning high-speed internet cables beneath the Arctic Ocean. Until recently, cable-laying ships couldn't get too far north, but climate change has meant less ice north of the Bering Strait. Consequently, Point Hope is now a stop on Quintillion's shipping route, and the company is supplying the town with broadband service. That means a better life for residents of one of the nation's most isolated communities.

In the church of climate alarmism, there may be no heresy more dangerous than the idea that the world will benefit from warming. Zealous preachers seek to scare their flock with forecasts of catastrophe, horror, and threats to civilization. Anyone who demurs is denounced as an apostate: an anti-science "denier."

But the truth — the inconvenient truth, to coin a phrase — is that while climate change brings negatives, it brings positives too. Polar melting may cause dislocation for those who live in low-lying coastal areas, but it will also lead to safe commercial shipping in formerly inhospitable northern seas, and to economic opportunity for high-latitude residents in places like Point Hope.

Shifts in climate are like shifts in the economy: They invariably spell good news for some and bad news for others. Falling interest rates are a blessing to homebuyers but a curse to savers; a strong dollar helps consumers buying imports but hinders exporters selling abroad. In the same way, changes in climate generate winners *and* losers. Some of global warming's effects will be disagreeable; others will be very welcome.

Worldwide, cold kills 20 times as many people as heat, so a warming planet will save lives. A plethora of data confirms the greater deadliness of cold weather, even in countries with very different climate patterns. One study of mortality rates, for example, found that deaths from cold outnumbered those from heat by a ratio of 33-to-2 in Australia, and 61-to-3 in Britain. Of 2,000 weather-related deaths in America tallied by the Centers for Disease Control, 63 percent were caused by excessive cold vs. 31 percent caused by excessive heat.

A warming planet will also be a greener planet. *Is* a greener planet. Rising levels of carbon dioxide in the atmosphere have already led to "persistent and widespread increase" in leaf cover — i.e., greening — across as much as half of the world's vegetated regions, according to a study published in Nature last year.

Alarmists mindlessly condemn atmospheric CO_2 as "carbon pollution," but carbon dioxide is essential to the health and grown of plant life.

NASA satellites show that over the past 35 years, there has been an increase in world greenery equal in area to twice the continental United States. Climate change has been a particular blessing in Africa, where the "Sahel greening" has significantly reduced famine.

The effects of climate change range from the obvious (lower heating bills) to the subtle (more habitat for moose and endangered sharks). Territory formerly deemed too forbiddingly cold will grow more temperate — and valuable. Delicacies from lobster to blueberries may become more plentiful.

Bottom line? Global warming will bring gains as well as losses, upsides no less than downsides. Climate science isn't a black-and-white morality tale. Our climate discourse shouldn't be either.

From: Joseph Bast
Sent: Fri 12/15/2017 9:22:33 PM
Subject: Summary of 2012 District Court ruling upholding the Endangerment Finding

In the course of editing a policy study, I came across this summary of *Coalition for Responsible Regulation, Inc., et al., v. Environmental Protection Agency,* No. 09-1322 (D.C. Cir. June 26, 2012), in which the D.C. Circuit Court of Appeals upheld the Endangerment Finding. It reminded me of several arguments made and still being made in the debate today. It helps explain why left environmentalists remain confident that the Endangerment Finding can withstand challenges, and should remind climate scientists why courtrooms are not necessarily a good place to debate the science.

Joe

https://www.rmmenvirolaw.com/2012/06/d-c-circuit-court-of-appeals-upholds-epas-greenhouse-gas-regulations/

D.C. Circuit Court of Appeals upholds EPA's Greenhouse Gas Regulations

June 29, 2012

On June 26, 2012, in Coalition for Responsible Regulation, Inc., et al., v. Environmental Protection Agency, No. 09-1322 (D.C. Cir. June 26, 2012), the D.C. Circuit Court of Appeals upheld the Environmental Protection Agency's Endangerment Finding and Tailpipe Rule regarding greenhouse gases. The court also upheld the agency's interpretation of the Clean Air Act (CAA) requiring major stationary sources of greenhouses gases to obtain construction and operating permits. Opponents of these rules disputed the Endangerment Findings and EPA's authority to regulate GHG emissions under the CAA based upon the finding.

Background and Procedure

The EPA promulgated the disputed rules following the Supreme Court's holding in Massachusetts v. EPA that GHGs may be regulated as an air pollutant under the CAA. In response to this holding, the EPA first issued its Endangerment Finding for GHGs. The Finding

was based "on a considerable body of scientific evidence," and EPA concluded that emissions of specified GHGs "contribute to the total greenhouse gas air pollution, and thus to the climate change problem, which is reasonably anticipated to endanger public health and welfare." Based on this finding, the EPA was required under the CAA to establish motor-vehicle emission standards for GHGs. The ensuing Tailpipe Rule set GHG emission standards for cars and light trucks as part of a joint rule-making with fuel economy standards issued by the National Highway Traffic Safety Administration.

Due to EPA's standing interpretation of the CAA, the Tailpipe Rule automatically triggered regulation of stationary GHG emitters under the Prevention of Significant Deterioration of Air Quality (PSD) program and Title V. The PSD program requires state-issued construction permits for stationary sources producing either 100 tons per year (tpy) or 250 tpy of any air pollutant. Title V requires state-issued operating permits for stationary sources that have the potential to emit at least 100 tpy of any air pollutant. EPA then issued two rules phasing in stationary source GHG regulation. First, in the Timing Rule, EPA concluded that an air pollutant becomes subject to regulation under the CAA (and therefore to PSD and Title V) only once a regulation requiring control of that pollutant takes effect. Therefore, EPA determined major stationary emitters of GHGs would be subject to PSD and Title V permitting requirements on the date the Tailpipe Rule became effective—or the date when GHGs first became regulated under the CAA. Following the Timing Rule, EPA promulgated the Tailoring Rule, providing that only the largest sources of GHG emissions, those exceeding 75,000 or 100,000 tpy CO2e, would initially be subject to the GHG permitting. This rule was adopted after the EPA determined requiring permitting for all sources would be overwhelmingly burdensome for both permitting authorities and stationary sources.

A number of states and regulated industries filed petitions for review of these new GHG regulations, arguing the EPA misinterpreted the CAA or otherwise acted arbitrarily and capriciously.

Challenges to the Endangerment Finding.

Petitioners challenged EPA's Endangerment Finding on numerous substantive and procedural grounds. All challenges were rejected by the court.

EPA's interpretation of CAA section 202(a)(1).

Petitioners argued that the EPA improperly interpreted CAA § 202(a)(1) as restricting the finding to a science-based judgment without considerations of policy concerns and regulatory consequences. Petitioners believed the EPA was required to consider the benefits of activities emitting GHGs, the effectiveness of emissions regulation, and the potential for societal adaptation to or mitigation of climate change. Petitioners argued that, by not considering these factors, EPA acted arbitrarily and capriciously.

The Court determined the plain language of CAA § 202(a)(1) was contrary to these arguments. The language of the section requires only that the endangerment evaluation relate to whether an air pollutant causes or contributes to air pollution which may reasonably be anticipated to endanger the public health or welfare. The court held that the evaluation process required "scientific judgment"—not policy discussions—about the potential risks of GHGs. The court also held that CAA § 202(a)(1) does not allow the EPA to consider, as part of the endangerment inquiry, the implications or impacts of regulations that might result from a positive endangerment finding.

The Scientific Record

Petitioners also challenged the adequacy of the scientific record underlying the endangerment findings. Petitioners initially challenged the EPA's reliance on publications issued by the Intergovernmental Panel on Climate Change (IPCC), the U.S. Global Climate Research Program, and the National Research Council. The court summarily rejected this argument, noting the scientific literature was peer-reviewed and consisted of thousands of individual studies on GHGs and climate change. The court also rejected, as "little more than a semantic trick," that EPA delegated its authority by relying on these studies. The EPA relied on the reports not as substitutes for its own judgment but as evidence upon which it relied to make its ultimate judgment. The court noted that EPA is not required to re-prove "the existence of the atom every time it approaches a scientific question."

Finally, in their challenge to the adequacy of the scientific record, Petitioners argued EPA erred in reaching the Endangerment Finding due to scientific uncertainty surrounding climate change. The court responded by noting the "substantial" body of scientific evidence supporting the Endangerment Finding. The court held the existence of some uncertainty does not, without more, warrant invalidation of an endangerment finding. The statute itself is designed to be precautionary in nature and to protect the public health. Further, the Supreme Court itself ruled in Massachusetts v. EPA that the agency may make an endangerment finding despite lingering

uncertainty. The court held that the EPA's decision was supported by substantial evidence and that the agency had relied on the scientific record "in a rational manner." The court noted that it was not its role to reweigh the evidence before it and reach its own conclusion.

Lack of a quantitative threshold

Petitioners contended that the Endangerment Finding was arbitrary and capricious because the EPA did not define, measure or quantify either the atmospheric concentration at which GHGs endanger the public health or welfare, the rate or type of climate change anticipated to endanger the public welfare, or the risk or impacts of climate change. The court, again relying on the plain language of CAA § 202(a)(1), held that EPA is not required to establish a precise numerical value as part of its endangerment findings. Instead, section 202(a)(1) allows for a qualitative approach that allows the EPA to make case-by-case determinations based on the potential severity of harm in relation to the probability that the harm will occur.

EPA's definition of "air pollutant"

EPA defined the GHG "air pollution" and "air pollutant" subject to the Endangerment Finding as an aggregate of six GHGs, which the EPA called "well mixed greenhouse gases": carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). Industry Petitioners argued EPA's decision to include PFCs and SF6 was arbitrary and capricious because motor vehicles do not emit these pollutants. The court responded that no petitioner established standing to make this argument, as no petitioner could demonstrate an injury-in-fact resulting from EPA's decision to include PFCs and SF6 in the Endangerment Finding.

Failure to submit Endangerment Finding for review by Science Advisory Board

Petitioners claimed that the EPA's failure to submit the Endangerment Finding to the Science Advisory Board (SAB) violates its mandate to "make available" to the SAB "any proposed criteria document, standard, limitation, or regulation under the Clean Air Act" at the time it provides the same "to any other Federal agency for formal review and comment." The court noted that it wasn't clear this obligation was even triggered because it wasn't clear that the EPA provided the Endangerment Finding to any Federal agency for formal review and comment—it had only been submitted to the Office of Information and Regulatory Affairs pursuant to Executive Order 12,866 for informal review. The court found that even if the EPA violated its

mandate by failing to submit the Endangerment Finding to the SAB, Petitioners did not show this error was prejudicial to the rulemaking.

Denial of petitions seeking reconsideration of Endangerment Finding

In the final challenge, Petitioners argued the EPA erred by denying all ten petitions for reconsideration of the finding. Petitioners asserted that internal documents and emails obtained from the University of East Anglia's Climate Research Unit undermined the scientific evidence upon which the EPA relied. When determining whether to commence reconsideration of a rule, EPA considers an objection to be of "central relevance to the outcome" of that rule "if it provides substantial support for the argument that the regulation should be revised." Additionally, the party raising the objection must demonstrate that it was impracticable to raise the objection during the public comment period.

The court rejected Petitioners' assertion, finding that they failed to provide substantial support for their arguments that the Endangerment Findings should have been revised. The assessment had relied on over 18,000 peer-reviewed studies, and two errors identified in IPCC reports were harmless because EPA did not actually rely on such errors to reach the positive Endangerment Finding. Isolated errors identified by Petitioners did not rise to the level of substantial evidence required to support their arguments to overturn the Endangerment Findings.

Challenges to the Tailpipe Rule

Petitioners did not directly challenge the vehicle emission standards set by the Tailpipe Rule, and instead argued the EPA acted arbitrarily and capriciously by failing to consider and justify the costs of its conclusion that the Rule triggers stationary-source regulation under the PSD Program and Title V. The court rejected this argument and held that once EPA made the Endangerment Finding, the language of section 202(a)(1) created a non-discretionary duty that the EPA adopt regulation applicable to vehicle GHG emissions. The court noted this interpretation was supported by the Supreme Court's decision in Massachusetts v. EPA.

Petitioners also advanced a claim under the Administrative Procedures Act, alleging that EPA failed to show that the proposed standards "would meaningfully mitigate the alleged endangerment." The court rejected this argument, indicating that petitioner misread earlier D.C.

Circuit decisions on EPA air regulations. EPA was under no requirement to establish a particular level of mitigation that the regulation had to achieve. Instead, EPA was only required to show that the Tailpipe Rule would contribute to "meaningful mitigation of greenhouse gas emissions."

Finally, the court rejected an argument made by Petitioners that EPA should have considered the cost of stationary source permitting that would follow adoption of the Tailoring Rule. The D.C. Circuit had previously held that section 202(a)(2) reference only compliance costs to the motor vehicle industry and does not mandate consideration of costs to other entities not directly subject to the proposed tailpipe emission standards.

Challenges to EPA's interpretation of PSD Permitting, Timing and Tailoring Rules

Petitioners challenged EPA's longstanding interpretation of the scope of the permitting requirements for construction and modification of major emitting facilities under the CAA. Since 1978, EPA has defined "major stationary source" as a source that emits major amounts of "any air pollutant regulated under the [CAA]." This interpretation held through EPA's PSD regulations adopted in 1980 and 2002. "Any pollutant" was interpreted by the EPA to include both criteria pollutants for the National Ambient Air Quality Standards (NAAQS) and non-criteria pollutants. As a result, when EPA determined that GHGs would become a regulated pollutant, emissions of more than 100 or 250 tpy of GHGs would trigger a PSD permitting requirement. Petitioners challenged this interpretation and argued that EPA could and should have avoided extending the PSD permitting program to major GHG emitters. The court adopted a plain meaning of section 169(1), which requires PSD permits for stationary sources emitting major amounts of "any air pollutant." Both the EPA and the Supreme Court in Massachusetts v. EPA clearly established that GHGs are air pollutants. As a result, the court rejected Petitioners' arguments that EPA should not have extended the PSD permitting program to major GHG emitters. The court rejected the Petitioners' alternative interpretations of the PSD permitting triggers, as none cast doubt on the unambiguous nature of the statute.

Petitioners also challenged the Tailoring and Timing Rules established by EPA to facilitate initial regulations of GHGs. The court determined Petitioners lacked standing to challenge these two Rules because none had suffered an injury-in-fact as a result of the rules. Instead, the court found the Timing and Tailoring Rules actually mitigated Petitioners' purported injuries, as many would be subject to PSD and Title V permitting requirements at an earlier time absent the rules.

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From: Joseph Bast
Sent: Thur 11/16/2017 9:17:24 PM
Subject: Washington Post spies on our Red Team meeting, again
Energy Freedom Score Card.pdf

Friends,

Washington Post reporters continue their almost hysterical focus on The Heartland Institute's efforts to participate in the national and international debate over climate change. Apparently they were able to record our Red Team briefing in Houston last week, and even stole, scanned and posted a document that was circulated at the meeting.

The article is below. The stolen document is attached. If you can improve on this rough effort at an "Energy Freedom Score Card," please send me your suggestions. Maybe I can find the anonymous author and ask him to update it.

Joe

http://wapo.st/2APVED1

Washington Post
11/16/17

This group thinks Trump hasn't done enough to unravel environmental rules. Here's its wish list.

The activists gathered behind closed doors in a Houston hotel meeting room last week had long existed on the political fringe. They'd dismissed the science behind climate change, preached the virtues of fossil fuels and seethed about the Environmental Protection Agency's power and reach.

They also had been largely ignored by many top federal officials. Until the election of President Trump.

But now, at the private meeting sponsored by a free-market think tank, the Heartland Institute, the activists were both giddy and grumpy. So much of what the Trump administration had done to roll back Obama-era environmental regulations was positive, they agreed, as were the White House's efforts to promote the oil and gas industry and halt federal action to combat climate change.

Heartland officials handed out a three-page "Energy Freedom Scorecard" that evaluated the extent to which Trump and his deputies had delivered on their top policy priorities. As much as they welcome the administration's efforts, the scorecard made clear that they think the president could do more, much more.

The scorecard, obtained by The Washington Post, and the private discussion, which was recorded and shared by a participant, highlight the extent to which those on the right are pushing Cabinet members such as EPA Administrator Scott Pruitt and Interior Secretary Ryan Zinke to enact even more sweeping changes. And they show how conservatives are working to place key allies in top policy posts in the White House and elsewhere, including on boards that help guide federal policy.

"There are ways to get names in, and we've used every door and window and crack in the wall we can use," David Schnare remarked per the recording. Schnare served on Trump's beachhead team for the EPA but was forced out this spring after clashing with Pruitt.

The scorecard lists several items as "done," from rescinding Obama-era rules curbing carbon emissions from power plants and opting out of the Paris climate agreement to reducing "government funding of environmental advocacy groups" by limiting legal settlements and approving the Keystone XL pipeline as well as other oil pipelines. Nineteen other items fall into the "started" category, such as cutting "government funding of climate change research"; repealing "unnecessary restrictions and state bans on fracking"; and ending "conflict of interest on scientific review boards."

But 15 goals listed "not done" include ending federal tax credits to wind and solar producers and no longer basing military planning and strategies "on the predictions of flawed climate models."

Heartland Institute spokesman Jim Lakely confirmed that the group produced the scorecard but declined to elaborate.

The fact that so many priorities remain on the to-do list, which was drafted on Oct. 15, helps explain why several attendees at the private session still groused about the administration's pace. Schnare and other participants also railed about other issues. Competitive Enterprise Institute senior fellow Myron Ebell, who headed the EPA's transition team for the administration, described its "key failing" as a "totally dysfunctional personnel process."

"We only got people nominated to the subordinate positions at EPA this summer," Ebell said.

Schnare criticized both Pruitt and the White House for not trying to revoke EPA's 2009

"endangerment finding," which provided the scientific basis for the agency to regulate greenhouse gases as a pollutant under the Clean Air Act.

"So the question then becomes, what pressure can you put on Mr. Pruitt to make him do it?" Schnare told the group, before starting to mimic his former boss's twang. "The answer he gave me was, 'Dave, if the president tells me to do it, I'll do it. Otherwise, I'll decide what I'm going to do.' Well, okay, and then I resigned."

At another point, Schnare raised the idea of using the threat of litigation to force the EPA to act — an approach conservatives have dubbed "sue and settle," and one that Pruitt curtailed after criticizing it for benefiting environmental groups.

"If we come up with this case and say, well, this is what we want to do, and then we send a little note off to Scott Pruitt and say, 'We are going to sue you, would you like to sit down and talk.' It's not exactly sue and settle, it's just, 'We are going to sue your a–, and you ought to settle,' " Schnare said on the recording. His audience laughed in response.

But Pruitt, in a video message for the Heartland gathering, emphasized their shared sense of mission.

"Think back to Nov. 8 of last year, the lack of optimism, the concern about where we were headed as a country. And think about where we are today," he said in the video. "So, I want to say to you at the Heartland Institute, thanks for what you're doing to advance energy. Thank you for what you're doing to advance natural resources."

While neither Pruitt nor Interior Deputy Secretary David Bernhardt could make the meeting in person, Interior energy policy counselor Vincent DeVito did address the crowd.

Asked this week why DeVito had chosen to speak to the conservative group, Interior spokeswoman Heather Swift said in an email, "The summit was an opportunity to communicate the progress the department has made on energy and restoring multiple-use and access to federal lands, as well as share ideas and perspectives on how to achieve energy dominance."

The institute's scorecard on energy issues, Swift added, reflected that Interior "is making incredible progress on restoring traditional multiple uses and access to public lands and toward cutting costly and job-killing regulations on responsible energy development."

One environmentalist had a different take on the gathering's discussion. "You'd think these guys would be happy," Greenpeace USA researcher Connor Gibson said in an email Wednesday. Instead, "at a time when they have extraordinary power, they have formed a circular firing squad, mocking each other for not holding extreme enough positions and chastising Trump's EPA for not prioritizing an attack on the legal mandate for EPA to control carbon emissions."

The closed-door discussion last week certainly featured praise for Trump and his deputies. Heartland's chief executive Joseph Bast, for example, made a point of explaining to his colleagues how the president's rhetoric on issues such as climate change had already produced

results.

"I think the president has done a nice job of not talking about global warming. When's the last time you heard Donald Trump say 'climate change' or 'global warming'?" Bast said, according to the recording. "That's shifting the debate. The less the president talks about it, the less often it appears in news stories and on TV, the less often it's going to be an issue. So, this is how big issues disappear."

The following day's events at what was dubbed the America First Energy Conference amounted to a lengthy assault on the conclusions of mainstream science and federal climate action. There were sessions on the "future of coal," "the cost of excessive regulation" and the "benefits of ending the war on fossil fuels." Speakers assailed most climate scientists as alarmists, extolled the benefits of fossil fuels and blasted environmental activists, whom they equated with government overreach.

"People don't trust the environmental left. They know they're crazy," one speaker said.

Another criticized the country's growing number of wind turbines, noting that they kill large numbers of eagles and other birds each year. Still another speaker dismissed efforts to curb carbon dioxide emissions to combat climate change — a cause embraced by literally every other nation in the world — and instead argued that increased emissions were helping crop growth.

"We are greening the planet with carbon dioxide," he said, and cutting back on fossil fuels would be a "disaster. … There is no downside to carbon dioxide. It is the breath of life."

Energy Freedom Score Card
(as of October 15, 2017)

Mission Statement: Affordable, reliable, and plentiful energy enables us to protect the environment while also creating jobs and the goods and services we need. Expensive and unreliable energy, like the kind produced by ethanol and commercial wind and solar companies, destroys jobs and harms the environment.

Fossil fuels are the foundation of economic growth and prosperity. Taxing them or making them more scarce causes economic growth to slow, makes food and other essential goods more expensive, and many of the good things we take for granted are lost.

We owe it to future generations to leave the world a better place than we found it. Renewable energies don't protect the environment. They actually harm it by being less efficient and more land-intensive than fossil fuels.

Status	Recommendation
1. Rein in EPA Repeal unnecessary regulations affecting air and water quality and energy production, end the abuse of science, end subsidies to leftist groups.	
DONE	Withdraw implementation of the Waters of the U.S. rule.
STARTED Some regs on coal-powered generation have been removed or delayed. Others are up for review.	Roll back recent EPA regulations on ozone, small particles, and other air pollutants that are based on discredited epidemiology and toxicology.
STARTED Trump ended terms of many long-time members of science advisory boards with conflicts of interest.	End conflicts of interest on scientific review boards.
STARTED Pruitt's withdrawal of the CPP said there are no health effects below EPA's standard for PM-2.5.	Formally end the use of the "linear no-threshold assumption" in determining safe levels of exposure to pollutants.
STARTED Trump said Obama's preliminary approval of higher CAFÉ standards will be reviewed.	Roll back Corporate Average Fuel Economy (CAFE) standards, which result in the deaths of thousands of car and truck passengers every year, needlessly increase the price of new cars, and favor foreign car manufacturers.
STARTED Pruitt announced an end to "sue-and-settle"	Dramatically reduce government funding of environmental advocacy groups, including funds delivered to such groups through the "sue and settle" scam.
NOT DONE	End the use of "secret science" by EPA and other regulatory agencies.
NOT DONE	End reliance on near-zero risk ratios.
NOT DONE	Enforce the Data Quality Act with respect to the junk science promoted and funded by EPA on air pollution and toxicology.
NOT DONE	Congress should repeal the Delaney clause, which essentially commits the FDA and other government agencies to an impossible zero risk standard.

2. Repeal Global Warming Regulations

End the war on fossil fuels by withdrawing from the Paris and FCCC, the endangerment finding, the social cost of carbon, Clean Power Plan, and other regulations justified by global warming alarmism.

DONE	Withdraw from the Paris Accord and stop funding the Green Climate Fund.
DONE	Retract and rescind "social cost of carbon" estimates and stop including them in required cost-benefit analysis of new regulations.
DONE	Withdraw/repeal the Clean Power Plan.
STARTED Pruitt has announced plans for a Red Team, progress has been slow.	Create a President's Council on Climate Change charged with cutting through the politics and bias that infected climate science and policymaking during the Obama administration and advising the President on what policies to repeal and what policies to pursue.
STARTED At least some research grants are being cancelled, the president's budget called for a 30% cut to EPA budget.	Dramatically reduce government funding of climate change research pending the findings of the new President's Council on Climate Change. When funding for such research resumes, require that equal amounts go to studying natural and man-made climate change.
NOT DONE	Withdraw from the UN's Framework Convention on Climate Change.
NOT DONE	Stop basing military planning and strategies on the predictions of flawed climate models.
NOT DONE	Support legislation repealing Obama's Executive Order 13693, which requires the Department of Defense to create a number of climate change programs and policies.
NOT DONE	End funding for the United Nations' biased climate change programs, in particular the Intergovernmental Panel on Climate Change (IPCC).

