

# Trump Takes Aim at Energy R&D Funds

**Exclusive:** While boasting of his plans for “American energy dominance,” President Trump is slashing key research projects and ceding much of the renewable energy market to China, notes Jonathan Marshall.

By Jonathan Marshall

In case you didn't get the memo, the White House dubbed this “Energy Week.” Though devoid of substance, President Trump took the opportunity to tout his administration's commitment not just to energy security – how passé – but to “a golden age of American energy dominance.”

Apparently the White House budget office didn't get the memo, either, because it still wants crippling cuts to very Department of Energy programs that help Americans get more bang for their energy bucks and fund breakthrough technology research to sustain U.S. energy leadership for decades to come.

The Trump administration proposes about \$3 billion in cuts to basic and applied research on energy. It would slash over half the funding for the Office of Energy Efficiency and Renewable Energy (EERE) and wipe out altogether the much-acclaimed Advanced Research Projects Agency-Energy (ARPA-E). Those priorities are reflected in legislation now being crafted by the House Energy and Water Appropriations Subcommittee.

EERE works with industry and federal laboratories to promote cutting-edge, marketable technology related to energy efficiency; solar, wind, bioenergy and geothermal energy production; and advanced manufacturing programs.

To date, according to the office's website, now under the supervision of Energy Secretary Rick Perry, “third-party evaluations have assessed one-third of EERE's research and development portfolio and found that an EERE taxpayer investment of \$12 billion has already yielded an estimated net economic benefit to the United States of more than \$230 billion, with an overall annual return on investment of more than 20%.”

To promote visionary technologies that EERE and the private sector find too risky to fund, Congress authorized the creation of ARPA-E in 2007. It was modeled after the Defense Advanced Research Projects Agency (DARPA), which is widely credited – among other breakthroughs – with funding the creation of the Internet and the Global Positioning System.

**A Nimble Agency**

ARPA-E's mission is to "enhance the economic and energy security of the United States" by reducing energy imports and pollution, improving the energy efficiency of the U.S. economy, and "ensur(ing) that the United States maintains a technological lead in developing and deploying advanced energy technologies."

Since ARPA-E first received funding in 2009, it has selectively supported some 580 R&D projects, representing a mere five percent of funding requests. Of those, 74 projects have gone on to attract more than \$1.8 billion in private funding to pursue pilot projects, 68 have partnered with the Defense Department or other government agencies to further develop their technology, and 56 have spawned new companies to commercialize their concepts.

It has also earned an enviable reputation for brilliant leadership and for a nimble, efficient operational style usually associated with successful tech companies, not government bureaucracies.

Just in time to inform the debate in Washington, the National Academies of Sciences, Engineering and Medicine two weeks ago issued an authoritative assessment of ARPA-E's track record and mission.

Contrary to the claims of critics, the report concluded, "The agency is not failing and is not in need of reform. In fact, attempts to reform the agency – such as applying pressure for ARPA-E to show short-term success rather than focusing on its long-term mission and goals – would pose a significant risk of harming its efforts and chances."

The report's biggest criticism: ARPA-E fails to tell its powerful story often and clearly enough to the general public.

The Trump administration's sabotage of such R&D programs comes at an especially critical time, when vital considerations of climate, national security, and economics all cry out for more, not less, attention to clean energy.

On the climate front, time is fast running out for a global response to the threat of disruptive warming. An international group of prominent climate scientists, writing in the journal *Nature*, have just warned that without substantial reductions in carbon emissions starting in 2020, the chances are low of limiting our planet's temperature increase to a high but manageable 2 degrees Celsius.

On the national security front, the increasingly anarchic state of the Middle East, the shakiness of the Saudi monarchy, and saber-rattling by Sunni oil producing powers against Iran and Qatar, provide a convincing rationale for weaning the U.S. economy off fossil fuels as quickly as possible, so our industry and transportation sectors become less vulnerable to price shocks

induced by war or political instability.

## **Bowing to China**

And on the economic front, the Trump administration's energy sector cuts would amount to unilateral industrial disarmament against rising foreign competitors like China.

Recalling the waves of technology innovation that propelled the U.S. economy in the Twentieth Century, MIT lecturer William Bonvillian recently argued in *The American Interest* that the next great sources of growth and innovation are renewable energy (wind and solar) and vehicle electrification.

"Although U.S. R&D played a key role in creating these sectors, it has lost implementation leadership," he warned. China "now dominates world production of solar, boasting five of the world's six largest solar companies, has the largest wind turbine company, and is on track to generate a quarter of its electricity from wind by 2030.

"China did not enter wind and solar for the environmental benefits; rather, it saw them as rapidly growing advanced-technology sectors where it could dominate and capture major world export markets. It now has. While the U.S. economy maintains the overall lead in technological advances through its still-strong research in these areas, it is in the process of ceding the financial gains of production."