3. End Climate Profiteering

End subsidies, tax credits, feed-in tariffs, regulatory carve-outs, and mandates that benefit wind, solar, and ethanol producers yet produce no environmental benefits.

STARTED Some states have frozen renewable energy mandate targets, some have considered repealing existing mandates, but progress is slow.	Repeal state Renewable Power Mandates (RPMs) where they exist and oppose their option in states that don't currently have them.
STARTED* A DOE proposal to FERC would start to level the playing field between coal and renewables. See footnote below.	Have FERC grant higher rates to coal generation to recognize the important role they play in provide base-load energy.
STARTED Trump's budget proposed moving forward with Yucca Mountain	Remove regulatory obstacles to the expansion of nuclear power and open the nuclear waste storage facility at Yucca Mountain.
STARTED Trump froze current ethanol production minimum rather than raising it.	Abolish the Renewable Fuels Standard (RFS) program, which mandates that refiners add ethanol to gasoline.

NOT DONE	End federal tax credits to wind and solar producers.
NOT DONE	Convince state PUCs not to implement "zombie" Obama-era regulations and subsidies that lead to the premature closing of coal-powered generation.
NOT DONE	Hold solar and wind power producers to the same environmental protection standards as are applied to coal and natural gas power generators.

4. Use It, Don't Lose It

Achieve "energy dominance" by maximizing U.S. production of fossil fuels. End excessive restrictions of exploration, development, and production of fossil fuels on public lands as well as private lands,

DONE	Approve Keystone XL and other pipelines blocked by President Obama.
STARTED Some restrictions have been withdrawn, Interior is reducing size of some national monuments.	Roll back unnecessary regulations on hydraulic fracturing, mining, and oil and gas exploration offshore and on federal lands.
STARTED Trump ended an Obama-era anti-fracking rule, states are debating restrictions on fracking.	Repeal unnecessary restrictions and state bans on fracking.
STARTED	Expand U.S. exports of coal, liquefied natural gas, and oil as a way to reduce the reliance of allies and other countries on energy imports from Russia and other bad actors in the international community.

To: Jay Lehr (External) Ex. 6 - Personal Privacy
From: Joseph Bast
Sent: Wed 11/15/2017 10:06:00 PM
Subject: Jay Lehr to lead team critique of Climate Science Special Report

Friends,

Jay Lehr has agreed to serve as senior editor of a critique of the "Climate Science Special Report." If you would like to serve on a team of scientists, economists, lawyers, and others who can help write that critique, please contact Jay at Ex. 6 - Personal Privacy

A tentative deadline for release of this critique has been set for the end of January 2018. Perhaps obviously, a detailed critique of this 670-page report cannot be ready on such a short time line, but we hope for a clear and well documented reply nevertheless.

If you are aware of other organizations or individuals who are producing critiques, I hope you will bring them to Jay's attention, and Jay to theirs.

Best regards!

Joe

From: Joseph Bast
Sent: Friday, November 03, 2017 1:47 PM
Subject: Climate Science Special Report released

The Climate Science Special Report, "volume one of the Fourth National Climate Assessment," was released a few minutes ago. The entire report can be found here: https://science2017.globalchange.gov

But in August the Trump administration disbanded the interagency committee that was working on the report:

https://www.washingtonpost.com/news/energy-environment/wp/2017/08/20/the-trump-administration-just-disbanded-a-federal-advisory-committee-on-climate-change/?utm_term=.5c0daa1fba41

Not sure why it was nevertheless released... probably the deep state at work. Here were my reactions to this report, from my earlier review of the draft back in August.

Scientific Critique of USGCRP's 2017 Climate Science Special Report

The U.S. Global Change Research Program (USGCRP) is a joint program of 13 U.S. national government agencies charged with developing a program to "understand, assess, predict, and respond to" global climate change. It produces reports to Congress every four years titled "National Climate Assessment." The three reports released to date have all exaggerated the amount of global warming, the human role in that warming, the negative impacts of the same, and the certainty of the science surrounding the causes and consequences of climate change. For example, a team of climate scientists led by Patrick Michaels of the Cato Institute said of the Third National Climate Assessment:

This National Assessment is much closer to pseudoscience than it is to science. It is as explanatory as Sigmund Freud. It clearly believes that virtually everything in our society is tremendously dependent the surface temperature, and, because of that, we are headed towards certain and inescapable destruction, unless we take its advice and decarbonize our economy, pronto. Unfortunately, the Assessment can't quite tell us how to accomplish that, because no one knows how.

https://object.cato.org/sites/cato.org/files/pubs/pdf/the-missing-science-of-draft-assessment.pdf

The latest (June 28) draft of the Fourth National Climate Assessment is similarly flawed. This brief critique makes ten points which track the content and organization of the assessment:

1. The report is a **legacy product** of a political regime that captured and "weaponized" this government agency to advance its agenda, much as it did to the IRS, Justice Department, and other departments. The report was written by hold-overs from the Obama administration, and represents only the very biased and politicized perspective of a small clique of government scientists on a complex issue.

2. The report **fails to provide an objective and comprehensive review** of the available literature. Contrary to media reports, the report was not made available to respected climate scientists for peer reviewed. Several scientists report that their requests for drafts were rejected. [Soon and Happer, others?] The final draft shows no evidence of being informed by the efforts of critics of the Obama administration's legislative agenda or even a single reference to the multiple reports of the Nongovernmental International Panel on Climate Change (NIPCC).

3. The report **relies on past reports by the United Nation's Intergovernmental International Panel on Climate Change (IPCC)**, which the Trump administration properly rejects. The report refers to the IPCC's 2013 report as "rigorously-reviewed international assessments," when in fact the IPCC is controversial, scandal-ridden, and its procedures fall far short of the requirements of the Data Quality Act. [*Why Scientists Disagree*, pp. 38-44]

4. The report's most frequently quoted conclusion, "that it is *extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20th century," is **only a restatement of the opinions of activists and advocates in the field of global warming**, and *not* a statement about the underlying science, which remains incomplete and uncertain. This is the same flawed reasoning and semantic games as used by the IPCC to make the same statement. It is not a statement of scientific fact, but rather of "some experts' opinions" without any basis in probability analysis or scientific forecasting. [InterAcademy Council Audit, p. 61ff]

5. The report **denies the existence of the "pause" in global warming** during the past 18 years or longer, something even the IPCC admits. It cites manipulated and unreliable databases when superior databases are readily available, apparently in an effort to once again "hide the decline."

6. The report **ignores at least 27 peer-reviewed articles saying climate sensitivity** is lower than the amount assumed by IPCCC and EPA. Climate sensitivity is the amount of temperature change likely to result from a doubling of the concentration of CO2 in the atmosphere from pre-industrial times. If the climate is less sensitive to CO2 than we thought four years ago, this report ought to reflect that fact. [Cited in Monckton, Soon, Legates, and Briggs 2015; reproduced in *Why Scientists Disagree* pp 66-69]

7. The report **denies extensive evidence that weather is not becoming more extreme** over time and physical evidence explaining why it will be less extreme in a warmer world. It recites Al Gore's litany of extreme weather predictions even though IPCC and independent scholars have thoroughly debunked it. [Chapter 7 of CCR-II: Physical Science]

8. The report repeats **false claims about the loss of arctic sea ice** – falsifying trends and causes and making false forecasts – in order to support its narrative of catastrophic man-made global warming. Artic sea ice is not at historic low levels, it varies naturally due to known and unknown external forcings and internal variability, and it is not evidence of a human impact on climate. [Chapter 5 of CCR II: Physical Science]

9. The report **misrepresents scenarios and computer-based simulations of future climate conditions as *scientific forecasts* of future climate conditions**, when in fact it is well known among scientists that future climates cannot be predicted. Prof. Scott Armstrong, the world's

leading authority on scientific forecasting, and coauthors have shown conclusively that the predictions made by the IPCC, EPA, and other government agencies are merely the opinions of some experts, not scientific forecasts, and cannot provide a reliable basis for public policy.

10. The report **misrepresents sea-level rise and changes in ocean pH levels**, portraying both as dire catastrophes resulting from man-made global warming, when in fact there is considerable evidence that sea level has not accelerated from its historic rates and considerable evidence that higher pH levels have positive as well as adverse effects on ocean life. [Chapter 6 of CCR-II: Physical Science]

Joe

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To: Nonoy Oplas Ex. 6 - Personal Privacy
From: Joseph Bast
Sent: Wed 11/15/2017 5:45:04 PM
Subject: Heartland's America First Energy Conference in BusinessWorld, the Philippines' premier business newspaper

Thanks, Nonoy!

Joe

From: Nonoy Oplas Ex. 6 - Personal Privacy
Sent: Wednesday, November 15, 2017 11:38 AM
To: Jim Lakely; Nikki Comerford; Joseph Bast; paul driessen Gmail 09; Willie Soon; Dave Legates; Joe Leimkuhler; Myron Ebell; Vincent DeVito
Subject: Articles about the Heartland Energy Conference

Hi Jim, Nikki, Joe and all,

May I share with you my recent articles on energy in my column in BusinessWorld, the Philippines' premier business newspaper.

1. US energy trading and implications for Asia and Philippines, Nov. 16, 2017,

http://bworldonline.com/us-energy-trading-implications-asia-philippines/

(I mentioned the Heartland conference, presentations by Joe Leimkuhler and Paul Driessen)

2. US energy policies and implications in Asia and Philippines, Oct. 31, 2017,

http://bworldonline.com/us-energy-policies-implications-asia-philippines/

(also mentioned the Heartland energy conf. here)

3. Airport transfers and tourism, Nov. 10, 2017,

http://bworldonline.com/airport-transfers-tourism/

(still mentioned the Heartland conf here)

Last month, I have a 2-parts debate with a former PH Secretary of Economic Planning who advocates a high carbon tax.

4. A high carbon tax is irrational, Oct. 19, 2017,

http://bworldonline.com/high-carbon-tax-irrational/

5. Why a carbon tax is wrong, Oct. 12, 2017,

http://bworldonline.com/carbon-tax-wrong/

Thanks again Jim, Nikki.

I hope to write about the presentations by Dave Legates, Myron Ebell, others in my future energy articles.

Nonoy

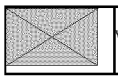
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Bienvenido "Nonoy" Oplas, Jr.
President, Minimal Government Thinkers
Columnist, BusinessWorld, "My Cup of Liberty"

Fellow, Stratbase-Albert del Rosario Institute (ADRi)

Author, Health Choices and Responsibilities, (2011)
Author, Liberalism, Rule of Law and Civil Society (2014)

Mobile: **Ex. 6 - Personal Privacy**


Virus-free. www.avast.com

From: Joseph Bast
Sent: Wed 11/15/2017 3:19:47 PM
Subject: Finding "reviews" on Google
Review Screenshot.PNG

Friends,

Several of you replied to my request that you post a one-sentence review of Heartland on Google by reporting the "review" feature doesn't appear on the search results page I linked to in my previous message. Heartland's deputy communications director explains:

The reviews are part of the Google Maps platform. If you aren't seeing the Google Maps widget on the right sidebar after you search, you can go to maps.google.com and search for Heartland Institute Arlington Heights, IL. You should find our entire Google 'profile' with address, photos, reviews, etc.

It does appear you have to be logged in to Google to actually write a review, and you will be prompted to login when you click on the 'write a review' link.

I use Google Maps frequently, which apparently is why this came up on my screen when I Google'd "Heartland Institute."

I'll appreciate it if you try again.

Joe

Joseph Bast

Chief Executive Officer

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Web site http://www.heartland.org

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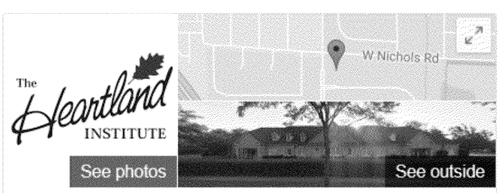
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Key people: President and CEO: Joseph L. Bast; ...

Heartland Institute - SourceWatch
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View all Google reviews

Feedback

From: Joseph Bast
Sent: Tue 11/14/2017 6:40:39 PM
Subject: Can you post a one-sentence review of Heartland on Google?

Friends,

I just Google'd "Heartland Institute" and noticed a section titled "reviews" under our contact information. 20 reviews, nearly all of them giving us a 1 on a scale of 1 to 5 written by alleged teachers pretending to be upset about our work on climate change. It looks like it is easy to add a review... can you spend just a minute right now and do this? Thanks in advance...

Joe

Joseph Bast

Chief Executive Officer

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From: Joseph Bast
Sent: Tue 11/14/2017 2:27:31 PM
Subject: Heartland's America First Energy Plan covered by Buzzfeed

We were a "motley crowd"!

Joe

https://www.buzzfeed.com/zahrahirji/these-climate-skeptics-have-the-trump-administrations-ear?utm_term=.wy3ybMk5Mq#.laMevnKDnz

Buzzfeed

November 13, 2017

These Climate Skeptics Have The Trump Administration's Ear. Here's Their Wishlist.

Several federal officials attended an energy conference hosted by the conservative Heartland Institute. The group of climate skeptics is celebrating Trump's environmental rollbacks and aiming for even bigger policy changes.

Zahra Hirji

BuzzFeed News Reporter

HOUSTON — A controversial free-market think tank, after years on the political fringe, has found an audience in the Trump administration.

At an energy meeting of the Heartland Institute last week, some of the nation's most vocal climate deniers gushed about the Trump administration's rapid rollback of environmental and climate rules and set their sights on a far more ambitious plan: gutting the policy that allows the EPA to treat carbon as an air pollutant.

The America First Energy Conference drew several federal officials. The Interior Department's counselor for energy policy, Vincent DeVito, gave a keynote over dinner; Richard Westerdale II, a senior energy adviser at the State Department, was a panelist; and Scott Pruitt, head of the Environmental Protection Agency, addressed attendees in a pre-taped video.

The meeting's mostly celebratory panels focused on climate myths, fossil fuels, and the dramatic shift in environmental policy under Trump: his announcement to withdraw from the Paris climate agreement, the proposed repeal of pollution rules for power plants, and EPA's overhaul of its science advisory boards.

"I can assure you none of us feel like we wasted our time," David Stevenson, a member of Trump's EPA transition team, said on the "Reforming EPA" panel.

"It's like Christmas with all the things that have happened in the last year and all the things that are going to happen next year," he said.

Other speakers strategized a lofty goal for the rest of the Trump presidency: reversing an EPA declaration known as the "endangerment finding." Under the Obama administration, the agency concluded that climate change poses a danger to public health. It's the foundation of the agency's authority to regulate carbon emissions as an air pollutant, and has been backed up by the Supreme Court.

To many legal experts, the endangerment finding is untouchable, or close to it. "I would be hard-pressed to guess at or articulate a theory whereby the Supreme Court would take the position that this wasn't already decided as a final matter," Joseph Goffman, executive director of Harvard's Environmental Law Program and a former EPA official, told BuzzFeed News.

The conference participants, too, recognized that gutting the policy would be tough. But under Trump, they see an opportunity that might not come around again, and are gearing up for a legal battle.

"If you have a compliant and helpful administration, I think you can just tear it down," said David Schnare, another panelist who served on the Trump transition team. "If you've got an administration that does not want to go down that road, I think it's very much like a marathon."

Although the Heartland Institute has held many conferences questioning the scientific consensus on man-made climate change, this was its first to focus on energy more broadly, with the agenda designed specifically around Trump's America First energy plan, according to spokesperson Jim Lakely.

The motley crowd of about 220 people included academics, a couple dozen Republican state lawmakers, free-market supporters, federal energy officials, and executives from small energy companies. Big Oil was notably absent. (In fact, it was still a sore spot at this conference that some corporate donors, including ExxonMobil, walked away from Heartland between 2007 and 2012.)

The keynote speeches and about half of the 12 sessions dealt with energy, mostly about removing regulatory red tape to produce more coal, gas, and oil. "The war on American energy is completely over," said DeVito, who joined the Interior Department to help coordinate its energy portfolio in May. He boasted there's been an increase in coal mining and new land has opened up to oil and gas drilling under Trump.

The other sessions, however, centered around climate denial or reducing environmental protections, and most participants openly questioned whether man-made climate change was real.

Sometimes it was an odd mix. On the "Energy and National Security" panel, former NASA engineer Hal Doiron and former Navy admiral Thomas Hayward talked about "climate alarmists" being a national security threat. They shared a stage with Westerdale, a top energy official at the State Department who outlined the Trump administration's plan to become "energy dominant," such as expanding US energy exports and related technologies. But he did not mention climate change.

Pruitt, who while head of the EPA has repeatedly questioned the link between human activity and global warming, also didn't mention it in his video address. "So I want to say to you at the Heartland Institute, thanks for what you are doing to advance energy," Pruitt said. "Thank you for what you are doing to advance natural resources. We've been blessed immensely as a country to whom much is given, much is acquired."

But Pruitt's team, according to Lakely, has reached out to the Heartland Institute for a list of scientists and policy experts who are skeptical of catastrophic man-made global warming. Some of those names ended up on the list of the agency's new science advisers released earlier this month.

"Stanley Young was one of the people — we told the agency he was good on the ideas," Lakely said, and now the North Carolina statistician is on the board advising Pruitt on science policy.

Another new EPA adviser, Robert Phalen of the University of California, Irvine, was also at the meeting. Both Young and Phalen have argued that pollution standards for small particulates in the air (called PM2.5) are too restrictive.

Referring to these two new appointments, Steve Milloy, a third EPA transition team member, said to the crowd: "We are making progress."

The attendees had differing priorities for the Trump administration. Some advocated abolishing the EPA, as Trump once suggested on the campaign trail. Others just wanted it slimmed down. Other suggestions included redoing the EPA's valuation for a human life, rolling back standards for small particulates and ozone, and updating the cost-benefit analysis of new regulations to include job impacts.

The most urgent goal, though, seemed to be eliminating the endangerment finding.

"The endangerment finding will hamstring the full exploitation of fossil fuels," Harry MacDougald said at the "Endangerment Finding" session. He was part of the legal team that unsuccessfully challenged the finding at the DC Circuit Court in 2012, and then failed to convince the Supreme Court to take up the case in 2013.

Speaking about the Trump administration, he added, "they don't understand how strong it is. We are doing our best to help [Pruitt] understand."

Last month, EPA head Pruitt told Bloomberg that any review of the endangerment finding would take time, and did not mention any immediate plans to do so.

MacDougald encouraged audience members to write their own petition to the EPA to undo the policy, or write letters in support of existing petitions: On January 20, the Concerned Household Electricity Consumers Council petitioned the agency to reconsider the finding, arguing its underlying science is wrong. MacDougald helped write the submission. About a month later, two other groups filed a similar petition. A third petition, one challenging the legal rather than scientific basis of the finding, was filed in May by an Austin-based conservative think tank, the Texas Public Policy Foundation.

MacDougald noted that Kathleen Hartnett White, Trump's pick to run the Council on Environmental Quality, comes from the Texas Public Policy Forum. "If you are trying to pick the winner in this horse race, you might want to put your money on them."

If petitions don't work, the panelists said, there's also a plan to sue. "We're going to do that," Schnare said. "I think we're going to look at specific farmers — large farmers — who are harmed by reductions in CO2." Schnare didn't explain exactly how farmers were being harmed, but the idea that carbon dioxide helps plants grow was a popular talking point at the conference.

Joe

Joseph Bast

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From: Joseph Bast
Sent: Mon 11/13/2017 3:27:30 PM
Subject: Just one more: Heartland's America First Energy Conference in PBS Frontline

https://www.pbs.org/wgbh/frontline/article/amid-u-n-climate-talks-trump-officials-attend-event-hosted-by-skeptics/

PBS Frontline

November 10, 2017

Amid U.N. Climate Talks, Trump Officials Attend Event Hosted By Skeptics

by Katie Worth

BONN, Germany — As global leaders gathered here at the annual United Nations climate talks Thursday, several senior Trump administration energy and environment officials were thousands of miles away participating in a much different kind of conference: One hosted by climate change skeptics.

While the focus in Bonn is on combating climate change, at the America First Energy Conference in Houston, hosted by the libertarian Heartland Institute, the talk was about fossil fuels and how – as one of the event's panels asserted – "human activity … is not causing a climate crisis."

Environmental Protection Agency Administrator Scott Pruitt, who is not expected to go to Bonn, appeared at the conference with a welcome video to the attendees and speakers – many of whom were from groups like Heartland that reject the scientific consensus on climate change.

"There's great optimism across the country, and I hope you're feeling that in Houston, Texas," Pruitt said in the video. "God speed in what you're doing."

Under Pruitt, the EPA has moved to roll back regulations related to climate change, notably the Obama administration's signature domestic effort to limit carbon emissions, the Clean Power

Plan.

The Heartland event included discussions on energy and national security; the future of coal; the costs of excessive regulations; and the benefits to health, agriculture and the environment of ending the "war on fossil fuels."

Heartland spokesman Jim Lakely called the timing of the two conferences "a happy coincidence." He said Heartland has been impressed with President Donald Trump's energy policy and conceived of the conference as a forum to discuss its progress. Heartland has sought to promote a more skeptical view on climate change, arguing that the near-unanimous consensus among scientists that humans are changing the climate is incorrect. Earlier this year, it mailed climate change skeptical materials to hundreds of thousands of science teachers across the country.

At the Houston conference, the keynote speaker was Vincent DeVito, a senior official at the Department of Interior involved in shaping policy around energy development on public lands. Richard Westerdale, a senior energy adviser for the State Department who worked at ExxonMobil for two decades, spoke on a panel on energy and national security. Also at the conference was Myron Ebell, who led Trump's transition team for the EPA and has frequently rejected the threat of climate change.

In his keynote, DeVito said the Trump administration is moving as quickly as possible to open up the Interior Department's lands to fossil fuel extraction, which he said would generate billions of dollars a year for the government.

"The war on American energy is completely over," said DeVito of the Trump era in his keynote address. "We are becoming the strongest energy superpower that the world has ever known."

Meanwhile, at the U.N.'s COP23 conference in Bonn, the United States has taken a backseat to ongoing international negotiations that address global warming. Notably, it became the sole U.N. party to reject the Paris Agreement, the historic 2015 climate accord, after both Nicaragua and Syria signed onto the agreement in recent weeks. In June, Trump vowed to withdraw from the Paris Agreement, calling it "draconian" and arguing it was not made on good terms for American taxpayers. A full U.S. withdrawal from the Paris Agreement would take a few years.

As in years past, the U.S. is being represented here by a State Department-led delegation, including some members that were involved in creating the Paris Agreement. This year's negotiations are focused on teasing out the rules that will govern the climate accord.

In previous years the U.S. has hosted a large pavilion and dozens of events showing off U.S. efforts to curb carbon emissions. This year, the U.S. declined to host a pavilion and has organized just one event: A panel on how to make fossil fuels and nuclear power cleaner and more efficient.

This has inspired sneers from participants in the Bonn talks, many of whom believe keeping fossil fuels in the ground is the best way to stave off global warming's most catastrophic

consequences. Just last week, 13 federal agencies released a report saying that evidence of the human role in global warming is stronger than ever. The Trump administration did not stand in the way of the report's release, as critics had feared, but downplayed its findings.

Sen. Sheldon Whitehouse (D-R.I.), who is in Bonn, said the timing of the Heartland conference was meant to confuse the public on the issue of climate change during the U.N. conference.

"Trump is a dream come true for the climate denial operation, which has always craved legitimacy," Whitehouse said. "Trump being willing to send government officials to one of these phony-baloney things is really regrettable because there's no science behind it."

This story was produced as part of a collaboration between FRONTLINE and The GroundTruth Project.

Joe

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computer.

From: Joseph Bast
Sent: Mon 11/13/2017 3:21:11 PM
Subject: Heartland's America First Energy Conference in Courthouse News

https://www.courthousenews.com/right-wing-groups-accuse-epa-using-junk-science/

Courthouse News

November 13, 2017

Right-Wing Groups Accuse EPA of Using 'Junk Science'

November 13, 2017 CAMERON LANGFORD

HOUSTON (CN) – The U.S. Environmental Protection Agency "was always junk science-fueled" and the government should get "out of science," so arctic drilling and a revived coal industry can boost the economy, speakers said at a fossil fuels conference in Houston sponsored by right-wing groups whose work was praised by EPA Administrator Scott Pruitt.

The Heartland Institute advocates for decreased government regulation and has been described as the leading U.S. organization pushing climate-change skepticism. The Illinois-based institute hired former Kansas congressman and Tea Party Caucus Chairman Tim Huelskamp as its president in July.

Several conservative groups and political action committees cosponsored the conference, including The Heritage Foundation, the Americans for Prosperity Foundation and the Ayn Rand Institute. David Koch, a top executive at the energy and commodities conglomerate Koch Industries, founded Americans for Prosperity.

To celebrate the first anniversary of Trump's election, The Heartland Institute held an America

First Energy Conference on Thursday at a Houston hotel, where Pruitt praised its work in a taped message.

Since taking over the EPA in February, Pruitt has rolled back President Barack Obama's Clean Power Plan to reduce carbon dioxide emissions from power plants, and withdrawn the Waters of the United States rule, claiming it puts too many bodies of water, even dry creek beds, under federal jurisdiction.

"The attitude before we arrived said that you can't be about growth and jobs and also be a good steward of the environment," Pruitt said via video. "That's inaccurate. That's a false narrative.

"I want to say to you at The Heartland Institute, thanks for what you are doing to advance energy. Thank you for what you're doing to advance natural resources. We've been blessed immensely as a country."

Several panels focused on how the EPA is changing under Trump and Pruitt, and multiple panelists criticized the agency's history in the pre-Trump era.

"The EPA was always junk science-fueled," said Steve Milloy, founder of JunkScience.com and author of "Scare Pollution: Why and How to Fix the EPA," during a "Reforming EPA" panel.

"We need to get government out of science, especially in the EPA," he said.

Milloy claimed the Obama administration paid climate scientists to doctor data to bolster the narrative that fossil fuels contribute to global warming.

Panelists said they want to undo the Endangerment Finding, an official proclamation from the EPA in 2009 that says greenhouse gases are driving global warming.

Milloy's prescription for the agency is simple: "We want to shrink the EPA," he said.

One panelist likened Trump's industry-friendly stance on climate change to a holiday.

"We had a door opened, and it was opened when Trump was elected president. … It's like Christmas," said David Stevenson, director of the Center for Energy Competitiveness at the Caesar Rodney Institute and a member of Trump's EPA transition team.

For The Heartland Institute, the consensus among world scientists that burning fossil fuels and their release of carbon dioxide is heating the planet and increasing the frequency and intensity of natural disasters is blasphemy. They say carbon dioxide is good for the Earth.

"Carbon dioxide is vital plant food," said Paul Driessen, senior fellow at the nonprofit institutes the Committee for a Constructive Tomorrow and the Center for the Defense of Free Enterprise.

Driessen called carbon dioxide "the miracle molecule that makes life on Earth possible. Rising atmospheric CO2 levels are actually greening our planet by spurring crop, forest and grassland

plants to grow faster and better for the past three decades," Driessen said.

"Plant experts say that some 70 percent of that greening is due to higher levels of atmospheric carbon dioxide and that too is an enormous dividend worth countless billions and maybe even trillions of dollars."

But authors of the "Greening of the Earth" study, published in the journal Nature Climate Change in April 2016, which Driessen cited, found that while carbon dioxide does contribute to greenery, the long-term impacts could be limited.

"Studies have shown that plants acclimatize, or adjust, to rising carbon dioxide concentration and the fertilization effect diminishes over time," co-author Dr. Philippe Ciais, associate director of the Laboratory of Climate and Environmental Sciences in France, said in an interview with NASA.

But Heartland panelist John Dunn, a retired physician and licensed attorney, said he shares Driessen's optimism for a world with abundant carbon dioxide.

"I would rather be in a warm place than a cold place," Dunn said.

The United States gets about one-third of its electricity from coal and one-third from natural gas. The rest comes from nuclear plants and wind and solar power, according to conference panelists.

Many scoffed at the idea that wind and solar power will soon become the dominant forms of energy production in the United States.

"The environmentalists have this dream of everything running by solar power and wind, and we know that's not going to happen," said Richard Trzupek, a chemist and consultant for an Illinois engineering firm.

He said the U.S. Energy Information Administration did a study under the Obama administration that predicted the percentage of energy the country will get from wind and solar will increase to just 17 percent by 2040.

"I think it shows that the real choices we are going to be making here are between coal and nuclear and natural gas," he said.

Louisiana Attorney General Jeff Landry, a Republican and Tea Party member, said in a high-energy speech that growing up in Louisiana, where 80,000 jobs are directly tied to the energy industry, he came to appreciate that oil and gas drilling has built the middle class better than any industry in the United States.

Landry represented Louisiana in the U.S. House of Representatives from 2011 to 2013.

Louisiana loses about a football field of coastal land every 100 minutes to erosion caused by canals and pipelines installed for oil and gas extraction, according to a recent study by the U.S.

Geological Survey. The study wasn't mentioned at the conference.

Heartland Institute research fellow Isaac Orr said that hydraulic fracturing and horizontal drilling, which let drillers extract oil and gas from shale, caused oil prices to drop from more than $100 a barrel in 2013 to around $55 today.

"Rising oil and gas production in the United States has created 1.7 million jobs in the U.S. And low energy prices have saved consumers millions of dollars. And it's also given us a really good competitive advantage when it comes to manufacturing," Orr said.

"The average family has saved about $675 per year in gasoline compared to 2013 prices. That's ginormous. Low natural gas prices have saved anywhere between $181 to $432 per person [on power bills], depending on the geographical area of the country you're living in," Orr said.

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From: Joseph Bast
Sent: Mon 9/11/2017 4:52:34 PM
Subject: Hillary says the climate change issue cost her the election

Friends,

A lot of people even on "our side" of the climate issue think global warming wasn't a major issue in the 2016 election, that polls and focus groups showed voters didn't put a lot of weight on it, that both major parties only played to their base by talking about it. I strongly disagree, and so does Hillary Clinton:

https://www.businessinsider.com.au/hillary-clinton-biggest-campaign-mistake-2017-9

It's global warming, not health care or taxes or even jobs, that generates the most standing ovations and loudest applause when Trump speaks at his rallies and when Heartland spokespersons give talks around the country. It's a pocketbook issue more than any other, it demonstrates how progressive elites lie and pretend to have knowledge that the average guy doesn't have or can't understand, and it shows in vivid color how those same elites are willing to sell out the working man and the middle class in pursuit of a socialist and (yes) globalist delusion. It gave a million voters who had given up on politics a reason to vote this time.

Hillary half-gets it… she realizes her admission that her green policies would "put a lot of coal miners and coal companies out of business" sunk her campaign, but she seems to think that if only she had phrased it a bit differently, her anti-coal position would not have killed her campaign. I don't think so. The public figured this out despite the media's attempted blockade and censorship of groups like Heartland.

If not for the global warming scam, Hillary would not have been campaigning on replacing coal and Trump would not have had coal miners joining him on the stage at many rallies. Global warming truly did kill her campaign in all the key states that Trump had to win.

Or so says I.

Joe

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From: Joseph Bast
Sent: Sat 9/9/2017 6:55:51 PM
Subject: RE: Christine Todd Whitman on consensus, EPA, and Red Team

Friends,

It appears I accidentally put my "GW Posse" list on the "to" line of the message below, rather than on the blind copy line. Please do not hit reply all. Please delete the list from the "to" line if you choose to forward my message to anyone else. Please delete it from your "inbox."

Sorry in advance for the invasion of privacy this may cause.

Joe

From: William Happer [mailto:happer@Princeton.EDU]
Sent: Saturday, September 09, 2017 1:29 PM
To: Joseph Bast
Subject: RE: Christine Todd Whitman on consensus, EPA, and Red Team

Me too!

Will

From: Joseph Bast [mailto:JBast@heartland.org]
Sent: Saturday, September 09, 2017 2:24 PM
To

Subject: Christine Todd Whitman on consensus, EPA, and Red Team

This makes me want to throw up…

https://www.nytimes.com/2017/09/08/opinion/how-not-to-run-the-epa.html?action=click&pgtype=Homepage&clickSource=story-heading&module=opinion-c-col-left-region&region=opinion-c-col-left-region&WT.nav=opinion-c-col-left-region

I've got a long list of policy studies and other publications Heartland needs to release before I leave at the end of the year, I don't have time to reply to this, but one of us should, explicitly rebutting four or five of her points. Amazing she didn't worry about how EPA was being run until Pruitt was appointed… really, eight years of Obama were all just fine? She's a dinosaur.

Joe

To: Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

From: Joseph Bast
Sent: Sat 9/9/2017 6:24:27 PM
Subject: Christine Todd Whitman on consensus, EPA, and Red Team

This makes me want to throw up…

https://www.nytimes.com/2017/09/08/opinion/how-not-to-run-the-epa.html?action=click&pgtype=Homepage&clickSource=story-heading&module=opinion-c-col-left-region&region=opinion-c-col-left-region&WT.nav=opinion-c-col-left-region

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Joe

From: Joseph Bast
Sent: Sat 9/9/2017 5:33:45 PM
Subject: TheHill.com: Trump stacks administration with climate change skeptics

See:

http://thehill.com/policy/energy-environment/349877-climate-skeptics-on-the-rise-in-trumps-epa

Heartland's Sterling Burnett is quoted at the end of this article… note the cow-stupid references to "climate science," he really has no idea what the phrase means:

Trump's approach to climate change research has emboldened those who have waged years-long campaigns against the scientific consensus.

"People who were fighting it for a long time, they saw in Trump, for the first time in a long time, a real ally," said Sterling Burnett, a researcher at the Heartland Institute, a think tank that questions climate science. [sic]

The group was an early backer of the "red team, blue team" exercise Pruitt has pitched for climate science. [sic] Burnett said he hopes such a review leads Trump to target other climate-related activities, including the U.S.'s involvement in international climate treaties and the federal finding that greenhouse gases harm public health and need to be regulated.

Trump, he said, focuses on "what he called 'Make America Great Again:' building jobs, energy dominance ... and he recognizes you can't do that if you're doing what Obama did on climate change."

Joe

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From: Joseph Bast
Sent: Sat 9/9/2017 5:15:58 PM
Subject: List of Candidates for the Clean Air Scientific Advisory Committee posted

Friends,

Steve Milloy alerted me to this… EPA has announced 43 candidates for its Clean Air Scientific Advisory Committee and is accepting comments on them until September 18: Here is part of the notice:

The SAB Staff Office received nominations for the attached 43 candidates based on their expertise and willingness to serve. We hereby invite public comments on the attached List of Candidates under consideration for appointment to the CASAC. Comments should be submitted to Mr. Aaron Yeow, Designated Federal Officer, at yeow.aaron@epa.gov no later than **September 18, 2017**. E-mail is the preferred mode of receipt. Please be advised that public comments are subject to release under the Freedom of Information Act.

The notice of comment period and bios of candidates are here:

https://junkscience.com/wp-content/uploads/2017/08/CASAC-2017-List-of-Candidates.pdf

Steve Milloy recommends only three candidates, and I heartily concur:

Tony Cox

Robert F. Phalen

Stan Young

You may notice they are also among the good guys who applied for positions on the Science Advisory Board. You can read Steve's post about the good and bad nominees here:

https://junkscience.com/2017/09/action-alert-recommendations-for-epas-clean-air-scientific-advisory-committee/

Joe

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From: Joseph Bast
Sent: Sat 9/9/2017 4:03:36 PM
Subject: List of Candidates for the EPA Science Advisory Board posted

Friends,

EPA has posted a list and bios of 132 candidates for EPA Science Advisory Boards here:

https://yosemite.epa.gov/sab/sabproduct.nsf//LookupWebProjectsRequestsforCommentsBOARD/09E

The message sent from EPA to candidates for positions is below. It reads in part,

The SAB Staff Office identified 132 candidates based on their expertise and willingness to serve. We hereby invite public comments on the attached List of Candidates under consideration for appointment to the SAB. Comments should be submitted by email to Mr. Thomas Carpenter, Designated Federal Officer no later than September 28, 2017, at carpenter.thomas@epa.gov. Please be advised that public comments are subject to release under the Freedom of Information Act.

I recognize the following names on the list and think they would be good people to serve on the advisory board:

Richard Belzer

Edwin Berry

Alan Carlin

Anthony Cox

Joseph D'Aleo

Kevin Dayaranta

Paul Dreissen

James Enstrom

Gordon Fulks

John Graham

Michael Honeycutt

Craig Idso

Richard Keen

David Legates

Anthony Lupo

Robert Phalen

Anne Smith

Richard Smith

David Stevenson

H. Leighton Steward

Donald van der Vaart

Stan Young

If you take time to read their bios, I think you will agree this is a magnificent list. Please thank them all for applying. There may be others who I don't recognize on the list, but judging by their bios and the results of some Googling, I don't think so.

Please consider submitting comments to Thomas Carpenter, Designated Federal Officer no later than September 28, 2017, at carpenter.thomas@epa.gov.

As usual, you should keep your comments brief and as factual as possible. I think something as simple as "Mr. Smith's bio and writings show bias and conflicts of interest likely to mean he opposes Administrator Pruitt's announced intentions to depoliticize and make more transparent the science behind EPA's regulatory actions."

Joe

---------- Forwarded message ----------
From: **Carpenter, Thomas** <Carpenter.Thomas@epa.gov>
Date: Thu, Sep 7, 2017 at 6:10 PM
Subject: List of Candidates for the EPA Science Advisory Board posted
To:
Cc: "Carpenter, Thomas" <Carpenter.Thomas@epa.gov>

Email to Candidates for the chartered SAB

Dear Colleague,

The Invitation for Public Comment on the List of Candidates for the EPA Chartered Science Advisory Board was posted this afternoon. The SAB Staff Office requested "comments to be submitted by email to Mr. Thomas Carpenter, Designated Federal Officer no later than September 28, 2017, at carpenter.thomas@epa.gov ."

The biosketches are available at:

https://yosemite.epa.gov/sab/sabproduct.nsf//LookupWebProjectsRequestsforCommentsBOARD/09E

Regards

Tom

Thomas Carpenter

Designated Federal Officer / Sr. Biologist

US EPA Science Advisory Board, MC 1400R

1200 Pennsylvania Avenue, NW

Washington DC 20460

ph 202 564 4885 Fax 202 565 2098

From: Joseph Bast
Sent: Mon 3/26/2018 8:05:46 PM
Subject: Tom Harris: "CARBON DIOXIDE IS MOSTLY OXYGEN, PEOPLE: Deceptive Language Ruins Earth Hour," my piece in The Daily Caller

Very entertaining piece.

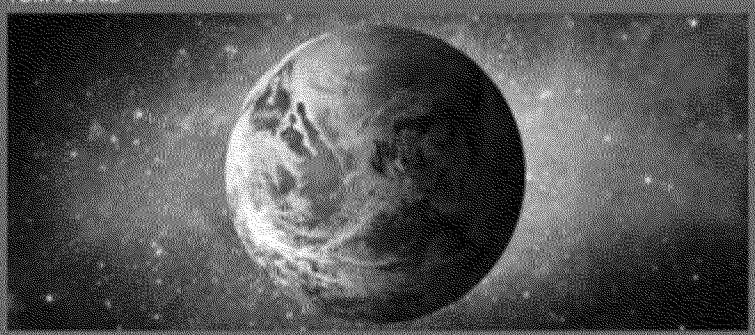
http://dailycaller.com/2018/03/23/deceptive-language-ruins-earth-hour/.

Joe

OPINION

CARBON DIOXIDE IS MOSTLY OXYGEN, PEOPLE: Deceptive Language Ruins Earth Hour

TOM HARRIS



Do we call water "hydrogen" and, if not, why not?

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EDUCATION | ERIC OWENS

CARBON DIOXIDE IS MOSTLY OXYGEN, PEOPLE: Deceptive Language Ruins Earth Hour



TOM HARRIS
Executive Director, Climate Science Coalition

5:20 PM 03/23/2018

With Earth Hour being held around the world between 8:30 and 9:30 pm local time on Saturday, we are going to hear a lot about reducing "carbon pollution," "carbon emissions," and our supposed "carbon footprint."

But this makes no sense.

Carbon is a solid, naturally occurring, non-toxic element found in all living things. It forms thousands of compounds, much more than any other element. Medicines, trees, oil, and even our bodies are made of carbon compounds.

Pure carbon occurs in nature mainly in the forms of graphite and diamond. So, what is the "carbon pollution" environmentalists are concerned about? Are they speaking about soot emissions reduction? Amorphous carbon, carbon without structure, is the main ingredient in soot, which is a pollutant important to control. Power plants have already done a good job reducing soot, as they have with other pollutants.

No, activists are crusading against emissions of one specific compound of carbon, namely carbon dioxide (CO_2). Ignoring the oxygen atoms and calling CO_2 "carbon" makes about as much sense as ignoring the oxygen in water (H_2O) and calling it "hydrogen."

Calling CO_2 "carbon," or worse, "carbon pollution," encourages people to think of it as something dirty and so important to restrict. Calling CO_2 by its proper name would help the public remember that, regardless of its role in climate change (a point of intense debate among scientists), CO_2 is really an invisible gas essential to plant photosynthesis, and so to all life.

Climate change campaigners do not seem to understand that commercial greenhouse operators routinely run their internal atmospheres at up to 1,500 parts per million (ppm) CO_2 concentration for a good reason. Plants inside grow far more efficiently than at the 400 ppm in the outside atmosphere. Yet there is

no hint of any consequent temperature rise.

Climate Change Reconsidered II: Biological Impacts, a report from the Nongovernmental International Panel on Climate Change, cites over 1,000 peer-reviewed studies that document rising productivity of forests and grasslands as CO_2 levels have increased, not just in recent decades, but in past centuries.

And increasing CO_2 levels pose no direct hazard to human health. CO_2 concentrations in submarines can reach levels above 10,000 ppm, 25 times current atmospheric levels, with no harmful effects on the crew.

Politically correct but deceptive language is dangerous because it dumbs down important science debates and inappropriately influences millions of people, and ultimately, government policy. People educated in the sciences must complain loudly whenever they hear such mistakes.

We are actually near the lowest level of CO_2 in Earth's history. About 440-million years ago, CO_2 was over 1000 percent of today's level while Earth was in one of the coldest periods in the record. This is just one of many findings that indicate that the climate models' assumption that temperature is driven by CO_2 is wrong.

Activists say that there will be important pollution reduction co-benefits to CO_2 emission control. Yet US Environmental Protection Agency data show that total emissions of six major air pollutants dropped 62 percent since 1980 even though CO_2 emissions increased by 14 percent. Using climate regulations to reduce pollution would obviously be an expensive mistake.

While some commentators promote using as much energy as possible during Earth Hour to demonstrate opposition to the event, a better approach might be to change its name to 'Energy Hour' and encourage citizens to minimize their energy use for an hour to give them a sense of what societies without adequate power are actually like. This could increase public pressure on politicians to ensure that reliable power generation from proven energy sources — coal, oil, natural gas, nuclear, and hydro — will be available for years to come.

Tom Harris is executive director of the Ottawa, Canada-based International Climate Science Coalition.

From: Joseph Bast
Sent: Sun 3/25/2018 3:41:31 PM
Subject: Professor Will Happer: Would Einstein be a global warming skeptic if alive today?

"Albert Einstein would almost certainly have been a global warming skeptic if he were alive today. Many distinguished, contemporary scientists are skeptics too."

William Happer, Ph.D.

http://www.southcoasttoday.com/opinion/20180323/would-einstein-be-global-warming-skeptic-if-alive-today/1

From: Joseph Bast
Sent: Sun 3/25/2018 3:22:16 PM
Subject: HuffPost gets the "climate science tutorial" story wrong... what's new?

https://www.huffingtonpost.com/entry/climate-change-trial-california_us_5ab53d0ce4b054d118e2a0d9

Heartland and other conservative think tanks "outlived their usefulness to the fossil fuel industry" by 2006, and they dumped us then. So we ramped up our efforts relying almost entirely on non-industry funding. The oil industry will pursue its defense without refuting the left's pseudoscience, except to say "even IPCC admitted lots of uncertainty until as recently as 2013." That strategy is apparently enough to win a legal case but is bad science and bad for the country. We've convinced the president of the United States and nearly all members of his cabinet and all Republican members of Congress that the IPCC is unreliable, that the war on fossil fuels should end, and they are moving as fast as they can to undo the Obama climate legacy. Who's winning now?

Joe

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From: Joseph Bast
Sent: Sun 3/25/2018 12:13:10 AM
Subject: FW: Wow someone by the name Jaymam counted Myles CO2, N2 and O2 molecules pictures and see what he found

A detailed and sophisticated critique of the plaintiffs' science presented at the San Francisco "climate science tutorial":

Sophistry In San Francisco; Half-Truths are Twice the Lie
https://co2islife.wordpress.com/2018/03/24/sophistry-in-san-francisco-half-truths-are-twice-the-lie/

Joe

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To: Konkus, John[konkus.john@epa.gov]
Cc: Keely Drukala[KDrukala@heartland.org]; Taylor, Brian[Taylor.Brian@epa.gov]; Slotkin, Ron[slotkin.ron@epa.gov]
From: John Nothdurft
Sent: Wed 11/8/2017 7:58:18 PM
Subject: Re: Heartland Video

John,
Yes, we have the video and it is great! Thank you again.

Is it okay for us to post it and promote it publicly as well?

Thanks

Respectfully,

John Nothdurft
Director of Government Relations
The Heartland Institute

Sent from my iPhone

On Nov 8, 2017, at 1:45 PM, Konkus, John <konkus.john@epa.gov> wrote:

> Did this get straightened out? Thanks.
>
> **From:** Keely Drukala [mailto:KDrukala@heartland.org]
> **Sent:** Tuesday, November 7, 2017 2:28 PM
> **To:** Taylor, Brian <Taylor.Brian@epa.gov>
> **Cc:** John Nothdurft <JNothdurft@heartland.org>; Konkus, John <konkus.john@epa.gov>; Slotkin, Ron <slotkin.ron@epa.gov>
> **Subject:** Re: Heartland Video
>
> Hi Brian,
>
> I tried to download the file, but it say Is don't have access. Can you please make sure that I (kdruakla@heartland.org) has access? I believe I sent a request through the dropbox app.

Thank you,

Keely

On Nov 7, 2017, at 9:14 AM, Taylor, Brian <Taylor.Brian@epa.gov> wrote:

Keely,

Here's the Dropbox link to Administrator Pruitt's video message:

https://www.dropbox.com/scl/fi/u3oztciv6xtudbo5qyp9a/2017-11-06_VM_AdminPruitt_HeartlandInst.mp4?dl=0&oref=e&r=AAgnorrC-xChJ0IoJqjvCzCFLarDISS0mNErGnAZoFQD5jDjuF36l62Q1sdFlh8FIWT_fYm1RG7PCtk7c35fm_n1gkFHf

If you have any issue with downloading call me on

202-564-3211.

From: Keely Drukala [mailto:KDrukala@heartland.org]
Sent: Monday, November 06, 2017 4:25 PM
To: John Nothdurft <JNothdurft@heartland.org>
Cc: Konkus, John <konkus.john@epa.gov>; Taylor, Brian <Taylor.Brian@epa.gov>; Slotkin, Ron <slotkin.ron@epa.gov>
Subject: Re: Heartland Video

John,

I can receive the video in whatever way is easiest for you. In the past, we've used Dropbox, email [Ex. 6 - Personal Privacy] — Heartland servers don't accept large files) or what ever service is easiest for you.

Feel free to call my cell phone if you have any problems 312-282-1390.

Thanks,

Keely

On Nov 6, 2017, at 3:10 PM, John Nothdurft <JNothdurft@heartland.org> wrote:

John,

Thanks again for your help with this! I have copied Keely Drukala, our AV person to let you know how we would like to receive the file.

I will follow up and let you know when we plan on showing the video to the audience, etc.