With 10 electric car companies ramping up production, China also threatens the U.S. lead in such vehicles. But Bonvillian cited ARPA-E's support of radical new battery technology as a potential key to creating a true mass market for clean electric vehicles while keeping the lead in the United States:

"If the next big [energy technology wave] is electric vehicles, ARPA-E is arguably a critical breakthrough innovation institution for achieving the battery advances this requires (as well as to other energy breakthroughs). Other agencies and the private sector aren't anywhere near as well positioned."

The good news is that Trump faces fierce opposition to his efforts to disband successful organizations like EERE and ARPA-E. Two years ago, a group of prominent business leaders, including Bill Gates and General Electric CEO Jeffrey Immelt, recommended tripling ARPA-E's budget. ARPA-E also received strong support in June from the conservative U.S. Chamber of Commerce.

Just a couple of months ago, it received the most critical endorsement of all – when Congress upped its budget for the 2017 fiscal year by \$15 million. Let's hope that legislators continue putting our money where the jobs are and keep

supporting America's urgently needed development of clean energy.

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## Trump Isolates America from the World

In 2016, American voters faced a painful dilemma, electing a proven war hawk or a climate-change denier – and somehow the climate denier won – as Donald Trump just reminded the world, notes ex-CIA analyst Paul R. Pillar.

By Paul R. Pillar

Donald Trump's inexcusable withdrawal from the Paris climate change agreement was widely expected and amply telegraphed by Trump himself, of course. And yet, there were reasonable grounds for hope that this might have been one place where Trump would move from being a demagogic campaigner to being a real president, one who deals not just with applause lines but with real U.S. interests and with America's place in the world.

The substantive importance of the issue is unsurpassed, involving the fate of the planet. The main reasons to stay with the agreement are compelling, involving not only the habitability of Earth but also economic dynamism, U.S. leadership, and U.S. credibility. The non-binding nature of the agreement meant that there was not some unbearable onus that could be removed only through withdrawal.

And even though Trump has made much of fulfilling campaign promises, he already has allowed himself to be deflected from some such promises when they have collided with reality. He has not torn up the nuclear agreement with Iran, in the face of Iran's compliance with that accord. And on the very day Trump announced the pull-out from the Paris agreement, he signed a paper that keeps the U.S. embassy to Israel in Tel Aviv, in the face of what would be certain uproar, deleterious to any prospects for peace, if he had moved the embassy as promised to Jerusalem.

The withdrawal from the Paris agreement is indefensible, and thus Trump's statement announcing the move has much hot air, foreshadowing the increased hot air that everyone will be feeling without increased efforts to arrest global warming. There is, for example, the usual Trumpian assertion about being able to get a better deal, as if this were possible with an agreement that has 195 signatories and with respect to which, given Trump's withdrawal, the United

States is now virtually alone.

He harangues about how the Green Climate Fund that the agreement established is “costing the United States a vast fortune.” Barack Obama committed \$1 billion to the fund and promised a total of \$3 billion through 2020; for comparison, the proposed increase in military spending in Trump’s budget for fiscal 2018 is \$53 billion.

Trump repeatedly complains about what China will be allowed to do while ignoring completely the leadership role that China is assuming in moving to clean energy. He predicts economically crippling blackouts and brownouts under the agreement while ignoring completely the rapid progress in implementing generation of renewable energy. He avows that he “cares deeply about the environment,” which is a laughable claim in light of what Trump has been doing not only to climate change but also to the Environmental Protection Agency and to stewardship of public lands.

### **Ideology Over Realism**

Opposition to the Paris agreement reflects, as Heather Hurlburt observes, some larger patterns within American political ideology that go beyond the President himself and that Trump has exploited. Those patterns, as Hurlburt notes, are related to the unusual American experience of being a superpower, an experience that also underlies several other unconstructive American habits of perceiving and dealing with the outside world.

But the President’s withdrawal is also very much a statement about Trump himself. Given the reasons that one might have expected a better decision on this issue, the decision demonstrates that Trump’s worst and most destructive qualities are deeply entrenched. It demonstrates that things are unlikely to get much better, with many other issues, under Trump.

The episode shows that Trump will continue to play to a narrow base that squeaked him through to victory last November rather than being president of all the people, let alone a leader of the free world. It shows that campaign themes and the urge not to do whatever Obama did will continue to be more important to him than will enlightened interest, even enlightened self-interest.

It shows that he will continue to shove aside even the most glaring and indisputable facts if they conflict with the themes. It shows that his capability to focus is very short in terms of both time and space. And it shows a deficient moral sense, including in the respects in which morality is involved in what a generation bequeaths to future generations.

As citizens brace and prepare for three years and seven plus months more of

this, the problem of climate change itself should be at the top of issues that require not just bracing and preparation but also creative thinking about how to deal with the issue as long as this kind of destructive force is in control of the U.S. government. A reminder is in order that Americans are citizens not only of the United States but also of states, localities, and civil society and also – uniquely important to this issue – citizens of the world, the same world that climate change endangers.