Respectfully,

John Nothdurft

The Heartland Institute

Cell: 662-801-2707

From: Konkus, John [mailto:konkus.john@epa.gov]
Sent: Monday, November 06, 2017 3:05 PM
To: John Nothdurft
Cc: Taylor, Brian; Slotkin, Ron
Subject: Heartland Video

John: Brian and Ron with EPA's office of multimedia will have the edited video ready, likely tomorrow morning. Please let them know how you would like them to send you the file.

Thank you!

John Konkus

Environmental Protection Agency

Deputy Associate Administrator for Public Affairs

Mobile: Ex. 6 - Personal Privacy

To: Konkus, John[konkus.john@epa.gov]
From: John Nothdurft
Sent: Wed 11/8/2017 7:45:36 PM
Subject: Automatic reply: Heartland Video

I will be out of the office until Monday, November 10, 2017. I will be checking emails, but it may take me longer than normal to respond.

From: Joseph Bast
Sent: Mon 11/6/2017 9:25:06 PM
Subject: Pruitt records Video for our energy conference, and more

Friends,

Heartland staff are about to head for Houston for three conferences in two days. See some good news below from John Nothdurft, our government relations director, regarding our America First Energy Conference. 250 people signed up, and more planning to show up at the door... Not bad for Heartland's first energy conference, and the first conference ever on President Trump's energy plan.

Joe

From: John Nothdurft
Sent: Monday, November 06, 2017 3:13 PM
To: Tim Huelskamp; Joseph Bast; Jim Lakely
Cc: Keely Drukala; Nikki Comerford
Subject: Videos for AFEC

All,

I just got off the phone with EPA. Administrator Pruitt just finished recording a video for us to use at AFEC.

They said he was really fired up in the video and was happy to do it. We should be receiving it tomorrow morning sometime.

I have also been told we will be getting videos from Sen. Ted Cruz, Sen. Jim Inhofe, and Chairman Lamar Smith.

Respectfully,

John Nothdurft

The Heartland Institute

Director of Government Relations

Ph: 312-377-4000

Cell: 662-801-2707

http://www.heartland.org

Follow me on Twitter

To: Konkus, John[konkus.john@epa.gov]
Cc: Taylor, Brian[Taylor.Brian@epa.gov]; Slotkin, Ron[slotkin.ron@epa.gov]; Keely Drukala[KDrukala@heartland.org]
From: John Nothdurft
Sent: Mon 11/6/2017 9:10:39 PM
Subject: RE: Heartland Video

John,

Thanks again for your help with this! I have copied Keely Drukala, our AV person to let you know how we would like to receive the file.

I will follow up and let you know when we plan on showing the video to the audience, etc.

Respectfully,

John Nothdurft

The Heartland Institute

Cell: 662-801-2707

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Cc: Taylor, Brian; Slotkin, Ron
Subject: Heartland Video

John: Brian and Ron with EPA's office of multimedia will have the edited video ready, likely tomorrow morning. Please let them know how you would like them to send you the file.

Thank you!

John Konkus

Environmental Protection Agency

Deputy Associate Administrator for Public Affairs

Mobile: Ex. 6 - Personal Privacy

From: Joseph Bast
Sent: Sun 11/5/2017 6:52:37 PM
Subject: Tom Harris and Tim Ball at Daily Caller: "An Avalanche Of Global Warming Alarmism Is About To Hit"

http://dailycaller.com/2017/11/03/an-avalanche-of-global-warming-alarmism-is-about-to-hit/

An Avalanche Of Global Warming Alarmism Is About To Hit

TOM HARRIS AND TIM BALL

With the United Nations Climate Change Conference starting on Monday in Bonn, Germany, we need to brace ourselves for an avalanche of global warming alarmism. We'll be told that extreme weather, sea level rise, and shrinking sea ice are all about to get much worse if we do not quickly phase out our use of fossil fuels.

An important data set used by the computer models cited by the IPCC is the 'HadCRUT4' global average temperature history for the past 167 years produced by the Climatic Research Unit at the University of East Anglia, and the Hadley Centre, both based in the United Kingdom.

Until the 1960s, HadCRUT4 temperature data was collected using mercury thermometers located at weather stations situated mostly in the United States, Japan, the UK, and eastern Australia. Most of the rest of the planet had very few temperature sensing stations. And none of the Earth's oceans, which cover 70% of the planet, had more than the occasional station separated from its neighbor by thousands of kilometers.

The data collected at weather stations in this sparse grid had, at best, an accuracy of +/- 0.5 degrees Celsius, often times no better than +/-1 degree. Averaging such poor data in an attempt to determine global conditions cannot yield anything meaningful.

Modern weather station surface temperature data is now collected using precision thermocouples. But, starting in the 1970s, less and less ground surface temperature data was used for plots such as HadCRUT4. This was done initially because governments believed that satellite monitoring could take over from most of the ground surface data collection. But the satellites did not show the warming forecast by computer models. So, bureaucrats closed most of the colder rural surface temperature

sensing stations, thereby yielding the warming desired for political purposes.

Today, there is virtually no data for approximately 85% of the Earth's surface. Indeed, there are fewer weather stations in operation now than there were in 1960.

So, the HadCRUT4 and other surface temperature computations after about 1980 are meaningless. Combining this with the problems with the early data, and the fact that we have almost no long-term data above the surface, the conclusion is unavoidable: *it is not possible to know how the Earth's climate has varied over the past century and a half.* The data is therefore useless for input to the computer models that form the basis of the IPCC's conclusions.

In fact, there is insufficient data *of any kind*—temperature, land and sea ice, glaciers, sea level, extreme weather, ocean pH, etc.—to be able to determine how today's climate differs from the past. So, the IPCC's climate forecasts have no connection with the real world.

This will not stop Bainimarama and other conference leaders from citing the IPCC in support of their warnings of future climate catastrophe. No one should take them seriously.

Dr. Tim Ball is an environmental consultant and former climatology professor at the University of Winnipeg in Manitoba. Tom Harris is executive director of the Ottawa, Canada-based International Climate Science Coalition.

Tom Harris, B. Eng., M. Eng. (Mech.)

Executive Director,

International Climate Science Coalition (ICSC)

P.O. Box 23013

Ottawa, Ontario

K2A 4E2

Canada

www.climatescienceinternational.org

613-728-9200

From: Joseph Bast
Sent: Sun 11/5/2017 2:39:41 PM
Subject: Junkscience.com posts my comments about the Climate Science Special Report

My comments below are also available online at:

https://junkscience.com/2017/11/joe-bast-scientific-critique-of-usgcrps-2017-climate-science-special-report/

Nice ad on this site for the NRDC. Hmm. Sleeping with the enemy, Steve?

Joe

From: Joseph Bast
Sent: Friday, November 03, 2017 1:47 PM
Subject: Climate Science Special Report released

The Climate Science Special Report, "volume one of the Fourth National Climate Assessment," was released a few minutes ago. The entire report can be found here: https://science2017.globalchange.gov

But in August the Trump administration disbanded the interagency committee that was working on the report:

https://www.washingtonpost.com/news/energy-environment/wp/2017/08/20/the-trump-administration-just-disbanded-a-federal-advisory-committee-on-climate-change/?utm_term=.5c0daa1fba41

Not sure why it was nevertheless released... probably the deep state at work. Here were my reactions to this report, from my earlier review of the draft back in August.

Scientific Critique of USGCRP's 2017 Climate Science Special Report

The U.S. Global Change Research Program (USGCRP) is a joint program of 13 U.S. national government agencies charged with developing a program to "understand, assess, predict, and respond to" global climate change. It produces reports to Congress every four years titled "National Climate Assessment." The three reports released to date have all exaggerated the amount of global warming, the human role in that warming, the negative impacts of the same, and the certainty of the science surrounding the causes and consequences of climate change. For example, a team of climate scientists led by Patrick Michaels of the Cato Institute said of the Third National Climate Assessment:

"This National Assessment is much closer to pseudoscience than it is to science. It is as explanatory as Sigmund Freud. It clearly believes that virtually everything in our society is tremendously dependent the surface temperature, and, because of that, we are headed towards certain and inescapable destruction, unless we take its advice and decarbonize our economy, pronto. Unfortunately, the Assessment can't quite tell us how to accomplish that, because no one knows how."

https://object.cato.org/sites/cato.org/files/pubs/pdf/the-missing-science-of-draft-assessment.pdf

The latest (June 28) draft of the Fourth National Climate Assessment is similarly flawed. This brief critique makes ten points which track the content and organization of the assessment:

1. The report is a **legacy product** of a political regime that captured and "weaponized" this government agency to advance its agenda, much as it did to the IRS, Justice Department, and other departments. The report was written by hold-overs from the Obama administration, and represents only the very biased and politicized perspective of a small clique of government scientists on a complex issue.

2. The report **fails to provide an objective and comprehensive review** of the available literature. Contrary to media reports, the report was not made available to respected climate scientists for peer reviewed. Several scientists report that their requests for drafts were rejected. [Soon and Happer, others?] The final draft shows no evidence of being informed by the efforts of critics of the Obama administration's legislative agenda or even a single reference to the multiple reports of the Nongovernmental International Panel on Climate Change (NIPCC).

3. The report **relies on past reports by the United Nation's Intergovernmental International Panel on Climate Change (IPCC)**, which the Trump administration properly rejects. The report refers to the IPCC's 2013 report as "rigorously-reviewed international assessments," when in fact the IPCC is controversial, scandal-ridden, and its procedures fall far short of the requirements of the Data Quality Act. [*Why Scientists Disagree*, pp. 38-44]

4. The report's most frequently quoted conclusion, "that it is *extremely likely* that human

influence has been the dominant cause of the observed warming since the mid-20th century," is **only a restatement of the opinions of activists and advocates in the field of global warming**, and *not* a statement about the underlying science, which remains incomplete and uncertain. This is the same flawed reasoning and semantic games as used by the IPCC to make the same statement. It is not a statement of scientific fact, but rather of "some experts' opinions" without any basis in probability analysis or scientific forecasting. [InterAcademy Council Audit, p. 61ff]

5. The report **denies the existence of the "pause" in global warming** during the past 18 years or longer, something even the IPCC admits. It cites manipulated and unreliable databases when superior databases are readily available, apparently in an effort to once again "hide the decline."

6. The report **ignores at least 27 peer-reviewed articles saying climate sensitivity** is lower than the amount assumed by IPCCC and EPA. Climate sensitivity is the amount of temperature change likely to result from a doubling of the concentration of CO2 in the atmosphere from pre-industrial times. If the climate is less sensitive to CO2 than we thought four years ago, this report ought to reflect that fact. [Cited in Monckton, Soon, Legates, and Briggs 2015; reproduced in *Why Scientists Disagree* pp 66-69]

7. The report **denies extensive evidence that weather is not becoming more extreme** over time and physical evidence explaining why it will be less extreme in a warmer world. It recites Al Gore's litany of extreme weather predictions even though IPCC and independent scholars have thoroughly debunked it. [Chapter 7 of CCR-II: Physical Science]

8. The report repeats **false claims about the loss of arctic sea ice** – falsifying trends and causes and making false forecasts – in order to support its narrative of catastrophic man-made global warming. Artic sea ice is not at historic low levels, it varies naturally due to known and unknown external forcings and internal variability, and it is not evidence of a human impact on climate. [Chapter 5 of CCR II: Physical Science]

9. The report **misrepresents scenarios and computer-based simulations of future climate conditions as *scientific forecasts* of future climate conditions**, when in fact it is well known among scientists that future climates cannot be predicted. Prof. Scott Armstrong, the world's leading authority on scientific forecasting, and coauthors have shown conclusively that the predictions made by the IPCC, EPA, and other government agencies are merely the opinions of some experts, not scientific forecasts, and cannot provide a reliable basis for public policy.

10. The report **misrepresents sea-level rise and changes in ocean pH levels**, portraying both as dire catastrophes resulting from man-made global warming, when in fact there is considerable evidence that sea level has not accelerated from its historic rates and considerable evidence that higher pH levels have positive as well as adverse effects on ocean life. [Chapter 6 of CCR-II: Physical Science]

Joe

Joseph Bast
Chief Executive Officer

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From: Joseph Bast
Sent: Fri 11/3/2017 7:47:58 PM
Subject: WSJ: Koonin, "A deceptive new report on climate"

Steven Koonin calls out a couple of the more flagrant exaggerations in the Climate Science Special Report in today's Wall Street Journal.

Joe

https://www.wsj.com/articles/a-deceptive-new-report-on-climate-1509660882

A Deceptive New Report on Climate

True, the U.S. has had more heat waves in recent years—but no more than a century ago.

By Steven E. Koonin

Nov. 2, 2017 6:14 p.m. ET

425 COMMENTS

The world's response to climate changing under natural and human influences is best founded upon a complete portrayal of the science. The U.S. government's Climate Science Special Report, to be released Friday, does not provide that foundation. Instead, it reinforces alarm with incomplete information and highlights the need for more-rigorous review of climate assessments.

A team of some 30 authors chartered by the U.S. Global Change Research Program began work in spring 2016 on the report, "designed to be an authoritative assessment of the science of climate change." An early draft was released for public comment in January and reviewed by the National Academies this spring. I, together with thousands of other scientists, had the opportunity to scrutinize and discuss the final draft when it was publicized in August by the New York Times . While much is right in the report, it is misleading in more than a few important places.

One notable example of alarm-raising is the description of sea-level rise, one of the greatest climate concerns. The report ominously notes that while global sea level rose an average 0.05 inch a year during most of the 20th century, it has risen at about twice that rate since 1993. But it fails to mention that the rate fluctuated by comparable amounts several times during the 20th century. The same research papers the report cites show that recent rates are statistically indistinguishable from peak rates earlier in the 20th century, when human influences on the climate were much smaller. The report thus misleads by omission.

This isn't the only example of highlighting a recent trend but failing to place it in complete historical context. The report's executive summary declares that U.S. heat waves have become more common since the mid-1960s, although acknowledging the 1930s Dust Bowl as the peak period for extreme heat. Yet buried deep in the report is a figure showing that heat waves are no more frequent today than in 1900. This artifice also appeared in the government's 2014 National Climate Assessment, which emphasized a post-1980 increase in hurricane power without discussing the longer-term record. The National Oceanic and Atmospheric Administration recently stated that it has been unable to detect any human impact on hurricanes.

Such data misrepresentations violate basic scientific norms. In his celebrated 1974 "Cargo Cult" lecture, the late Richard Feynman admonished scientists to discuss objectively all the relevant evidence, even that which does not support the narrative. That's the difference between science and advocacy.

These deficiencies in the new climate report are typical of many others that set the report's tone. Consider the different perception that results from "sea level is rising no more rapidly than it did in 1940" instead of "sea level rise has accelerated in recent decades," or from "heat waves are no more common now than they were in 1900" versus "heat waves have become more frequent since 1960." Both statements in each pair are true, but each alone fails to tell the full story.

Several actions are warranted. First, the report should be amended to describe the history of sea-level rise, heat waves and other trends fully and accurately. Second, the government should convene a "Red/Blue" adversarial review to stress-test the entire report, as I urged in April. Critics argue such an exercise would be superfluous given the conventional review processes, and others have questioned even the minimal time and expense that would be involved. But the report's deficiencies demonstrate why such a review is necessary.

Finally, the institutions involved in the report should figure out how and why such shortcomings survived multiple rounds of review. How, for example, did the National Academies' review committee conclude that the chapter on sea level rise "accurately reflects the current scientific literature on this topic"? The Academies building prominently displays Einstein's dictum "one must not conceal any part of what one has recognized to be true."

Mr. Koonin was undersecretary of energy for science during President Obama's first term and is director of the Center for Urban Science and Progress at New York University.

Appeared in the November 3, 2017, print edition as 'A Deceptive New Report On Climate.'

Joe

Joseph Bast

Chief Executive Officer

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https://object.cato.org/sites/cato.org/files/pubs/pdf/the-missing-science-of-draft-assessment.pdf

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Joe

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To: Konkus, John[konkus.john@epa.gov]
From: Jim Lakely
Sent: Thur 11/2/2017 4:41:40 PM
Subject: FW: EPA Announces Public Hearing on Proposed Repeal of Clean Power Plan

John,

I'm very excited to learn of this news. Is there a way some of Heartland's experts – all huge supporters of repealing the CPP – can pre-register before the online registration link goes live? We'd hate to be swamped by alarmists who will be spamming that link.

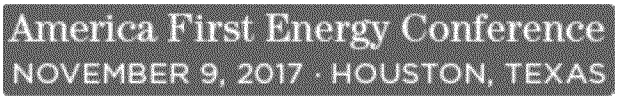
Also: I love that this hearing is in the heart of coal country. Nice touch. Gina McCarthy would hold this in Berkeley.

Cheers!

Jim Lakely
Director of Communications
The Heartland Institute
3939 North Wilke Drive

Arlington Heights, IL 60004

o: 312.377.4000
c: 312-731-9364
Twitter: @HeartlandInst



From: Dewey, Amy [mailto:Dewey.Amy@epa.gov]
Sent: Thursday, November 02, 2017 11:32 AM
Subject: EPA Announces Public Hearing on Proposed Repeal of Clean Power Plan

CONTACT: press@epa.gov

EPA Announces Public Hearing on Proposed Repeal of Clean Power Plan

Hearing will be held November 28-29 in Charleston, WV

WASHINGTON (November 2, 2017) — The U.S. Environmental Protection Agency (EPA) will hold a public hearing on the proposed repeal of the Clean Power Plan in Charleston, WV on November 28-29, 2017. All persons wanting to speak are encouraged to register in advance.

"The EPA is headed to the heart of coal country to hear from those most impacted by the CPP and get their comments on the proposed Repeal Rule. The agency looks forward to hearing from all interested stakeholders," said **EPA Administrator Scott Pruitt.**

What: Public hearing on proposed repeal of the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (commonly known as the Clean Power Plan).

When: November 28-29, 2017. The hearing will convene each day 9:00 a.m. (Eastern Standard Time) and will conclude at 5:00 p.m. If the EPA receives a high volume of requests, we may continue the public hearing to November 30, 2017. The EPA may also hold an additional hearing to be announced at a later date. See the website for updates about the hearing.

Where: West Virginia Capitol Complex, 1900 Kanawha Boulevard East, Charleston, West Virginia 25305.
Contact: Registration information will be posted at: https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan

Pre-registration to provide an oral presentation will begin when the notice is published in the Federal Register and close on November 16, 2017. People will be contacted about speaking slots via email starting on November 17, 2017.

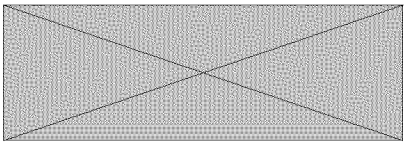
Oral comments and supporting information presented at the public hearing will be considered with the same weight as written statements and supporting information submitted during the public comment period. Written comments must be received by the last day of the comment period, which has been extended to January 16, 2018. Comments should be identified by Docket ID No. EPA-HQ-OAR-2017-0355 and may be submitted by one of the methods listed on the Clean Power Plan Proposed Repeal: How to Comment web page.

Background: Soon after the previous Administration issued the Clean Power Plan in 2015, 150 entities including 27 states, 24 trade associations, 37 rural electric co-ops, and three labor unions challenged the CPP, highlighting a range of legal and technical concerns. A few months later, the United States Supreme Court stayed the CPP, immediately halting implementation—the first time the Supreme Court had ever issued a stay to block the enforcement of a regulation.

On March 28, 2017, Administrator Pruitt signed a notice indicating the EPA's intent to review the Clean Power Plan, in accord with the President's Energy Independence Executive Order. On October 16, the EPA proposed to repeal the Clean Power Plan, proposing that it is not consistent

with the Clean Air Act. EPA is now taking comment on that proposal and has extended the public comment period to January 16, 2018.

More information about the public hearing, and the proposed rulemaking can be found online.



From: Joseph Bast
Sent: Fri 12/15/2017 3:24:12 PM
Subject: Utterly pathetic: "10 scalable solutions for carbon neutrality and climate sustainability"
Bending_the_Curve_F6_low-res.pdf

Friends,

It's hard to beat this report from the University of California for its recital of liberal cant on the climate change issue and wishful thinking about mankind's ability to change the weather. But maybe some folks can try their hand at writing pithy and hurtful critiques? It stands as Exhibit I in the role universities play in the global warming movement.

Joe

Joseph Bast

Chief Executive Officer

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Support Heartland today!

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UNIVERSITY OF CALIFORNIA

BENDING THE CURVE

EXECUTIVE SUMMARY

Ten scalable solutions for carbon neutrality and climate stability

"We must combine rigor and imagination to confront climate change: the rigor of scientific facts with the imagination to perceive what is now unseen – the dangers that lie ahead if we do not act."

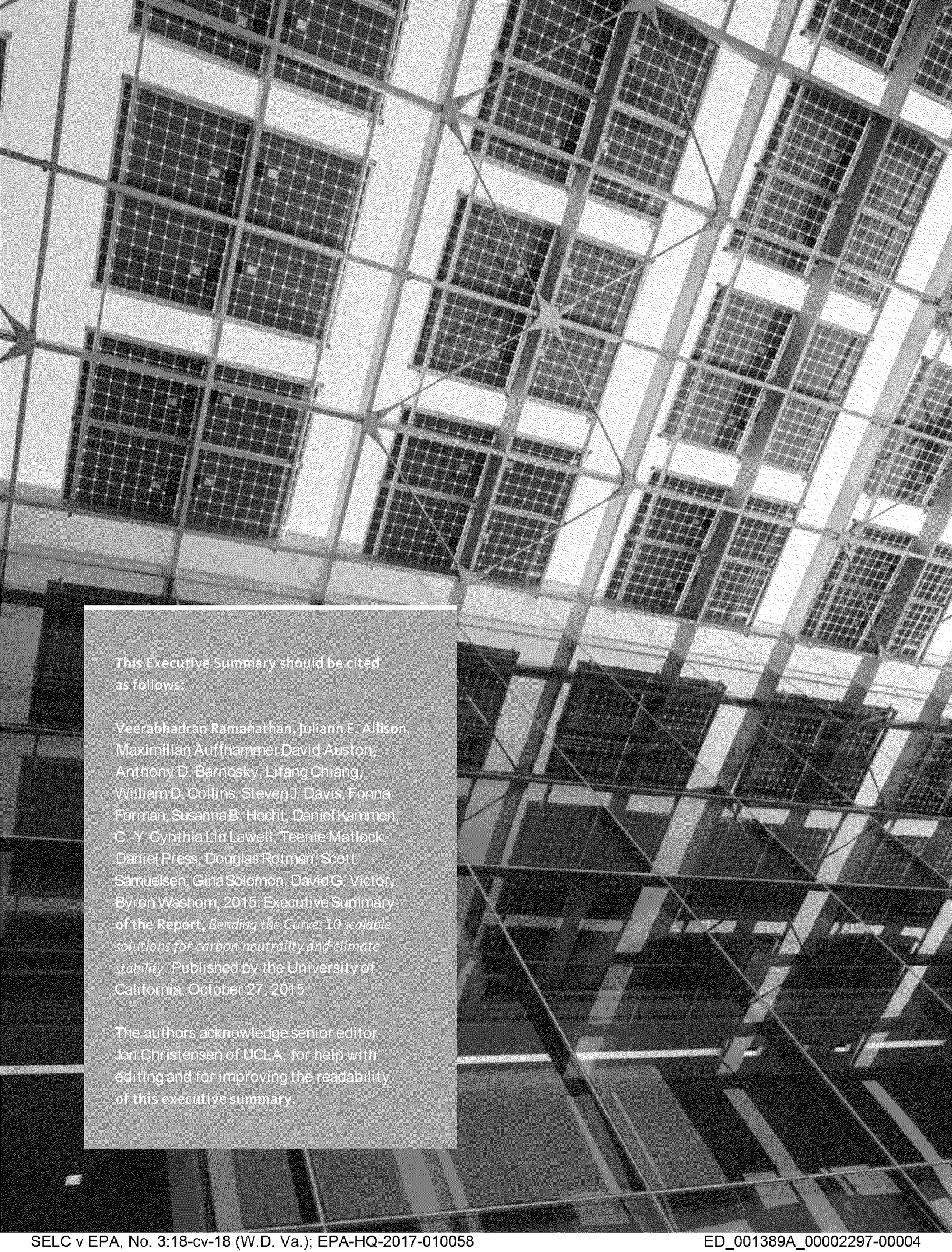
Honorable Edmund G. Brown, Jr.
Governor of California
September 25, 2015

Speech given at the UN Foundation dinner in New York City in honor of the Vatican's Pontifical Academy of Sciences for its role in shaping the Vatican's position on climate change as espoused in Pope Francis' encyclical, *Laudato Si'*

"We are the University of California, and there is no reason that UC can't lead the world in this quest, as it has in so many others."

President Janet Napolitano
University of California
2013

Statement issued during the announcement of the Carbon Neutrality Initiative of the University of California



This Executive Summary should be cited as follows:

Veerabhadran Ramanathan, Juliann E. Allison, Maximilian Auffhammer, David Auston, Anthony D. Barnosky, Lifang Chiang, William D. Collins, Steven J. Davis, Fonna Forman, Susanna B. Hecht, Daniel Kammen, C.-Y. Cynthia Lin Lawell, Teenie Matlock, Daniel Press, Douglas Rotman, Scott Samuelsen, Gina Solomon, David G. Victor, Byron Washom, 2015: Executive Summary of the Report, *Bending the Curve: 10 scalable solutions for carbon neutrality and climate stability*. Published by the University of California, October 27, 2015.

The authors acknowledge senior editor Jon Christensen of UCLA, for help with editing and for improving the readability of this executive summary.

UNIVERSITY OF CALIFORNIA

Bending the Curve: Executive Summary

TABLE OF CONTENTS

PART ONE	**FOREWORD**	2
	I. Seizing the Moment	3
	II. We Are at a Crossroads	4
	III. Bending the Curve	5
	IV. The California Experience: 1960 to 2015	6
	V. The UC Carbon Neutrality Initiative	7
PART TWO	**THE SOLUTIONS**	8
	I. 10 Scalable Solutions	10
	II. Unique Aspects of the 10 Solutions	13
	III. Pathways for Implementing the 10 Solutions	14
PART THREE	**THE URGENCY, THE HUMAN DIMENSIONS, AND THE NEED FOR SCALABLE SOLUTIONS**	23
	I. How Did We Get Here?	24
	II. Carbon Dioxide Is Not the Only Problem	25
	III. Planetary-Scale Warming: How Large and How Soon?	26
	IV. Facing the Worst Scenario: the Fat Tail	27
	V. From Climate Change to Climate Disruption: Amplifying Feedbacks	28
	VI. The Human Dimension: Public Health and Food and Water Security	31
	VII. Environmental Equity, Ethics and Justice: What Is Our Responsibility?	33
	Citations	34
	Authors	37
	Research Foci	38



PART ONE
FOREWORD

FOREWORD

I. Seizing the Moment

Climate change is scientifically incontrovertible. What the world urgently needs now are scalable solutions for bending the curve — flattening the upward trajectory of human-caused greenhouse gas emissions and consequent global climate change.

This executive summary of the full report, *Bending the Curve: 10 scalable solutions for carbon neutrality and climate stability*, presents pragmatic paths for achieving carbon neutrality and climate stability in California, the United States and the world. More than 50 researchers and scholars — from a wide range of disciplines across the University of California system — formed a climate solutions group and came together in recent months to identify these solutions, many of which emerge from UC research as well as the research of colleagues around the world. Taken together, these solutions can bend the curve of climate change. The full report will be published in spring 2016 after peer review.

This report is inspired by California's recent pledge to reduce carbon emissions by 40 percent below 1990 levels by 2030, and by the University of California's pledge to become carbon neutral by 2025. What is taking place in California today is exactly the sort of large-scale demonstration project the planet needs. And this statewide demonstration project is composed of many of the kinds of solutions that can be scaled up around the world.

Over the past half century, California has provided a remarkable example for the world by achieving dramatic reductions in air pollution, while continuing to grow economically. In this report, we propose a set of strategies for combating climate change and growing the economy in California, the nation and the world, while building present-day and intergenerational wealth, and improving the well-being of people and the planet.

The University of California has played a key role in California's pioneering leadership in energy and environmental policy through research, teaching and public service, and currently is partnering with local, state, federal and international leaders in the public, private and philanthropic sectors to address our pressing climate change challenges. We still have much more to do here in California. We are eager to share these lessons with the world at the upcoming global climate summit in Paris, and together build a better, safer, healthier and more equitable world, while bending the curve of climate change.

As we make the changes necessary to achieve carbon neutrality at the University of California, employing solutions that can be scaled up to developing energy and climate solutions for the world, hundreds of thousands of faculty, students and staff across our 10 campuses and three affiliated national laboratories will be learning and sharing with the world how we can bend the curve of greenhouse gas emissions and stop global warming through taking bold yet pragmatic steps and lowering the barriers so others can follow.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00007

II. We Are at a Crossroads and We Must Make a Choice

Climate change is real and it is happening now.

This is evident in the increased frequency and intensity of storms, hurricanes, floods, heat waves, droughts and forest fires. These extreme events, as well as the spread of certain infectious diseases, worsened air pollution, drinking water contamination and food shortages, are creating the beginning of what soon will be a global public health crisis. A whole new navigable ocean is opening in the Arctic. Sea levels are rising, causing major damage in the world's most populous cities. All this has resulted from warming the planet by only about 0.9 degrees Celsius, primarily from human activities. Since 1750, we have emitted 2 trillion metric tons of carbon dioxide (CO_2) and other greenhouse gases. The emission in 2011 was around 50 billion tons and is growing at a rate of 2.2 percent per year. If this rate of increase continues unabated, the world is on target to warm by about 2 degrees Celsius in less than 40 years. By the end of the century, warming could range from 2.5 degrees Celsius to a catastrophic 7.8 degrees Celsius. We are transitioning from climate change to climate disruption. With such alarming possibilities the planet is highly likely to cross several tipping points within decades, triggering changes that could last thousands of years. All of this is occurring against a backdrop of growing needs and pressures by humans, as our population is set to increase by at least 2 billion people by 2050.

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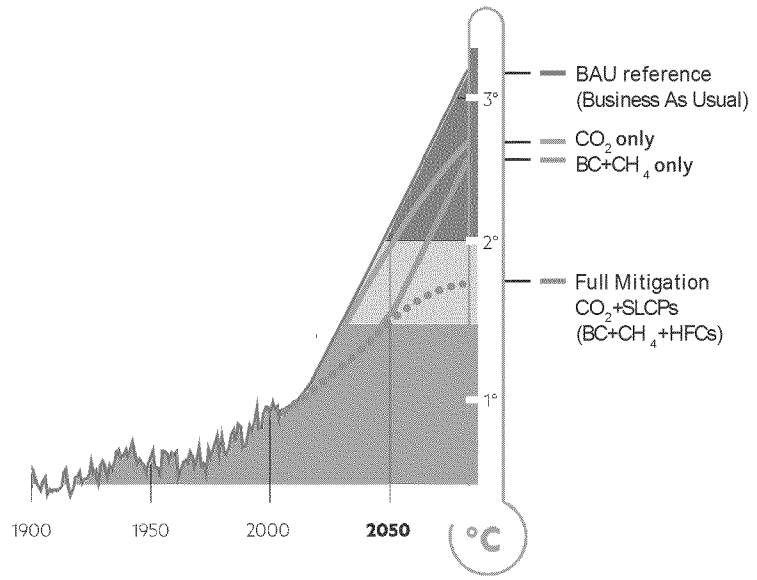
III. Bending the Curve

SLCP CLIMATE BENEFITS

Avoided Global Warming by 2050

(Climate and Clean Air Coalition, United Nations Environment Programme)

BC + CH_4	0.5°C
HFCs	0.1°C
SLCPs	0.6°C



Simulated temperature change under various mitigation scenarios

"Bending the curve" refers to flattening the upward trajectory of human-caused warming trends. Reducing CO_2 emissions by 80 percent by 2050 and moving to carbon neutrality post-2050 would begin to bend the temperature curve downward and reduce overall warming by as much as 1.5 degrees Celsius by 2100.[1] More rapid reductions can be achieved by reducing four short-lived climate pollutants. These short-lived climate pollutants, known as SLCPs, are methane (CH_4), black carbon, hydrofluorocarbons (HFCs, which are used in refrigerants) and tropospheric ozone. If currently available technologies for reducing SLCPs were fully implemented by 2030, projected warming could be reduced by as much as 0.6 degrees Celsius within two to four decades, keeping the mid-century warming well below 2 degrees Celsius relative to the pre-industrial average. This could give the world additional time to achieve net-zero emissions or even negative carbon emissions through scaling up existing and emerging carbon-neutral and carbon sequestration technologies and methods. Achieving both maximum possible mitigation of SLCPs and carbon neutrality beyond 2050 could hold global warming to about 2 degrees Celsius through 2100, which would avert most disastrous climate disruptions. This is our goal in this report.

In this executive summary of the full *Bending the Curve* report, we describe 10 practical solutions to mitigate climate change that are scalable to the state, the nation and the world. There are many such reports offering recommendations and solutions to keep climate change under manageable levels. We take full account of such action-oriented reports and offer some unique solutions to complement them. Many of the solutions proposed here are being field tested on University of California campuses and elsewhere in California. The background, the criteria, the quantitative narrative and justification for these solutions can be found in the full report.

1 Temperature estimates for future warming trends as well as for the mitigated warming given throughout this report have a 95 percent probability range of ±50 percent. For example, a value of 2 degrees Celsius in the report is the central value with a 95 percent range of 1 to 4 degrees Celsius. That is, there is a 95 percent probability the true value will be within that range.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00009

IV. The California Experience: 1960 to 2015

In the economic boom following World War II — fueled by large increases in population, vehicles, diesel trucks and coal-burning industries — California recorded some of the highest air pollution levels, competing with the city of London for the dubious title of the worst polluted region in the world. Since then, California has made a remarkable turnaround. From 1960 to the present, California has reduced levels of particles and gases related to air pollution by as much as 90 percent.

The concentration of black carbon was reduced by 90 percent across California. In the meantime, fuel consumption for the transportation sector increased by a factor of five and population grew from 15.5 million (1959) to 39 million (2014). California also has made impressive gains in energy efficiency and in lowering its carbon footprint. Its per capita energy consumption is among the lowest in the United States (48th) and its per capita electricity consumption is the lowest — roughly half of the U.S. per capita consumption.

California is one of the most energy-efficient and greenest economies in the world. It is the second-to-least carbon-intense economy in the world next to France, which relies heavily on nuclear power. It also is a leader in renewable power generation with 23 percent of its electricity generated from renewables (not including hydropower), second only to Germany (which generates 27 percent of its electricity from renewables). These impressive environmental gains did not hurt California's economy, which grew at an impressive pace with the highest gross domestic product of all states in the nation, constituting the world's eighth largest economy. California has shown how to reduce fossil fuel related pollution emissions while sustaining strong economic growth.

Emboldened by this favorable experience in regulating air pollution, California in 2002 passed the first law in the country that targeted greenhouse gas emissions from vehicles. In 2006, it enacted the precedent-setting Global Warming Solutions act and gave authority to California's air pollution agency, the California Air Resources Board (CARB), to enact policies to reduce its greenhouse gas emissions to 1990 levels by 2020. The state responded with a suite of measures that include a cap and trade program, a low carbon fuel standard for vehicles, automobile emission standards expected to reduce emissions by 30 percent by 2016, renewable portfolio standards for utilities, energy efficiency programs for buildings and appliances, and transit and land use programs to reduce vehicle miles traveled. This has been followed by another milestone in 2015 when Gov. Brown issued an executive order setting a goal of reducing CO_2 emissions to 40 percent below 1990 levels by 2030, which is the pathway required for stabilizing climate below 2 degrees Celsius relative to the pre-industrial average. The legacy of California's air quality and energy efficiency programs since the 1960s and the depth of expertise at CARB on the multi-dimensional aspects of climate change mitigation have placed California in a unique position to embark on such ambitious low carbon pathways.

While its geography, equable climate and commerce have favored green growth, this progress came as a result of five decades of consistent and innovative policies that relied on sound research, innovative development and aggressive implementation of policies. While California relied only on command and control regulation until the 1990s, the state began rolling out market incentives for controlling nitrous oxide emissions and demonstrated the efficacy of market instruments to mitigate certain types of emissions. Relying on this experience, CARB launched a cap and trade system in 2013 to reduce carbon emissions from utilities, industrial facilities and fuel distributors, covering 85 percent of California's emissions, making it the most comprehensive cap and trade market in the world.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00010

V. The Carbon Neutrality Initiative of the University Of California

California cannot address climate change on its own, but the state can serve as a living laboratory for "the art of the possible," sharing its good practices and cooperating with other states and nations to mitigate their emissions. To achieve this goal, California has created an "Under 2 MOU," an agreement Gov. Brown co-founded with the state of Baden-Württemberg in Germany. The "Under 2 MOU" is an agreement among subnational jurisdictions around the world to limit the increase in global average temperature to below 2 degrees Celsius. Since the global agreement was firstsigned in May 2015, a total of 45 jurisdictions in 20 countries and fivecontinents, with a total GDP of US$14 trillion, have signed or endorsed the agreement.

This report is an outgrowth of the University of California President's Carbon Neutrality Initiative. The authors of this report and our colleagues at the University of California's 10 campuses and three affiliatedational laboratories are strongly motivated by the special demands of this ambitious goal, and we are also motivated by corresponding goals for the state of California, the nation and the world. The UC Carbon Neutrality Initiative is dedicated to achieving net-zero greenhouse gas emissions by 2025 across all 10 UC campuses. It should be emphasized that a net-zero emission target is enormously demanding and requires careful strategic planning to arrive at a mix of technologies, behavioral measures and policies, as well as highly effectivecommunication — all of which, taken together, are far more challenging than simply reducing emissions by some 40 percent or even 80 percent. Each campus has a unique set of requirements based on its current energy consumption and emissions. Factors such as a local climate, reliance on cogeneration facilities, access to wholesale electricity markets and whether the campus has a hospital and medical school, shape the specificchallenges of the campuses, each of which is a "living laboratory" for learning and adapting.

Examples of current projects related to the Carbon Neutrality Initiative are described in the full report. These include an 80 megawatt solar array in the Central Valley (the largest at any U.S. university), an experimental anaerobic digester that is using food waste to produce bio-methane, a large fuel cell that generates 2.8 megawatts of electricity from a municipal waste water treatment facility, smart lighting and smart building systems that dramatically reduce energy consumption and a solar greenhouse that selectively harvests light for solar electricity. These and other works at the University of California illustrate the commitment that we have made to mitigate climate change.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00011

PART TWO
THE SOLUTIONS





I. 10 Scalable Solutions

These 10 pragmatic, scalable solutions—all of which can be implemented immediately and expanded rapidly—will clean our air and keep global warming under 2 degrees Celsius and, at the same time, provide breathing room for the world to fully transition to carbon neutrality in the coming decades. More detail on each solution can be found in Section III.

1

Bend the warming curve immediately by reducing short-lived climate pollutants (SLCPs) and sustainably by replacing current fossil-fueled energy systems with carbon neutral technologies. Achieve the SLCP reduction targets prescribed in solution #9 by 2030 to cut projected warming by approximately 50 percent by 2050. To limit long-term global warming to under 2 degrees Celsius, cumulative emissions from now to 2050 must be less than 1 trillion tons and approach zero emissions post-2050. Solutions #7 to #9 cover technological solutions to accomplish these targets.

2

Foster a global culture of climate action through coordinated public communication and education at local to global scales. Combine technology and policy solutions with innovative approaches to changing social attitudes and behavior.

3

Deepen the global culture of climate collaboration by designing venues where stakeholders, community and religious leaders converge around concrete problems with researchers and scholars from all academic disciplines, with the overall goal of initiating collaborative actions to mitigate climate disruption.

4

Scale up subnational models of governance and collaboration around the world to embolden and energize national and international action. Use the California examples to help other state- and city-level jurisdictions become living laboratories for renewable technologies and for regulatory as well as market-based solutions, and build cross-sector collaborations among urban stakeholders because creating sustainable cities is a key to global change.

5

Adopt market-based instruments to create efficient incentives for businesses and individuals to reduce CO_2 emissions. These can include cap and trade or carbon pricing and should employ mechanisms to contain costs. Adopt the high quality emissions inventories, monitoring and enforcement mechanisms necessary to make these approaches work. In settings where these institutions do not credibly exist, alternative approaches such as direct regulation may be the better approach — although often at higher cost than market-based systems.

6

Narrowly target direct regulatory measures — such as rebates and efficiency and renewable energy portfolio standards — at high emissions sectors not covered by market-based policies. Create powerful incentives that continually reward improvements to bring down emissions while building political coalitions in favor of climate policy. Terminate subsidies that encourage emission-intensive activities. Expand subsidies that encourage innovation in low emission technologies.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00014

7

Promote immediate widespread use of mature technologies such as photovoltaics, wind turbines, battery and hydrogen fuel cell electric light-duty vehicles, and more efficient end-use devices, especially in lighting, air conditioning, appliances and industrial processes. These technologies will have even greater impact if they are the target of market-based or direct regulatory solutions such as those described in solutions #5 and #6, and have the potential to achieve 30 percent to 40 percent reduction in fossil fuel CO_2 emissions by 2030.

8

Aggressively support and promote innovations to accelerate the complete electrificationof energy and transportation systems and improve building efficiency. Support development of lower-cost energy storage for applications in transportation, resilient large-scale and distributed micro-scale grids, and residential uses. Support development of new energy storage technologies, including batteries, super-capacitors, compressed air, hydrogen and thermal storage, as well as advances in heat pumps, efficient lighting, fuel cells, smart buildings and systems integration. These innovative technologies are essential for meeting the target of 80 percent reduction in CO_2 emissions by 2050.

9

Immediately make maximum use of available technologies combined with regulations to reduce methane emissions by 50 percent and black carbon emissions by 90 percent. Phase out hydrofluorocarbons(HFCs) by 2030 by amending the Montreal Protocol. In addition to the climate and health benefitsdescribed under solution #1, this solution will provide access to clean cooking for the poorest 3 billion people who spend hours each day collecting solid biomass fuels and burning them indoors for cooking.

10

Regenerate damaged natural ecosystems and restore soil organic carbon to improve natural sinks for carbon (through afforestation, reducing deforestation and restoration of soil organic carbon). Implement food waste reduction programs and energy recovery systems to maximize utilization of food produced and recover energy from food that is not consumed. Global deployment of these measures has the potential to reduce 20 percent of the current 50 billion tons of emissions of CO_2 and other greenhouse gases and, in addition, meet the recently approved sustainable development goals by creating wealth for the poorest 3 billion.

Of the 10 solutions proposed here, seven (solutions#1 and #4 through #9) have been or are currently being implemented in California (see "The California Experience: 1960 to 2015" in this executive summary).

California's experience provides valuable lessons, and in some cases direct models, for scaling these solutions to other states and nations. Decades of research on University of California campuses and in national laboratories managed by the university contributed significantlyto the development of these solutions. Several of the renewable energy technology solutions in solutions #6 and #7 have been fieldtested on University of California campuses (see "The Carbon Neutrality Initiative of the University of California" in this report). Scaling these solutions to other states and nations and eventually globally will require attitudinal and behavioral changes covered in solutions #2 and #3.

UC researchers currently are working on many of these solutions, along with colleagues around the world. UC faculty also are involved in research on solution #10 to identify and improve carbon sinks in natural and managed ecosystems by expanding existing, proven practices worldwide. The cost of fully implementing these solutions will be significant,but California shows that it can be done while maintaining a thriving economy. And the cost is well justifiedin light of the social costs of carbon emissions, including 7 million deaths every year due to air pollution linked to fossil fuel and biomass burning which also releases climate warming pollutants to the atmosphere.

If we can scale these 10 solutions beginning now, we can dramatically bend the curve of deadly air pollution and global warming worldwide. California can't bend the curve on its own. Neither can the University of California. But we can be part of powerful networks and collaborations to scale these solutions.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00015



II. Unique Aspects of the 10 Solutions

- This report is one of the first documents that treats mitigation of air pollution and climate disruption under one framework. The solutions proposed here recognize the fact that fossil fuel combustion — which produces greenhouse gases — also produces particles and gases such as ozone and black carbon, which also contribute to global warming. Others, such as sulfates, cause sunlight to dim and dry the planet. We can accelerate solutions and gain some time for long-term change to a carbon-neutral world by bending the curve of all of these pollutants immediately and simultaneously as part of one unifiedstrategy.
- These 10 solutions leverage the power of concern for human health worldwide. People care about human health. Burning fossil fuels causes both air pollution and climate changes that result in human illnesses and death. As the Lancet Commission concluded in June 2015: "The effectsof climate change are being felt today and future projections represent an unacceptably high and potentially catastrophic risk to human health."
- This report recognizes that intra-regional, intra-generational and inter-generational equity and ethical issues are inherent in climate change and any solutions to climate change. These issues arise in part because consumption by about 15 percent of the world's population contributes about 60 percent of climate pollution; while 40 percent of the population, who contribute very little to this pollution, as well as generations unborn, are likely to sufferthe worst consequences of climate disruption.
- These solutions represent an integrated approach that includes familiar goals for achieving carbon neutrality through renewable energy, with new goals for reducing SLCPs immediately; building on California's success to encourage sub-national governance, regulations and market-based instruments; and innovative approaches in education, communication and incentives to encourage attitudinal and behavioral changes. To be effective, this integrated strategy requires engagement by diverse stakeholders and the creation of a culture of climate action through localized interventions that lower barriers for citizens to take concrete steps to participate in solving our climate crisis.
- These solutions recognize the fact that fundamental changes in human attitudes and behaviors toward nature and each other are critical for bending the curve of air pollution and global warming. As a result, two of the solutions deal with bringing researchers and scholars together with community and religious leaders and stakeholders to lower barriers to addressing climate change from the local level on up.
- This report recognizes the fundamental importance of effectivecommunication to reach and engage diverse constituencies throughout the world to bend the curve of emissions and warming, achieve carbon neutrality and stabilize Earth's climate.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00017

III. Pathways for Implementing the 10 Solutions

Our 10 scalable solutions are grouped in six clusters listed below.

- Science Solutions Cluster
- Societal Transformation Solutions Cluster
- Governance Solutions Cluster
- Market- and Regulations-Based Solutions Cluster
- Technology-Based Solutions Cluster
- Natural and Managed Ecosystem Solutions Cluster

Science Solutions Cluster

1. Bend the warming curve immediately by reducing short-lived climate pollutants (SLCPs) and sustainably by replacing current fossil-fueled energy systems with carbon neutral technologies. Achieve the SLCP reduction targets prescribed in solution #9 by 2030 to cut projected warming by approximately 50 percent by 2050. To limit long-term global warming to under 2 degrees Celsius, cumulative emissions from now to 2050 must be less than 1 trillion tons and approach zero emissions post-2050. Solutions #7 to #9 cover technological solutions to accomplish these targets.

- Maximize use of existing technologies to cut emissions of methane and black carbon immediately. Since both are air pollutants, air pollution control agencies can require this now. This also will reduce another short-lived climate pollutant, ozone. Phase out HFCs immediately — replacement refrigerant compounds are available now. Mitigation of SLCPs also has significant local benefits, saving 2.4 million lives lost to outdoor pollution and 3 million lives lost to indoor pollution each year, and saving as much as 140 million tons of maize, rice, soybean and wheat lost annually to air pollution.
- Phase out the current fossil-fueled energy system and replace it with a diverse mix of carbon-neutral and carbon sequestration technologies. California's targets of 50 percent renewables in power generation, a 50 percent increase in energy efficiency, and a 40 percent reduction in greenhouse gas emissions by 2030 provide an excellent medium-term roadmap for the nation and the world. If carbon emissions are reduced by 80 percent by 2050, transitioning to zero emissions soon after, this action along with the SLCP mitigation action can keep global warming below 2 degrees Celsius for the rest of the century.
- Set up calibrated monitoring to quantify trends in emission sources and verify and make public the bending of ambient concentration curves of all air and climate pollutants.

Societal Transformation Solutions Cluster

The intra-regional, intra-generational and inter-generational equity issues of climate change raise major questions of ethics and justice. These questions compel us to reflect deeply on our responsibility to each other, to nature, and to future inhabitants of this planet — *Homo sapiens* and all other living beings alike. It is for these reasons that societal transformation merits such high ranking in this

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report, even above regulatory and technological solutions. Top-down action will be difficult to implement without substantial support from the general public, which can be accelerated by societal transformations from the bottom up.

2. Foster a global culture of climate action through coordinated public communication and education at local to global scales. Combine technology and policy solutions with innovative approaches to changing social attitudes and behavior.

- Promote coordinated information campaigns to inform choices available to strategic constituents:
    - The world's top carbon emitters, numbering 1 billion people, both individuals and institutions, who contribute about 60 percent of the world's greenhouse gas emissions. This targeted audience is easy to reach as they have readily available access to information technologies.
    - Investors in and supporters of sustainable development throughout the world, by providing information on best practices in clean energy access for the world's poorest 3 billion citizens with very low carbon footprints. Among the energy poor are forest managers who offset the consumption and energy patterns of other consumers.
    - The 3 billion low carbon emitters can serve as partners in worldwide de-carbonization by actively committing themselves, their families and their communities to learn about and to strategize for future access to carbon-neutral energy.
- Make the distribution of accountability and responsibility for sustainable energy consumption clear to all constituencies through accurate, transparent, widely available energy calculators that reveal how much energy different constituencies are consuming.
- Provide evidence-based indicators of the cumulative impacts of climate injustices. Past studies have demonstrated that the poorest 3 billion, whose emissions account for only 5 percent of total emissions, will nevertheless be disproportionately harmed by climate change, and that energy access choices based on more sustainable, low-carbon sources for these populations will result in prevention of climate disruption and collective harm to the planet and biodiversity.
- Create and integrate curricula at all levels of education, from kindergarten through college, to educate a new generation about climate change impacts and solutions.

3. Deepen the global culture of climate collaboration. Design venues where stakeholders, community and religious leaders converge around concrete problems with researchers and scholars from all academic disciplines, with the overall goal of initiating collaborative actions to mitigate climate disruption.

- Climate solutions require integrated behavioral, ethical, political, social, humanistic and scientific knowledge. Public and private institutions at every scale can create venues where decision makers, business leaders, community and religious leaders, and academics spanning the natural sciences, social sciences, humanities and arts converge around concrete problems, with the goal of creating dialogues, developing common understanding, and fostering collaborative action to mitigate climate disruption. Public universities must use their public missions and mobilize their knowledge and resources to partner with community-based agencies, local school districts and industry partners to educate locally for climate action.
- Initiate a culture of climate action by localizing interventions. Research shows that behavioral change and positive public opinion are more likely when the impacts of climate are recognized at a local scale and when barriers are lowered for people to participate in concrete actions to solve our climate crisis.
- Religious leaders can integrate protection of the environment with their traditional efforts to protect the poor and the weak. A model exhortation in this

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00019

vein is Pope Francis' encyclical *Laudato Si'*, which stated: "We are faced not with two separate crises, one environmental and the other social, but rather with one complex crisis which is both social and environmental. Strategies for a solution demand an integrated approach to combating poverty, restoring dignity to the excluded, and at the same time protecting nature."

Governance Solutions Cluster

4. Scale up subnational models of governance and collaboration around the world to embolden and energize **national and international action.** Use the California examples to help other state- and city-level jurisdictions become living laboratories for renewable technologies and for regulatory as well as market-based solutions, and build cross-sector collaborations among urban stakeholders because creating sustainable cities is a key to global change.

- State- and city-level jurisdictions can set the standards and the pace for national actions by serving as living laboratories for renewable technologies, regulatory-based ("command and control") strategies and market-based solutions. Such effortsalso speed up translation of science to policy actions, especially if those who have been marginalized in systems of governance are included in authentic ways that advance justice and equity. Over the past several decades, California has shown that subnational leadership in technological development, regulatory action, market-based solutions and provision of equitable benefitshas demonstrated a viable path forward for other states and nations.
- National and subnational leaders must promote international action and cooperation in order for unilateral climate policies — such as California's climate mitigation mandate AB 32 or the American Clean Energy and Security Act — to succeed and to minimize potential detrimental effects, such as the risk of emissions leakages which arise when only one jurisdiction (California, for example) imposes climate policy but other jurisdictions do not.
- State-level climate policy should encourage innovation and commercialization of technologies and solutions that can replace fossil fuels and concurrently enable the poorer nations of the world to achieve economic growth with zero and low-carbon technologies.
- Accelerate the impact of cities on climate mitigation through: (1) municipal and regional Climate Action Plans (CAPs); (2) green infrastructure projects, such as: (a) urban forestry to improve carbon sequestration and reduce the urban heat island effect; (b) locally decentralized micro-grids using renewable energy sources; (3) smart mobility planning and design for active living and healthy place-making (such as mixed-use in-fill and transit oriented development), which reduces greenhouse gas emissions by making cities less auto-centric and more walkable and bikeable; (4) incentivizing photovoltaic retrofits and new net-zero energy technology; and (5) corresponding civic engagement and public education strategies, accompanied by concrete local opportunities for participatory climate action, to change attitudes and behaviors.
    - The 25th session of the UN-Habitat's Governing Council (April 2015) approved new International Guidelines on Urban and Territorial Planning which highlight the vital role cities can play in addressing climate change and other pressing social and ecological problems of the 21st century.
    - Cities cover less than 2 percent of Earth's surface, but they consume 78 percent of the world's energy and produce more than 60 percent of all carbon dioxide and significant amounts of other greenhouse gas emissions (UN-Habitat 2015).

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00020

Market-and Regulations-BasedSolutionsCluster

5. Adopt market-based instruments to create efficient incentives for businesses and individuals to reduce CO_2 **emissions.** These can include cap and trade or carbon pricing and should employ mechanisms to contain costs. Adopt the high quality emissions inventories, monitoring and enforcement mechanisms necessary to make these approaches work. In settings where these institutions do not credibly exist, alternative approaches such as direct regulation may be the better approach—although often at higher cost than market-based systems.

6. Narrowly target direct regulatory measures—such as rebates and efficiency and renewable energy portfolio standards—at high emissions sectors not covered by market-based policies. Create powerful incentives that continually reward improvements to bring down emissions while building political coalitions in favor of climate policy. Terminate subsidies that encourage emission-intensive activities. Expand subsidies that encourage innovation in low-emission technologies.

The problem of emissions won't solve itself. Policy makers must send decisive signals to firmsand individuals. So far, very few places in the world have adopted strong greenhouse gas mitigation policies. California is an exception, but California is less than 1 percent of the global problem. If we are to lead, we need to adopt policies that others can emulate; this is tricky because the best policies will vary with local circumstances. In general, there are two flavorsof emissions policies: direct regulation and market-based (cap and trade and carbon pricing) regulation.

Economic theory and empirical evidence tell us that market approaches are more cost-effective. In a few cases where market based control systems have been used at scale—such as trading of lead pollution, trading of sulfur dioxide pollution, and European and Californian carbon markets—that theory is borne out by evidence. Yet it is already clear that market approaches are politically very difficult to implement in part for the very reasons that many analysts find them attractive: They make the real costs of action highly transparent.

As a matter of policy design, we have chosen not to come down in favor of either market based or regulatory approaches, but to include both. Specifically, we recommend the following:

- It is imperative to anticipate and design climate policies in a way that can contain compliance costs. Pure regulation leaves policies susceptible to large increases in compliance costs, particularly in the presence of capacity or production constraints that are inherent in energy markets.
- Another artificial market distortion that must be corrected is subsidization of fossil fuels worldwide, which provides carbon-intensive fuels with an advantage over low-carbon fuels. Where necessary, charge royalties for fossil fuels extracted on public lands and territorial waters.
- Regulation requires extremely sophisticated institutions and enforcement (such as the California Air Resources Board) to prevent leakage and to look ahead and assess how regulatory decisions interact with business strategy and the evolution of technology.
- Revenues from cap and trade or carbon taxes should be used to fund aggressive pursuit of innovative new technologies that can bend the curve and protect disadvantaged communities and those adversely affected by cap and trade or other regulatory strategies (for example, through payments for environmental services to rural communities engaged in low carbon development paths, such as forest dependent communities).

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00021

Technology-Based Solutions Cluster

The technological measures under solutions #7 and #8, if fully implemented by 2050, will reduce global warming by as much as 1.5 degrees Celsius by 2100, and combined with measures to reduce SLCPs in solution #9 will keep warming below 2 degrees Celsius during the 21st century and beyond.

Global emissions of CO_2 and other greenhouse gases in 2010 totaled 49 gigatons of equivalent CO_2 per year, with 75 percent due to increases in CO_2 and 25 percent from other greenhouse gases. This estimate from the IPCC (2013) does not include two of the SLCPs, ozone and black carbon. About 32 gigatons per year are due to CO_2 from fossil fuels and industrial processes. The challenge for technology solutions is to bring down emissions of CO_2 to less than 6 gigatons per year by 2050, and reduce the emissions of methane and black carbon by 50 percent and 90 percent respectively by 2030. This in turn will reduce ozone levels by at least 30 percent. In addition, HFCs must be phased out completely by 2030. To indicate the importance of these non-CO_2 mitigation measures: HFCs are the fastest growing greenhouse gases; if emissions continue to grow at current rates, HFCs alone will warm the climate by 0.1 degrees Celsius by 2050 and 0.5–1.0 degrees Celsius by 2100.

7. Promote immediate widespread use of mature technologies such as photovoltaics, wind turbines, battery and hydrogen fuel cell electric light-duty vehicles and more efficient end-use devices, especially in lighting, air conditioning, appliances and industrial processes. These technologies will have even greater impact if they are the target of market-based or direct regulatory solutions such as those described in solutions #5 and #6 and have the potential to achieve 30 percent to 40 percent reduction in fossil fuel CO_2 emissions by 2030.

- Use of renewables and other low carbon energy sources are increasing rapidly. Catalyzed by falling prices, in 2014, renewables accounted for about 50 percent of all new power generation in the world (primarily in China, Japan, Germany and the United States), representing an investment of about $270 billion.
- Technologies exist today that can provide significant carbon reductions if used widely. Achieve a more reliable and resilient electric grid with at least 90 percent of all new generation capacity by 2030 from distributed and renewable technologies, such as photovoltaics, wind turbines, fuel cells, biogas and geothermal.
- Expand electrification of highly-efficient end-use devices, especially lighting, electric vehicles, machinery and plug load appliances.
- Examples from UC campuses demonstrate that deep energy efficiency investments are immediately amenable to widespread implementation.
- Accelerate the transition from fossil to zero-carbon, locally sourced transportation fuels such as hydrogen to power fuel-cell-powered electric vehicles, and low-carbon grid electricity to power battery electric vehicles, to meet the carbon reduction required from the light-duty and goods movement transportation sectors.
- Overall, these measures, if implemented with market and regulatory measures, can mitigate about 10 gigatons per year of CO_2 emissions by 2030.

8. Aggressively support and promote innovations to accelerate the complete electrification of energy and transportation systems and improve building efficiency. Support development of lower cost energy storage for applications in transportation, resilient large-scale and distributed micro-scale grids, and residential uses. Support research and development of a portfolio of new energy storage technologies, including batteries, super-capacitors, compressed air, hydrogen and thermal storage, as well as advances in heat pumps, efficient lighting, fuel cells, smart buildings and systems integration. These innovative technologies are essential for meeting the target of 80 percent reduction in CO_2 emissions by 2050.

- This solution will require significant investments in both basic and applied research and development, demonstration of prototypes, and commercial deployment.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00022

- Energy storage is a vital enabling technology that holds the key to transitioning from fossil fuels for our vehicular needs and managing the intermittency of renewables on the electric power grid. Over the past five years, electric vehicles have been entering the market and storage technologies are being tested now on various grid applications, mainly driven by innovations in lithium-ion batteries and hydrogen. While these innovations are promising, more research and development is needed to reduce the cost and ensure widespread deployment of battery and hydrogen storage. To achieve carbon-free electrification, complementary energy storage technologies over a variety of scales must be developed and deployed, requiring a new generation of sophisticated dynamic system control methods.
- Smart grid and micro-grid technology make possible the increasing penetration of intermittent solar and wind generation resources, the emergence and integration of plug-in electric vehicles into the grid infrastructure, and a proactive response to the increasing demand for enhanced grid resiliency, thereby meeting the challenging environmental goals associated with climate change, air quality and water consumption. The evolution of this technology represents a paradigm shift. Our power grids will be designed, configured and operated in the future across a range of scales, from smart home devices to central plant power generation. Smart micro-grid systems also enable the ability to go off the main grid, which is especially important in regions that historically have been deprived of energy access, such as developing countries in Africa and Asia.
- Advanced lighting based on efficient light-emitting diode (LED) technology is now commercially available and has a pay-back time of only one to two years. The replacement of all incandescent, metal halide and fluorescent lighting fixtures with LED lighting can reduce energy consumption from lighting by 40 percent. Investments are needed to capture further efficiencies, which are possible with the development of next-generation intelligent and more efficient 200 lm/Watt LED lighting products. These will be optimized for color and brightness to improve work and school productivity and building efficiency.
- Residential natural gas consumption can be reduced by 50 percent or more with widespread deployment of heat pumps and systems coupled to solar thermal and solar power generation. To accelerate this goal, we recommend deployment of an incentive program of rebates comparable to those for energy efficiency appliances. We also recommend the elimination of disincentives such as outdated and inappropriate regulations for ground source heat pump installations. Although more challenging, widespread deployment of heat pumps in larger commercial buildings also is possible, but will require further investments in applied research and development to accomplish comparable reductions in natural gas consumption. A promising approach that now is being tested is the capture of waste heat (and water) from cooling towers and recirculating it with heat pumps into the heating loop of buildings.
- The development of zero-carbon fuels such as hydrogen and highly-efficient engines with zero criteria pollutant emissions is required to substantially reduce the carbon footprint from light-duty vehicles and goods movement (medium-duty and heavy-duty vehicles, locomotives and ships) and, at the same time, achieve urban air quality goals.
- While full electrification is an achievable goal for light-duty and medium-duty transportation, some form of environmentally friendly renewable fuel solutions will be needed for heavy-duty transport, such as algal-based biofuels. Using algae, we can capture and beneficially reuse carbon dioxide produced from existing fossil energy sources such as natural gas electricity generation to produce diesel and jet fuels. Using wastewater and saline waters for algae growth, we will not place additional burdens on our limited fresh water resources, and can remediate pollutants

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00023

such as nitrogen and phosphate from wastewaters before they reenter the environment to contaminate aquifers or oceans. Because these currently are not scalable in an economically competitive manner, further research is needed in this area.

9. Immediately make maximum use of available technologies combined with regulations to reduce methane emissions by 50 percent and black carbon emissions by 90 percent. Phase out hydrofluorocarbons (HFCs) by 2030 by amending the Montreal Protocol. In addition to the climate and health benefits described under solution #1, this solution will provide access to clean cooking for the poorest 3 billion people who spend hours each day collecting solid biomass fuels and burning them indoors for cooking.

- The specifictechnological measures for reducing methane and black carbon are described in the table on page 21. These measures were developed by an international panel and reported in *UNEP WMO Report, 2011.*

Natural and Managed Ecosystem Solutions Cluster

10. Regenerate damaged natural ecosystems and restore soil organic carbon to improve natural sinks for carbon (through afforestation, reducing deforestation and restoration of soil organic carbon). Implement food waste reduction programs and energy recovery systems to maximize utilization of food produced and recover energy **from food that is not consumed.** Global deployment of these measures has the potential to reduce 20 percent of the current 50 billion tons of emissions of CO_2 and other greenhouse gases and, in addition, meet the recently approved sustainable development goals by creating wealth for the poorest 3 billion.

- The potential for carbon mitigation from afforestation, reduced deforestation and restoration of soil organic carbon is about 8 to 12 gigatons per year.
- Integrate payment for environmental services into global, national and local economic systems to support forest-dependent communities in sustaining forest ecosystems as an effective and rapid means of sequestering carbon and achieving carbon neutrality. This also will achieve co-benefits for biodiversity, hydrological cycles and soil development.
- Support policies that reward complex agro-ecological systems rather than simplified tree crop systems. Half the world is still rural, and rural communities need to be part of the solution. This can be facilitated by reforming agrarian policy with a focus on managing carbon, which in many areas will involve natural forest management or agroforestry.
- Globally, one-third of food produced is not eaten; in the United States 40 percent is not eaten. The CO_2 and other greenhouse gases emitted in producing this wasted food contribute 3.3 gigatons annually to emissions. And when food is thrown away, methane — which is about 80 times more potent than CO_2 as a greenhouse gas — is released in landfills.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00024

TECHNOLOGICAL MEASURES FOR CURBING SLCP EMISSIONS

Measure [1]	Sector
CH_4 measures	
Extended pre-mine degasificationand recovery and oxidation of CH_4 from ventilation air coal mines Extended recovery and utilization, rather than venting, of associated gas and improved control of unintended fugitive emissions from production of oil and natural gas Reduced gas leakage from long-distance transmission pipelines	Extraction and transport of fossil fuels
Separation and treatment of biodegradable municipal waste throught reycling, composting and anaerobic digestion as well as landfill gas collection with combustion/utilization Upgrading primary wastewater treatment to secondary/tertiary treatment with gas recovery and overflowcontrol	Waste management
Control of CH_4 emissions from livestock, mainly through farm-scale anaerobic digestion of manure from cattle and pigs Intermittent aeration of continuously flooded rice paddies	Agriculture
BC measures (affecting BC and other co-emitted compounds)	
Diesel particle filters for road and off-road vehicles Elimination of high-emitting vehicles in road and off-road transport	Transport
Replacing coal by coal briquettes in cooking and heating stoves Pellet stoves and boilers, using fuel made from recycled wood waste or sawdust, to replace current wood-burning technologies in the residential sector in industrialized countries Introduction of clean-burning biomass stoves for cooking and heating in developing countries[2,3] Substitution of clean-burning cookstoves using modern fuels for traditional biomass cookstoves in developing countries[2,3]	Residential
Replacing traditional brick kilns with vertical shaft kilns and hoffman kilns Replacing traditional coke ovens with modern recovery ovens, including the improvement of end-of-pipe abatement measures in developing countries	Industry
Ban on open field burning of agricultural waste[2]	Agriculture

1 There are measures other than those identified in the table that could be implemented. For example, electric cars would have a similar impact to diesel particulate filters but these have not yet been widely introduced; forest fire controls could also be important but are not included due to the difficulty in establishing the proportion of fires that are anthropogenic.

2 Motivated in part by its effect on health and regional climate, including areas of ice and snow.

3 For cookstoves, given their importance for BC emissions, two alternative measures are included.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00025



PART THREE
THE URGENCY, THE HUMAN DIMENSIONS, AND THE NEED FOR SCALABLE SOLUTIONS



I. How Did We Get Here?

The invention of the steam engine and the subsequent acquisition of breathtaking technological prowess culminating in the current information age two centuries later have led to enormous improvements in human well-being. But the impressive improvement has come at a huge cost to the natural environment. The combination of air and water pollution, species extinction, deforestation and climate change has become an existential threat to life on this planet. The gargantuan transformation of the environment has stimulated ecologists and geologists to consider whether the Holocene epoch — the past 12,000 years of relatively constant climate and environmental conditions that stimulated the development of human civilization — has ended, and a new epoch, the Anthropocene, has begun, an epoch that recognizes that human exploitation of Earth has become akin to a geologic force (see side table).

Most of the changes listed in this table, and many others, have occurred in a span of time equivalent to a human lifetime beginning in the 1950s, which is considered the beginning of the so-called "great acceleration" of human impacts. This also is the period that has seen the steepest increase in global mean temperatures, global pollution and deforestation.

> The most imminent threat that can harm the entire planet and its inhabitants is climate change.

ANTHROPOCENE: GROWTH IN HUMAN ACTIVITIES
(1880s to 1990s) Crutzen (2002)

Human activity	Increase in size
World population	Increased six-fold
Urban population	Increased thirteen-fold
World economy	Increased fourteen-fold
Industrial output	Increased forty-fold
Energy use	Increased sixteen-fold
Coal production	Increased seven-fold
Carbon dioxide emission	Increased seventeen-fold
Sulfur dioxide emission	Increased thirteen-fold
Lead emission	Increased eight-fold
Water use	Increased nine-fold
Fish catch	Increased thirty-five fold
Blue whale population	99 percent decrease

Taken from *Climate and Common Good, Statement*: P. Dasgupta*, V. Ramanathan*, P. Raven*, Mgr M. Sanchez Sorondo*, M. Archer, P.J. Crutzen, P. Lena, Y.T. Lee, M.J. Molina, M. Rees, J. Sachs, J. Schellnhuber. Published by PontificalAcademy of Sciences, April 2015.

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SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00028

II. Carbon Dioxide Is Not the Only Problem

The greenhouse gas CO_2 contributes about 50 percent to the manmade heat added to the planet. The other 50 percent is due to several other greenhouse gases and particles in soot. Those greenhouse gases include nitrous oxide, methane, halocarbons (CFCs, HCFCs and HFCs), and tropospheric ozone. The warming particles in soot are black carbon and brown carbon. The sources of these pollutants include fossil fuels (ozone, methane, black carbon), agriculture (methane and nitrous oxide), organic wastes (methane), biomass cooking and open burning (black and brown carbon) and refrigeration (halocarbons). Among these pollutants, the SLCPs (methane, black carbon, tropospheric ozone and HFCs) have lifetimes of days (black carbon) to 15 years (HFCs), which are much shorter than the century or longer lifetimes of CO_2 and nitrous oxide.

When we add up the warming effects of CO_2 with the other greenhouse gases, the planet should have warmed by about 2.3 degrees Celsius, instead of the 0.9 degrees Celsius observed warming. About 0.6 degrees Celsius of the expected warming is still stored in the deep oceans (to about 1,500 meters). That heat is expected to be released and contribute to atmospheric warming in two to four decades. The balance of 0.8 degrees Celsius involves a complication due to air pollution particles. In addition to black and brown particles (which warm the climate), fossil fuel combustion emits sulfate and nitrate particles, which reflectsunlight like mirrors and cool the planet. The mechanisms of warming and cooling are extremely complex. But when we add up all of the effects,sulfate and nitrate particles have a net cooling effectof about 0.8 degrees Celsius (0.3–1.2 degrees Celsius range). Summing 0.9 degrees Celsius of observed warming, 0.6 degrees Celsius stored in the oceans, and the 0.8 degrees Celsius masked by particles, adds up to the 2.3 degrees Celsius warming we should have seen from the build up of greenhouse gases to-date.

> Between CO_2 and other manmade greenhouse gases, we already have added enough heat to warm the planet by 2.3 degrees Celsius. The planet has already warmed by 0.9 degrees Celsius. About 0.8 degrees Celsius of this warming has been masked by air pollution particles that reflectsunlight and cool the atmosphere. This masking effectwill go away when strict air pollution controls are adopted worldwide. Another 0.6 degrees Celsius is stored in the oceans; this will be released in the coming decades.

The particle cooling effect of 0.6 degrees Celsius should not be thought of as offsetting greenhouse gas warming. This is because the lifetimes of these particles last just days, and when stricter air pollution controls worldwide eliminate the emission of these particles, the 0.6 degrees Celsius cooling effect will disappear. This however does not imply that we should keep on polluting, since air pollution leads to 7 million deaths worldwide each year, as well as reductions in precipitation and decreases in crop yields.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00029

III. Planetary Scale Warming: How Large and How Soon?

Of the CO_2 released to the air, 44 percent remains for a century or longer; 25 percent remains for at least a millennium. Due to fast atmospheric transport, CO_2 envelopes the planet like a blanket. That blanket is growing thicker and warmer at an accelerating pace. It took us 220 years—from 1750 to 1970—to emit about 1 trillion tons of CO_2. We emitted the next trillion in less than 40 years. Of the total 2 trillion tons humans have put into the atmosphere, about 44 percent is still there. At the current rate of emission—38 billion tons per year and growing at a rate of about 2 percent per year—the third trillion will be added in less than 20 years and the fourth trillion by 2050.

How does the CO_2 blanket warm the planet? It works just as a cloth blanket on a cold winter night keeps us warm. The blanket warms us by trapping our body heat. Likewise, the CO_2 blanket traps the heat given off by the Earth's surface and the atmosphere. The surface and atmosphere absorb sunlight and release this solar energy in the form of infrared energy, some of which escapes to space. The human-made CO_2 blanket is very efficient at blocking some of this infrared energy, and thus warms the atmosphere and the surface.

How large? Each trillion tons of emitted CO_2 can warm the planet by as much as 0.75 degrees Celsius.

The 2 trillion tons emitted as of 2010 has committed the planet to warming by 1.5 degrees Celsius. The third trillion we would add under business-as-usual scenarios would commit us to warming by 2.25 degrees Celsius by 2030.

How soon? A number of factors enter the equation. To simplify, we likely will witness about 1.5 degrees Celsius (or two-thirds of the committed warming) by 2050, mostly due to emissions already released into the atmosphere (although that amount of warming could come as early as 2040 or as late as 2070). By 2050, under a business-as-usual scenario, we will have added another trillion tons and the 2050 warming could be as high as 2 degrees Celsius—and the committed warming would be 3 degrees Celsius by 2050.

> Unless we act within few years, 2 degrees Celsius warming will be upon on us by 2050. Unlike in a game of chess played with a compassionate opponent, we **cannot take back our flawed moves** when checkmate is imminent.

What is our predicament? We get deeper and deeper into the hole as time passes if we keep emitting at present rates under business-as-usual scenarios. The problem is that CO_2 stays in the atmosphere so long; the more that is there, the hotter Earth gets. If we wait until 2050 to stop emitting CO_2, there would be no way to avoid warming of at least 3 degrees Celsius because the thickness of the blanket covering Earth would have increased from 900 billion tons (as of 2010) to about 2 trillion tons (in 2050). Our predicament is analogous to stopping a fast-moving train: You have to put on the brakes well in advance of the point you need to stop; otherwise you will overshoot the mark.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00030

IV. Facing the Worst Scenario: the Fat Tail

A warming of 4 to 7.8 degrees Celsius can cause collapse of critical natural systems.

A projection such as 2 degrees Celsius warming by 2050 is subject to a three-fold uncertainty range. It is important to note, however, that the uncertainty goes both ways: Things could be a little better than the average expectation, or a lot worse. The most disturbing part of the uncertainty is that it has a so-called "fat tail," that is, a probability of a warming two to three times as much, or even more, than the 2 degrees Celsius that would result from best-case greenhouse gas mitigations. For example, the IPCC (2013 report) gives a 95 percent confidencerange of 2.5–7.8 degrees Celsius warming for the baseline case without any mitigation actions. A warming in the range of 4 to 7.8 degrees Celsius can cause collapse of critical natural systems such as the Arctic sea ice, the Asian monsoon system and the Amazon rain forest. Economists argue that our decisions should be guided by such extreme possibilities and that we should take actions to prevent them, much as we already do in requiring buildings to withstand earthquakes and automobile manufacturers to equip our cars with seat belts and air bags in the unlikely event of an accident.

> The "fat tail," when combined with the current 50 billion tons per year of emissions of warming pollutants, poses existential risks to civilizations and ecosystems alike.

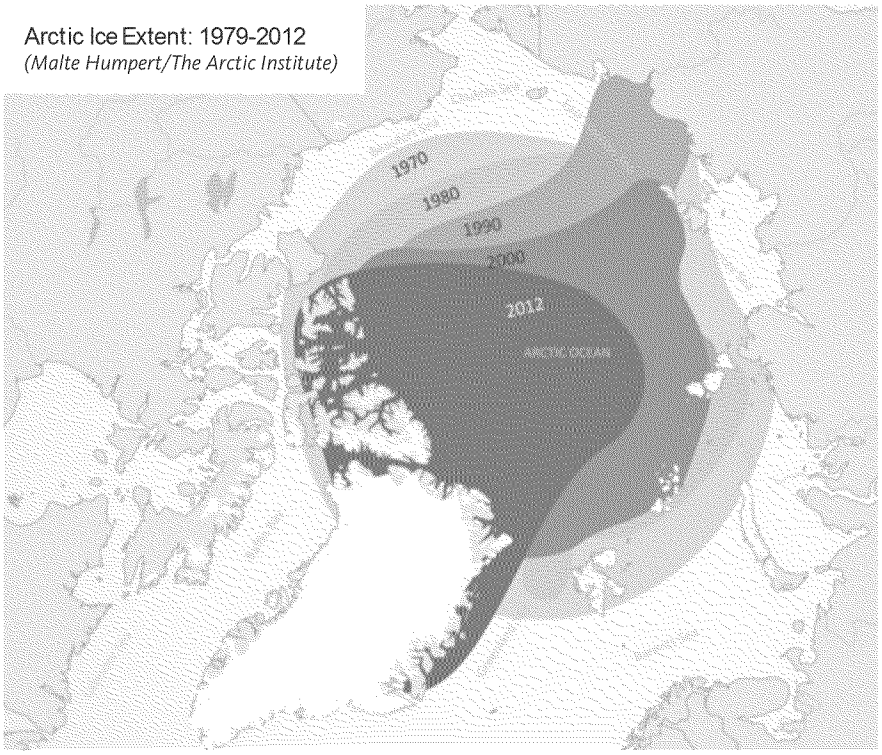
SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00031

V. From Climate Change to Climate Disruption: Amplifying Feedbacks

Observations with satellites, aircraft, ships and weather balloons gathered over the past three decades are providing disturbing evidence of nonlinear amplification of global warming through feedbacks. This has raised concerns that continued warming beyond 2 degrees Celsius can lead to crossing over tipping points in the climate system itself or in other natural and social systems that climate influences. Examples of climate-mediated tipping points include depletion of snowpack, drought, fires and insect infestations threatening whole forests, and the opening of new oceans in the Arctic. The following are among the many major feedbacks for which we have empirical evidence.

> Nonlinear feedbacks are kicking in and leading to climate disruptions and they largely are underestimated in most climate models.

Arctic Ice Extent: 1979-2012
(Malte Humpert/The Arctic Institute)

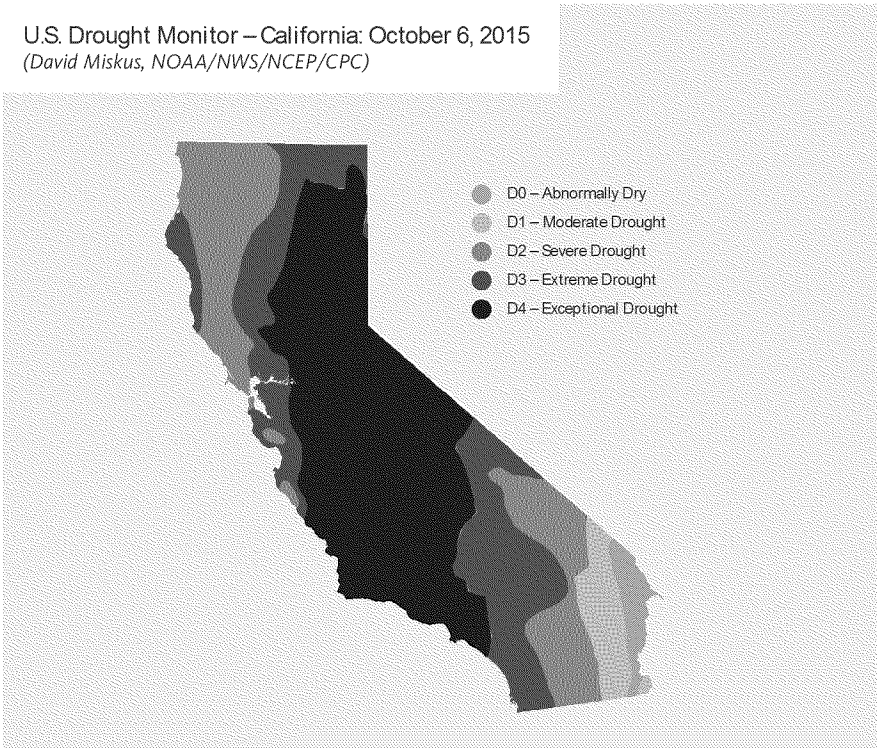


Feedbacks between warming, Arctic sea ice and absorption of the sun's heat

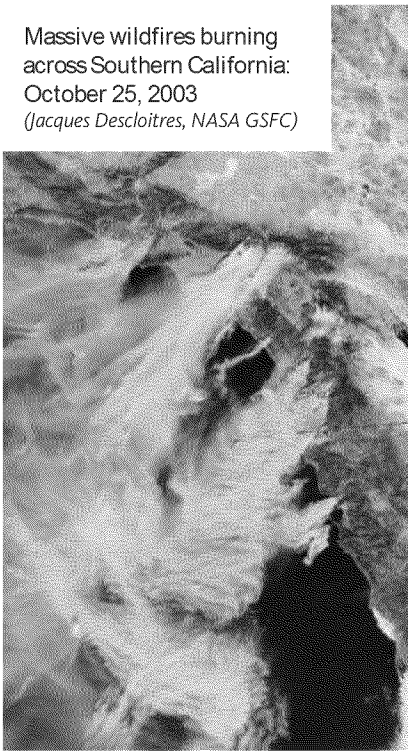
Observations from 1979 to 2012 reveal that warming in the Arctic has been amplified by 100 percent due to a feedback (a vicious cycle) between surface warming, melting sea ice and increased absorption of solar heat. Melting ice exposes the underlying darker ocean, which then absorbs rather than reflecting sunlight as the bright ice does. The added absorption of solar energy has been equivalent to the addition of 100 billion tons of CO_2 to the air. The large warming has exposed a whole new oceanic region in the Arctic.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00032

U.S. Drought Monitor – California: October 6, 2015
(David Miskus, NOAA/NWS/NCEP/CPC)



Massive wildfires burning across Southern California: October 25, 2003
(Jacques Descloitres, NASA GSFC)



Feedbacks between warming, snowpack, drought and fires

The California example: California has kept up with the average warming of the planet by about 0.9 degrees Celsius, with regions such as the Central Valley warming in excess of 2 degrees Celsius. This warming melts the snowpack, and the dark surface underneath absorbs more heat and therefore increases moisture loss by 7–15 percent per degree of warming. This amplifieddrying becomes chronic, since the warming gets worse each year due to increase in emissions of warming pollutants. The chronic drying is drastically magnifiedinto a mega-drought when rainfall decreases sporadically due to variability in the weather, similar to what has happened over the past four years. The resulting extreme drying of the soil and vegetation contributes to fires.The forest fires,in turn, emit more CO_2 as well as black carbon and methane, the two largest contributors to warming next to CO_2. This phenomenon is not confinedto California. Similar problems are occurring throughout western North America. The melting of northern latitude permafrost and resultant increases in methane emissions are another potential feedback element in warming driven by similar patterns.

Feedbacks between warming and atmospheric moisture

With every degree of warming, air holds about 7 percent more moisture. This means that warming is amplified by a factor of two, since water vapor itself is a dominant greenhouse gas. This is one of the most vicious cycles that amplifies greenhouse warming. Increases in water vapor also contribute to extreme storms and increased rainfall, which have become more common, leading to devastating floods around the world.

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00033



VI. The Human Dimension: Public Health and Food and Water Security

Climate change directly affects human health through heat waves and increasing frequency and severity of weather extremes such as storms, floodsand droughts. Secondary effectsinclude wildfires, worsened air quality, drinking water scarcity and contamination, crop and fisheryfailures, and expansion of transmissible diseases. Floods, droughts and resource shortages trigger population displacement, mental health effectsand potentially violent conflict,both within countries and across borders. Such events will affectpoorer nations much more severely, at least initially, but wealthy countries will not be spared significantharm, such as we have already seen from several major hurricanes, floods, droughts and firesin the United States. Within wealthy nations, poor communities will tend to suffer disproportionately from the health effectsof climate change.

> The effectsof climate change are being felt today and future projections represent an unacceptably high and potentially catastrophic risk to human health.
>
> Lancet Commission
> June 2015

While the focus of climate change discussions is on CO_2 from fossil fuel combustion, particulate pollution — nitrogen oxides, toxic pollutants and ozone created from power plants, vehicles and other fossil fuel combustion — also have devastating impacts on human lives and well-being, including:

- 3 million premature deaths every year from air pollution originating from fossil fuel combustion.
- Stroke, cardiovascular disease, acute and chronic respiratory disease and adverse birth outcomes.
- More than 200 million tons of crops are destroyed every year by ozone pollution.
- Mega-droughts in sub-Saharan Africa and the Indo-Gangetic plains of South Asia. The blocking of sunlight by particles from combustion of coal and petroleum, and the resulting surface dimming has slowed down rain-bearing weather systems.

Direct and Indirect Health Effects of Coal, Petroleum and Gas

(Lancet Commission, June 2015)

- Mortality and morbidity
- Cardiovascular disease
- Acute respiratory infection
- Stroke
- Mental health
- Vector-borne diseases
- Water- and food-borne diseases
- Heat stroke and other extreme weather related effects
- Lung cancer, drowning, under-nutrition
- Harmful algal blooms
- Mass migration
- Decreases in labor productivity

Cost: $70 to $840 per ton of CO_2

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00035



VII. Environmental Equity, Ethics, and Justice: What Is Our Responsibility?

One billion of us consume about 50 percent of the fossil fuel energy consumed on Earth and emit about 60 percent of the greenhouse gases. In contrast, the poorest 3 billion, who still rely on pre-industrial era technologies for cooking and heating, contribute only 5 percent to CO_2 pollution. Thus, the climate problem is due to unsustainable consumption by just 15 percent of the world's population. Fixing the problem thus has to simultaneously lower the carbon footprint of the wealthiest 1 billion, while allowing for growth of energy consumption and expansion of carbon sinks, such as forests, needed to empower the poorest 3 billion. It is in this context that it is critical to bend the curve through transforming to carbon neutrality in developed nations while sharing technology that enables developing nations to leapfrog over use of fossil fuels to produce the energy they need. Indeed, for the poorest 3 billion, doing so is literally a matter of life and death.

For example:

- The poorest 3 billion live mainly in rural areas relying on mixed market and subsistence farming on few acres. A four-year mega-drought of the type that California is experiencing now would change their forms of livelihood and expand the likelihood of both temporary and permanent migration.
- Small island nations in the tropical Pacific already are facing mass migration caused by increased sea level. If sea level rise reaches 1 meter or more, as is plausible with business as usual, low-lying coastal nations with populations of more than 100 million people — such as Bangladesh — will move to India and other neighboring nations. While likely slower than sudden catastrophic events, the size and scope of such climate migration could make today's Syrian migration crisis look mild by comparison.
- With melting of Himalayan and other glacier systems, such as those of the Andes, more than 1.5 billion people would be left without most of their permanent water supply.
- These are critical practical issues, but there are even more substantial inter-generational ethical issues. A large fraction of CO_2 and other greenhouse gases stay in the air longer than a century, and when combined with the added heat stored in the depths of the ocean, will affect climate for thousands of years. Moreover, increased CO_2 makes the oceans more acidic, which threatens at least a quarter of the ocean's species with extinction.

If the carbon footprint of the entire 7 billion became comparable to that of the top 1 billion, global CO_2 emissions would increase from the current 38 billion to 150 billion tons every year and we would add a trillion tons every seven years, in turn adding 0.75 degrees Celsius warming every seven years.

Such impacts mean that children alive today, their children, and their grandchildren, along with all generations to come, will suffer from our unsustainable burning of fossil fuels. What is our responsibility to them?

SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00037

Citations in the Report

The 10 solutions in the executive summary were distilled from the critical analyses provided in the seven chapters listed below. These seven chapters along with the executive summary comprise the full report: *Bending the Curve: 10 Scalable Solutions for Climate and Carbon Mitigation*. The full report will be published in spring 2016 after peer review. The seven chapters, along with the references therein, form the basis of the quantitative estimates provided in the executive summary. In addition to the seven chapters, we also list a few published studies and reports below which provided us with critical analyses and some of the quantitative estimates mentioned in the executive summary.

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SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00039



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SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00041

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SELC v EPA, No. 3:18-cv-18 (W.D. Va.); EPA-HQ-2017-010058 ED_001389A_00002297-00043

From: Joseph Bast
Sent: Fri 12/15/2017 2:34:45 PM
Subject: Ross McKitrick on the Endangerment finding

McKitrick reviews the procedural arguments for overturning the Endangerment Finding.

H/T Vern Moore.

Joe

http://www.nationalreview.com/article/454662/epa-clean-power-plan-basis-rules-may-be-faulty

Revisiting the EPA Endangerment Finding

Ross McKitrick, NRO, December 15, 2017

Obama's EPA used semantic tricks to avoid rigorous scientific evaluation. Is Trump's EPA more honest?

EPA administrator Scott Pruitt is mulling over how, or whether, to respond to demands from climate skeptics that he reexamine the science that obligates the EPA to issue costly carbon-emission regulations. While he has recently acknowledged that agency staff short-circuited the science review early in the regulatory process, he may not realize that the EPA inspector general's office flagged this problem years ago, and the agency staff blew him off by means of a preposterous legal fiction that has long been in need of correction.

In 2009, the EPA issued the *Endangerment Finding*, which created a statutory obligation to regulate carbon emissions. In the lead-up to this decision the EPA had published its *Technical*

Support Document. Numerous petitions for reconsideration were subsequently filed with the administrator citing evidence of bias and cherry-picking in this report, but all of them fell on deaf ears.

In April 2010, Senator James Inhofe (R., Okla.) asked the EPA's *Office of the Inspector General* to review the adequacy of the peer-review process behind the *Technical Support Document*. The EPA was not happy with what he unearthed.

It turns out that the federal government has rules in place governing how the scientific basis for regulations should be reviewed. Guidelines from the *Office of Management and Budget* issued under the *Information Quality Act* impose varying requirements depending on the uses to which a scientific assessment will be put. The most rigorous process is for so-called *Highly Influential Scientific Assessments* (HISA). These are scientific assessments that will, among other things, lead to rules that have an annual economic impact exceeding $500 million.

The inspector general issued a lengthy report in 2011 concluding (pp. 15–22) that the EPA's science assessment for the *Endangerment Finding* was highly influential, but the peer-review process fell short of the required standard. It even violated internal EPA guidelines, by failing to publicly report the review results and cutting corners in ways that potentially hindered the work of reviewers.

The EPA argued back, rather brazenly, that their report was not an assessment at all, merely a summary of previous findings by the *U.N. Intergovernmental Panel on Climate Change*, the *National Climate Assessment*, and other reports, and these documents — not any original research by the EPA — underpinned the *Endangerment Finding*.

The IG rejected this argument for several reasons. First, the EPA study clearly was an assessment, since it selected certain lines of evidence for emphasis or exclusion and used data not found in the underlying reports. Second, the guidelines do not allow an agency such as the EPA to rely on peer reviews conducted by outside groups such as the IPCC or the *National Climate Assessment* team. Third, the IG noted (p. 53) numerous occasions when the EPA cited the *Technical Support Document* as the basis of its *Endangerment Finding*.

The EPA then argued that even if it was an assessment, it was not "highly influential." Since the *Endangerment Finding* was being issued on a "stand-alone" basis with no specific regulations attached, the investigation ended without resolution.

Thereafter the EPA proceeded to issue rules like the *Clean Power Plan* with impacts far exceeding $500 million annually. By declining to designate its science assessment as highly influential, the EPA skirted the need to conduct the required peer review, but in so doing it thwarted the intent of the statutory guidelines and undermined the ethical basis of its actions.

While the courts may not demand that this situation be rectified, Pruitt himself should. Administrative honesty demands it, especially since the determination has large potential economic ramifications. Specifically Pruitt needs to declare that the *Technical Support Document* was a *Highly Influential Scientific Assessment* that should have been reviewed as such in the first place, and he should see to it that such a review now takes place.

While climate activists may object, they have also spent years insisting that the science is settled, so if they are right, they have no reason to worry about the outcome. And if they are unhappy that this might delay the next round of rule-making, they should direct their ire at Pruitt's predecessor, who ought to have undertaken the review back in 2011 rather than playing semantic games to justify evading statutory peer-review requirements.

Regardless of Pruitt's views on climate science, he should agree that the regulatory process needs to be honest and procedurally sound. This alone gives him sufficient grounds to initiate the review that was supposed to have been done years ago.

— Ross McKitrick is a professor of economics at the University of Guelph and an adjunct scholar of the Cato Institute.

From: Joseph Bast
Sent: Fri 3/16/2018 5:43:57 PM
Subject: More winning, this time at FEMA

FEMA Strips Mention of 'Climate Change' From Its Strategic Plan

Bloomberg - March 15, 2018

The Federal Emergency Management Agency, responsible for dealing with the effects of disasters like hurricanes and floods, has stripped the words "climate change" from the document meant to guide its actions over the next four years.

FEMA on Thursday released its strategic plan for 2018-2022. It replaces a version issued under former President Barack Obama that repeatedly cited the challenges caused by a changing climate, and the need for FEMA to incorporate those risks into its long-term plans.

By contrast, the new document doesn't mention climate, global warming, sea-level rise, extreme weather, or any other terminology associated with scientific predictions of rising surface temperatures and their effects.

"Disaster costs are expected to continue to increase due to rising natural hazard risk, decaying critical infrastructure, and economic pressures that limit investments in risk resilience," the plan states, without saying what might be causing that natural hazard risk to rise.

In a statement, the agency said that its plan "fully incorporates future risks from all hazards regardless of cause. Building upon the foundation established by FEMA's previous two Strategic Plans, this plan commits the agency, and the nation, to taking proactive steps to increasing pre-disaster investments in preparedness and mitigation."

The document notes that hurricanes and wildfires in 2017 represented "historic disasters," but it makes no mention of the conclusions by other federal agencies that such disasters are likely to get worse as the concentration of greenhouse gases in the

atmosphere increases.

Brock Long, whom President Donald Trump appointed to run FEMA last year, has equivocated on whether climate change is real and man-made. “The term climate change has become such a political hot button that, I think, I keeps us from having a real dialogue,” he told Bloomberg in an interview last summer.

The National Centers for Environmental Information said there were 16 weather and climate disaster events with losses of $1 billion or more in the U.S. in 2017. For 1980 through 2017 the annual average of such events, adjusted for inflation is 5.8.

Overall, those incidents resulted in 362 deaths and had significant economic impacts on the areas impacted, said the centers, which are part of the National Oceanic and Atmospheric Administration.

Joe

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From: Joseph Bast
Sent: Thur 9/7/2017 7:28:04 PM
Subject: WSJ: Democrats Have the Green Party Blues

A lot of truth in this.

Too many PR and campaign types think climate change alarmism isn't a big issue in elections because surveys show the American people rank it at the bottom of issues that concern them. But those surveys actually help explain why the public is upset with elites spending billions of dollars and denying people choice of where to work, where to live, what to drive, etc. in the name of a liberal fantasy. Trump won because fewer than 10% of the public believe global warming merits the attention Obama gave and Clinton said she would give to it.

Melloan concludes, "If the Democrats want to make a comeback, they should think about purging their ranks of these zealots." Amen to that, and if **Republicans** want to keep their majorities in the House and Senate and keep the White House, they should resist efforts by these zealots to join their party or, if already in the party, to embrace this death wish.

Joe

https://www.wsj.com/articles/democrats-have-the-green-party-blues-1504735290

Democrats Have the Green Party Blues

The party's environmental extremism puts it at odds with working people whose aspiration is prosperity.

By George Melloan

We know that the Democrats have been, since the New Deal, the party of government. Some of the outrage at Mr. Trump comes from federal bureaucrats who fear for their jobs. That's understandable enough—simple economic determinism, as the Marxists might say.

But recent history reveals something else that may help explain the Democratic Party's

problems. Whereas it became the party of labor in the late 1930s and then snatched the civil-rights banner out of Republican hands in the 1960s, of late it has veered in a direction that does not particularly suit the interests of either working people or people of color with ambitions to climb the economic ladder. It has become, in essence, America's Green Party, eclipsing the tiny party that bears that name.

Underlying the Green philosophy is a distrust of economic growth. That's what distinguishes Greens from garden-variety environmentalists who simply want a safe and clean environment, as everyone does. Although the Greens operate under the flag of environmentalism, they have greater ambitions. They are a modern manifestation of a back-to-nature movement, feeding on the guilt and anxiety that accompany scientific advance.

Greens adopted the Democratic Party precisely because it is the party of government. They see government power as the way to suppress the animal spirits of private enterprise that produce innovation and new wealth.

Under Green influence, Democratic lawmakers, when they controlled Congress, designated large tracts of the American West as new "wilderness areas." They fostered the Endangered Species Act, which has been an effective barrier to industrial or agricultural development in more than a few states, often on specious claims of endangerment. They vastly expanded the amount of private property officially designated as "wetlands," thus restricting its use. Other examples abound.

And of course the Democrats, with Al Gore as their Joan of Arc, took up arms against fossil fuels with the fantastic claim that burning them endangers the planet. If that isn't a call for a return to the dark ages—literally—what is? Without oil, coal and gas to run the power plants that supply electricity for lights, household appliances and factories, the economy would shut down. In Australia, Green attacks on coal have in fact caused blackouts.

To demonstrate how Green the Democrats have become, one need go no further than President Obama's statement last year that climate change (the new code word for global warming) is the nation's No. 1 problem. He also claimed 97% of scientists agree that "climate change is real, man-made and dangerous." But actual scientists don't agree 97% on much of anything.

The modern Green movement got traction from the 1968 founding of the Club of Rome at that city's Accademia dei Lincei. Describing itself as a global think tank concerned with the "future of humanity," it produced a global best seller called "The Limits to Growth," predicting, inaccurately, that at the then-current rate of development mankind would soon exhaust the Earth's natural resources. Maurice Strong, a self-described socialist and former oil tycoon, imported the Club of Rome's philosophy into the United Nations, launching the U.N.'s propagation of the global warming theory.

The Democrats still claim to be the party of labor, but their attack on the energy sources that keep the economy running can hardly be described as pro-worker. Government employee unions still adhere to the Democrats, but the leaders of industrial unions, who now represent only a single-digit percentage of the workforce, are belatedly beginning to have second thoughts.

Working people, fed up with the diktats of the Greens who infest their farms and factories, were a major factor in the election of Mr. Trump. The Greens, concentrated in coastal blue states, were shocked that anyone would question their motives. But to many Americans it looked like the Greens were disdainful of the aspirations of working people to live the good life—and there may have been some truth to that. When Mrs. Clinton described them as "deplorables," that was the last straw.

If the Democrats want to make a comeback, they should think about purging their ranks of these zealots. Greens want to deprive the economy of its basic energy sources, and they have little regard for the consequences, mainly because they don't think they will be among the victims. It might take some doing, but ditching the Greens is, if you'll excuse the expression, Democrats' best path out of the wilderness.

Mr. Melloan is a former deputy editor of the Journal editorial page and author of "Free People, Free Markets: How the Wall Street Journal Opinion Pages Shaped America" (Encounter, 2017).

Appeared in the September 7, 2017, print edition.

Joseph Bast

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received this message in error, please notify us immediately by replying to the message and deleting it from your computer.

To: Konkus, John[konkus.john@epa.gov]
From: Jim Lakely
Sent: Wed 9/6/2017 3:02:16 PM
Subject: RE: WaPo

Sheesh. Are the career bureaucrats really going to scream like stuck pigs over every single dollar?

Jim Lakely
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From: Konkus, John [mailto:konkus.john@epa.gov]
Sent: Wednesday, September 06, 2017 9:27 AM
To: Jim Lakely
Subject: RE: WaPo

Here's another grants story for you all to chew on, this one just popped…

Washington Post

https://www.washingtonpost.com/news/powerpost/paloma/the-energy-202/2017/09/06/the-energy-202-epa-cuts-funding-to-newspaper-reporting-on-it/59aef5a330fb04264c2a1ce9/?utm_term=.0d4ba6bac971

The Energy 202: EPA cuts funding to newspaper reporting on it

By Dino Grandoni, 9/6/17

For nearly three decades, the Environmental Protection Agency has funded the Bay Journal, a

publication with a print circulation of 50,000 focused on covering environmental issues in the Chesapeake Bay.

Since its inception in 1991, and through four presidential administrations, the EPA financially backed the monthly newspaper — until last month when, without warning, the agency cut off the Bay Journal's funding.

"If this brings about the demise of the Bay Journal, it will be a devastating loss," said Will Baker, president of the Chesapeake Bay Foundation.

The cancellation of the $325,000 grant to the Bay Journal may just be one small piece of EPA chief Scott Pruitt's "back-to-basics" effort to reorient the agency toward its bare-bones, statutory responsibilities. But some Chesapeake Bay environmentalists note the decision comes shortly off the heels of the Bay Journal's scrutinizing coverage of President Trump's environmental priorities.

It "seems suspicious to me that the Trump administration announced this cut after the Bay Journal reported, accurately, on how the administration's elimination of all federal funding for the Chesapeake Bay Program would be devastating to the bay," said Tom Pelton, director of communications for the Environmental Integrity Project and host of a radio show on Baltimore's WYPR about environmental issues in Maryland.

"I could see that that would be threatening," Betsy Nicholas, executive director of Waterkeepers Chesapeake, said of the Bay Journal's coverage, noting that she couldn't be sure why funding was cut. She added the loss of the grant "took everybody as a surprise."

In late June, the Bay Journal wrote a story on the "wide and deep swath" the White House's proposed budget would cut through Chesapeake Bay-related environmental initiatives, including most notably the Chesapeake Bay Program, a regional partnership meant to restore water quality in the bay that the Trump administration proposed to eliminate.

The proposed cuts, the article said, would "delay key environmental initiatives, end important research and spur experienced workers to leave their jobs." And the loss of the Chesapeake Bay Program could "dramatically set back cleanup efforts."

Another article, from March, that described Trump's proposed budget cuts as "steep" and "massive" was titled "Trump budget plan would slam Bay."

The EPA decided to cut off its funding to the Bay Journal two years into a six-year grant, citing in its notice a “shift in priorities” at the agency, without elaborating further. It is the only grant of its kind to come up for review by the EPA in 2017, according to an EPA official.

“It is highly unusual in that EPA is canceling the support in the middle of the award period rather than deciding not to renew,” said Donald Boesch, a marine scientist at the University of Maryland and president of the school’s Center for Environmental Science. “In my experience, EPA has only done that when there has been noncompliance with the terms of the agreement or misconduct." Boesch added that neither appeared to be the case here.

When asked for the reasons that the grant was canceled, including whether the Bay Journal’s coverage was a factor in the decision, EPA spokeswoman Amy Graham said in a statement: “It's not unprecedented for a new administration to conduct a thorough review of the previous administration's funding decisions, which is currently ongoing for all grants.”

Graham added that the EPA is “focused on ensuring taxpayer funds are spent responsibly on programs that yield tangible results to protect clean air, land and water, and as part of that effort, funding for the Bay Journal will now go back into the Chesapeake Bay Program to fund other Chesapeake Bay grants.”

Under Pruitt, the EPA has taken the unusual step of putting a political appointee, John Konkus, in charge of all grants it awards. So far, Konkus has canceled close to $2 million in competitively awarded grants to universities and nonprofit organizations. One priority, according to reporting from The Post's Juliet Eilperin, is to eliminate references to “the double C-word” — climate change — in solicitations.

The Bay Journal was slated in February to get the EPA grant, constituting about a third of the publication’s overall budget. The monthly newspaper gets the rest of its funding from nonprofit grants and individual contributions.

Tim Wheeler, managing editor of the Bay Journal, was confident in an interview Tuesday that the publication could endure the loss of government funding.

"It's not going to put us out of business," Wheeler said, before adding that the editors "would like to be able to persuade the EPA to rethink its reasoning here."

When asked about the possibility of the Bay Journal's coverage playing a role in the decision, Wheeler said he couldn't say.

"Well, I would hope not," he said, noting that the stories went unchallenged by the EPA. "They were pretty much straight reporting."

From: Jim Lakely [mailto:JLakely@heartland.org]
Sent: Tuesday, September 5, 2017 5:04 PM
To: Konkus, John <konkus.john@epa.gov>
Subject: RE: WaPo

Heartland's new president, former Congressman Tim Huelskamp, tweeted about this in the AM.

https://twitter.com/CongHuelskamp/status/905104044636737536

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From: Konkus, John [mailto:konkus.john@epa.gov]

Sent: Tuesday, September 05, 2017 2:10 PM
To: Jim Lakely
Subject: RE: WaPo

Thank you Jim!

I'll check on the invite for you.

From: Jim Lakely [mailto:JLakely@heartland.org]
Sent: Tuesday, September 5, 2017 3:07 PM
To: Konkus, John <konkus.john@epa.gov>
Subject: RE: WaPo

John,

This is outstanding! I didn't realize until reading it that the focus of the hit-piece was you. Congrats!

I've shared this story with all Heartland staff, asking them to jump to your aide and defend this position. I had to laugh, though, at the story. It's not that Eilperin would have written a story other than the pearl-clutching one she did. It's that she went to Christie Todd Whitman for comment. That she would defend the politicization of EPA grants – which for decades have gone only to alarmist nonprofits and scientists, not to mention wasteful scams like subsidizing "green" cookstoves – shows how EPA grows and becomes more alarmist through Republican and Democratic administrations alike. At least, that is, until now.

Congrats! And let me know how else we can help. I expect an op-ed, a couple of blog posts, some social media activity, and perhaps a podcast on this.

And don't forget! Can you check on our invitation to Administrator Pruitt to give a keynote address at our America First Energy Conference on November 8 in Houston? We've got three keynote slots, and I've got tentative affirmation from Zinke to take one of them. I'd love to have Zinke and Pruitt speak to an audience of hundreds of energy industry influentials.

Best,

Jim Lakely
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From: Konkus, John [mailto:konkus.john@epa.gov]
Sent: Tuesday, September 05, 2017 9:27 AM
To: Jim Lakely
Subject: WaPo

Jim: Check out this article: https://www.washingtonpost.com/politics/epa-now-requires-political-aides-sign-off-for-agency-awards-grant-applications/2017/09/04/2fd707a0-88fd-11e7-a94f-3139abce39f5_story.html?hpid=hp_hp-more-top-stories_epagrants-730pm-winner%3Ahomepage%2Fstory

- Accountability and process being put in place to protect the taxpayers.
- An agency that's actually NOT spending the taxpayer's money!
- The last administration inserted its politics into nearly all funding awards, we're taking politics out.
- This is draining the swamp, it's what the American people voted for.

From: Joseph Bast
Sent: Wed 9/6/2017 2:29:08 PM
Subject: Myron Ebell in the Washington Post

Friends,

The Washington Post ran a long, inaccurate, and hopelessly biased account of the history the global warming debate, parroting the left's framing of the issue as industry stoolies versus "the science" and liberal "consensus" versus a few conservative wacknuts:

https://www.washingtonpost.com/investigations/a-two-decade-crusade-by-conservative-charities-fueled-trumps-exit-from-paris-climate-accord/2017/09/05/fcb8d9fe-6726-11e7-9928-22d00a47778f_story.html?hpid=hp_rhp-more-top-stories_coolerheads-6pm%3Ahomepage%2Fstory&utm_term=.189650efe8bb

Still, Myron deserves the credit he gets. Congratulations to him.

While I wasn't in Paris in 2015 to witness this moment, I watched the video and will always appreciate this:

Ebell and several coalition allies were also there [in Paris], at a day-long "counter conference" held at a Paris hotel on Dec. 7 in opposition to the agreement. Their arguments were familiar: Government regulation, not global warming, was the true threat. They claimed scientific data supported their cause.

Ebell joked about how some Cooler Heads members worked to shape public debate.

"I'd say, Heartland does the science, CFACT [the Committee for a Constructive Tomorrow] does the activism, and unfortunately it is left to CEI to do the politics in Washington, D.C.," Ebell said, according to a video of the event.

Ebell added: "Thank God for Heartland. . ." Before he could finish, protesters in the audience drowned him out.

"Thank God for Heartland! Thank God for Heartland!" the protesters yelled sarcastically. "Thank God!"

For once, the protesters were right!

Joe

Joseph Bast

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To: Konkus, John[konkus.john@epa.gov]
From: Jim Lakely
Sent: Tue 9/5/2017 7:48:27 PM
Subject: RE: WaPo

Thanks. And Heartland's H. Sterling Burnett, who produces our Climate Change Weekly email, will be featuring a commentary on this story as his lead item. Past examples at the link below.

https://www.heartland.org/publications-resources/newsletters/climate-change-weekly

Best,

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To: Jim Lakely
Subject: WaPo

Jim: Check out this article: https://www.washingtonpost.com/politics/epa-now-requires-political-aides-sign-off-for-agency-awards-grant-applications/2017/09/04/2fd707a0-88fd-11e7-a94f-3139abce39f5_story.html?hpid=hp_hp-more-top-stories_epagrants-730pm-winner%3Ahomepage%2Fstory

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From: Joseph Bast
Sent: Tue 9/5/2017 3:27:33 PM
Subject: Paul Driessen on exactly how many wind turbines it would take...

This is a difficult point, well made.

Joe

September 5, 2017

Revisiting wind turbine impacts

Erroneous recent calculation highlights need to assess renewable energy sustainability claims

Paul Driessen

It's amazing, though hardly surprising, how quickly some used Hurricane Harvey's devastation to claim that fossil fuel emissions are driving catastrophic climate change and weather. Their proffered solution, of course, is to replace those fuels with "clean, sustainable, renewable" energy.

I've critiqued this supposed solution many times, on multiple grounds. Unfortunately, a hasty numerical calculation for a recent column was way off base, and readers properly chastised me for the error. I just blew it, using megawatts instead of megawatt-hours to derive the number of wind turbines … and amount of land … it would take to replace the world's 2016 electricity entirely with wind energy.

My conclusion that it would require 830 million turbines and twice the land area of North America was thus off by embarrassing amounts. However, my reviewers offered many "correct" numbers.

Their turbine totals ranged from 2 million to 4, 10 and 12 million; their acreage figures from 0.5 to 40, 60 and even 247 per turbine. Total acreage for all the turbines ranged from the size of France or Texas – to half of North America. Energy scholar Cork Hayden graciously provided analytical aid.

Bottom line: Assumptions are key – about turbine size; number, location and extent of good wind sites; ability to actually erect turbines on those sites; wind turbine capacity factor, in average hours per day of electricity generation; duration and quality of wind power per year, especially as turbines proliferate into increasingly poor wind areas; and power generation needed to charge huge battery arrays to ensure reliable electricity during multiple windless days (2, 7, 14 or more) when turbines provide no power.

Another variable, of course, is the amount of electricity that is to be replaced by wind. In 2016, the world used 25 billion megawatt-hours (MWh) of electrical energy, generated by fossil fuel, hydroelectric and nuclear power stations, with minor contributions from wood (biomass) and trivial amounts of wind and solar. Year-round average *power generation* was 2.85 million megawatts (MW) or 2.85 terawatts (TW) – compared to *zero* generation in 1881.

Electricity makes our industries, jobs, travel, communication, living standards, health and safety possible, and demand will certainly grow as more nations electrify, and more vehicles are battery-powered.

Here are my fundamental assumptions: Wind turbines replace 100% of today's 2.85 TW global electricity generation, by some future date – as many activists and politicians insist we must (and can) do. Turbines are all 1.8-MW nameplate power. Average turbine capacity factor gradually falls from 33% to 16.5% as the best wind sites are utilized, and much poorer sites must be developed.

(In the USA many of the best wind sites are off the Washington-to-California and Maine-to-Georgia coastlines, and in the Great Lakes, where water depths and powerful local opposition would make it impossible to install many turbines. Onshore turbine size is limited by the size of blades that can be hauled by trucks on winding roads. The same situation would likely apply around most of the globe.)

Further assumptions: One-third of turbine output powers society; two-thirds charge batteries that provide power for 48 of every 72 hours that wind is not blowing. And winds always cooperate with that scheme – always arriving just in the nick of time, as batteries are depleted, and never disappearing for more than two days, even during sweltering summers or frigid winters when demand soars but winds disappear.

Of course, most of these assumptions exist only in the realm of fairies, pixie dust, green energy utopia and easy number crunching. They are meant to initiate important analyses and debates that climate alarmists, renewable energy proponents, legislators and policy makers have never conducted.

Using these assumptions, generating 25 billion megawatt-hours would require *1.6 million 1.8-MW turbines* functioning at full 1.8-MW capacity in strong winds, all day, every day, with no worries about storage. If they operate only eight hours a day (33% engineered capacity), we just use electricity when it's available, instead of when we need it. But that's terribly inconvenient and disruptive.

So we employ the Dr. Hayden system, instead. We erect 4.8 million turbines that operate steadily for eight hours, sending one-third of their electricity to the grid and two-thirds to batteries. That would yield 8 hours of direct power while the wind is blowing (33% capacity factor) – and let us draw power from the batteries for the next 16 hours, until the wind regularly picks up again. "I love magic," he says.

That clearly won't work. We really need at least 48 hours of storage – and thus three times as

many turbines, under a similar arrangement, but providing more flexibility, to recognize unpredictable wind patterns and the likelihood of two windless days in a row. We're up to *14.4 million 1.8-MW turbines*.

Want a bigger safety net? To assure against seven windless days? 50 million turbines should do it.

But then we're really into the mediocre wind sites. Capacity plummets to 16.5% or so. Perhaps 100 million turbines will do the trick. Pray that lulls last no more than a week. Or send the army to those intransigent, unpatriotic coastal communities, and forcibly install turbines in their super windy areas.

That would also ensure that electricity generation is close to our big urban centers – hence shorter transmission lines, and less cement, steel, copper, et cetera to build the power lines. It's a win-win situation, except for those who have to look at or live next to turbines and transmission lines, of course.

How much land are we talking about, to generate 25 billion megawatt-hours of global annual electricity? Assuming top quality wind sites, at 5 kilowatts per acre (average output per land area for any turbine at the windiest locations), *onshore turbines operating 24/7/365 would require some 570 million acres*.

That's 25% of the United States – or 30% of the Lower 48 US states. It's almost all the land in Washington, Oregon, California, Idaho, Nevada, Montana, Wyoming, Utah and Arizona combined!

Change the assumptions – change the numbers. To store electricity for windless days, total power generation (and thus turbine numbers and land acreage) begins to skyrocket. For 48 hours of backup, triple the power generation; that's the entire Lower 48. For a full week of backup, add in Canada. Bring electricity to energy-deprived developing countries, and you can at least double all these numbers.

Let's not forget the transmission lines and batteries. They also need land (and raw materials).

How many batteries? Storing 1 gigawatt-hour (GWh) of electricity – to provide power for 48 windless hours for a US city of 700,000 people – would require 480,000 of Tesla's new 100-kWh lithium-ion battery packs. Backing up 2.85 TW of 2016 generation for just two windless days would require *1.4 trillion Tesla units!* And this assumes the batteries are charged and discharged with 100% efficiency.

Just imagine the land, raw materials, mining, manufacturing *and energy* that would be needed to make all those batteries (and replace them every few years). As energy and technology analyst Mark Mills has noted, all the world's existing lithium battery factories combined manufacture only a tiny fraction of that.

I'm sure the world's battery makers would be more than happy to take our hard-earned taxpayer

and consumer cash to build more factories and make all those batteries – to save us from dangerous climate change that is no longer governed by the sun and other powerful natural forces.

Let's get real. It's time to stop playing with pixie dust and renewable energy utopia schemes. Time to open our schools and legislatures to actual thinking about energy, sustainability, climate change and what makes our jobs, health and living standards possible. Time for full-bore studies and legislative hearings on all these issues – in the USA, UK, EU and everywhere else.

Sustainability and renewable energy claims are too grounded in ideology, magic and politics. Wind and solar energy forecasts ignore the need to find and mine vast new metal and mineral deposits – and open US lands that are now off limits, unless we want to import all our wind turbines, solar panels and batteries. They assume land use impacts don't really exist if they are in other people's backyards.

Worse, too often anyone trying to raise these inconvenient truths is shouted down, silenced, ignored. That has to stop. The stakes are too high for ideology and pixie dust to drive fundamental public policies.

Paul Driessen is senior policy analyst for the Committee For A Constructive Tomorrow (www.CFACT.org), and author of *Eco-Imperialism: Green power - Black death* and other books on the environment.

From: Joseph Bast
Sent: Tue 9/5/2017 2:00:59 PM
Subject: WSJ: Roger Pielke Jr., "The Hurricane Lull Couldn't Last"

Wall Street Journal

September 1, 2017

https://www.wsj.com/articles/the-hurricane-lull-couldnt-last-1504220969

The Hurricane Lull Couldn't Last

The U.S. hadn't been hit by a Category 3 or stronger storm since Katrina in 2005. We were overdue.

By Roger Pielke Jr.

Aug. 31, 2017 7:09 p.m. ET

Activists, journalists and scientists have pounced on the still-unfolding disaster in Houston and along the Gulf Coast in an attempt to focus the policy discussion narrowly on climate change. Such single-issue myopia takes precious attention away from policies that could improve our ability to prepare for and respond to disasters. More thoughtful and effective disaster policies are needed because the future will bring many more weather disasters like Hurricane Harvey, with larger impacts than those of the recent past.

For many years, those seeking to justify carbon restrictions argued that hurricanes had become more common and intense. That hasn't happened. Scientific assessments, including those of the Intergovernmental Panel on Climate Change and the U.S. government's latest National Climate Assessment, indicate no long-term increases in the frequency or strength of hurricanes in the U.S. Neither has there been an increase in floods, droughts and tornadoes, though heat waves and heavy precipitation have become more common.

Prior to Harvey, which made landfall as a Category 4 storm, the U.S. had gone a remarkable 12

years without being hit by a hurricane of Category 3 strength or stronger. Since 1970 the U.S. has only seen four hurricanes of Category 4 or 5 strength. In the previous 47 years, the country was struck by 14 such storms. President Obama presided over the lowest rate of hurricane landfalls—0.5 a year—of any president since at least 1900. Eight presidents dealt with more than two a year, but George W. Bush (18 storms) is the only one to have done so since Lyndon B. Johnson. The rest occurred before 1960.

Without data to support their wilder claims, climate partisans have now resorted to shouting that every extreme weather event was somehow "made worse" by the emission of greenhouse gases. Earlier this week, New York Times columnist David Leonhardt directed researchers "to shed some of the fussy over-precision about the relationship between climate change and weather."

Turning away from empirical science—or "fussy over-precision"—comes with risks. But whatever one's views on climate, there should be broad agreement today that bigger disasters are coming. Some may blame greenhouse gases while others may believe it to be some sort of karmic retribution. But there is a simpler explanation: Because the world has experienced a remarkable period of good fortune when it comes to catastrophes, we are due.

Agreement that more big disasters are on their way should provide opportunity for those otherwise opposed on matters of climate policy to come together and make some smart decisions. Here is where they might start:

• *Establish disaster review boards.* In the aftermath of every plane crash, the federal government convenes experts under the auspices of the National Transportation Safety Board to find out what went wrong and what might be done to prevent it happening again. Meteorologist Michael Smith of AccuWeather (a scientist who decades ago helped identify the "microburst" weather phenomena and its role in plane crashes) has long argued that the nation needs a National Disaster Review Board. After every disaster, it would evaluate what went wrong—and right—and distill lessons. The Trump administration should create such a board in the wake of Harvey.

• *Encourage resilient growth.* Disaster researcher Dennis Mileti has explained that the choices made at the local level—such as where to build—determine how a community will experience disasters. As communities develop, it can be difficult to see how local decisions might affect disasters years or decades down the road. This is particularly the case in the immediate aftermath of a disaster, when the push to "return to normal" might mean simply reinforcing the conditions that led to problems. Local communities need to take better advantage of experts who can explore development choices with an eye toward better preparing for an uncertain future.

• *Enhance federal capacity.* The federal government plays a crucial role in supporting states and local communities to prepare for, respond to and recover from disasters. When Harvey was out at sea, accurate forecasts from the National Weather Service saved many lives. The National Flood Insurance Program shapes how communities develop, and the Federal Emergency Management Agency and other agencies provide resources for those whose lives are upturned by natural disasters. President Trump should also appoint a science adviser, whose primary job traditionally has been to coordinate federal science agencies, facilitate budget requests and assess performance. There is no reason to go more than seven months without one.

The hyperpoliticized debate over climate change sees the same tiresome script play out with every extreme event. We need not all agree on the reasons why disasters will assuredly get worse in the coming years in order to come together to make sensible decisions about disaster policies. The time is now. Our good luck appears to have run out.

Mr. Pielke is a professor of environmental studies at the University of Colorado, Boulder. He is the author of "The Climate Fix" (Basic Books, 2011) and "Disasters and Climate Change" (ASU/CSPO, 2014).

Joe

Joseph Bast

Chief Executive Officer

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