Regarding the smaller units, what states, cities and the private sector are doing to transition to clean energy deserves all the support it can get. Regarding citizenship of the world, Americans will have to consider carefully how to respond to the rest of the world's response to the irresponsibility on this issue in Washington.

The responsible posture may entail not just respect and understanding but also support for some of those responses. Martin Wolf of the *Financial Times* has even written about sanctions as a response to U.S. withdrawal from the Paris agreement. More plausible, more worthy of support from individual Americans, defensible under the rules of the World Trade Organization, and already talked about among foreign government officials, would be a carbon tariff applied to U.S. exports.

Our children and grandchildren, feeling increasingly the effects of climate change, will read about what Trump did and wonder how our generation could have placed such a small-minded man in such a position of power with such lasting and damaging consequences.

**Paul R. Pillar, in his 28 years at the Central Intelligence Agency, rose to be one of the agency's top analysts. He is author most recently of Why America Misunderstands the World. (This article first appeared as a blog post at The National Interest's Web site. Reprinted with author's permission.)**

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## Trump Tosses Red Meat to Red States

Cornered by the expanding Russia-gate investigation, President Trump reached back to his hardcore "base" by tossing out the Paris climate accord, but the move may hurt U.S. interests, says JP Sottile.

By JP Sottile

President Trump just yanked the Yanks from a treaty that was intentionally

designed to be mostly non-binding because the Senate would never pass a binding treaty on climate. It was, however, a significant global political agreement to move toward goals that would create a working framework built on an unprecedented consensus. Mostly, Paris was an important admission that there is a problem ... like an environmental AA meeting.

So, what just happened?

Trump used the Paris Climate Agreement as a buttress. This was a political ploy to shore up support among his loyalists out in the vast swath of Red on that electoral map he recently hung in the White House. This was a move meant to give the President a chance to say he's fulfilling promises. This was about serving red meat to demoralized Trumpist media outlets. This is about generating a much-needed point of agreement with increasingly uncomfortable conservatives in Congress. This is about selling a new catchphrase: "Pittsburgh before Paris." And this speech signaled the return of Steve Bannon.

Trump rehashed the grievances of his campaign with all its incessant whining about the ways the world is taking advantage of America. It doesn't matter that the global system was constructed by the U.S. ... in the interest of the U.S. ... and with American corporations and financial "leaders" always benefiting from this system.

It doesn't matter that the American people have benefited mightily from this system, too. America is less than 5 percent of the global population, but it consumes over 26 percent of the world's resources. America's middle class was enriched by America's domination of the global system it created. But now the world is leveling out a bit and Trump is telling the people they should moan and groan because the benefits of the post-World War II system are waning ... because America isn't getting everything.

Yet the truth is that America's wealth isn't being stolen by wily Chinese or shady Indians or conniving Europeans. The people who've hoarded the wealth are not only a lot like the people in Trump's cabinet ... some of them are in Trump's cabinet. Ivanka and Jared are hoarders, too. And so, too, have the oil industry and the defense industry held a death-lock grip on this system. In fact, the intersection of weapons and crude is the nexus of the system Trump slugs-off as some global conspiracy to deny Americans their birthright. And it is a big reason why the Paris Agreement was needed in the first place.

But that's okay. Why? Because Trump is unintentionally creating space for the rest of the world to finally have a real say in the way the global system works. He's catalyzing even more leveling-off of an imbalanced system long tilted by America in America's favor.

Trump has been totally played by President Xi of China. Outmaneuvered by Vladimir Putin of Russia. Dismissed by Chancellor Merkel of Germany. And now he's shown the world that America is more fallible than ever. It is moving backwards. It is retreating. And that's more room for China and Europe and Russia.

Maybe that's not so bad. Maybe it is a good thing that America is the laughingstock that Trump, in a perfect moment of solipsistic irony, said he wanted to forestall. One thing is for sure, the rest of the world shouldn't wait around for America to clean up its own mess ... because that's something it was loath to do well before Trump body-slammed the body politic and put the future in a headlock. Alas, that's a wrestling match America is now having with itself ... and the rest of the world should just head for the exits.

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## Cumulative Costs from Global Warming

While it's impossible to precisely calculate the costs from global warming, they range from macro threats such as massive shore erosion and mass dislocations of people to micro ones like lost sleep, writes ex-CIA analyst Paul R. Pillar.

By Paul R. Pillar

Resistance to arresting human-caused warming of Earth is politically entrenched in personnel and policies of the Trump administration. This makes the United States a conspicuous delinquent among advanced industrialized countries, as highlighted at the recent G-7 summit meeting, and among the community of nations generally, as highlighted by Trump's refusal to commit to adherence to the Paris climate change agreement and by the United States surrendering leadership to the likes of [China and even India](#).

The reasons for such resistance are multiple, and even uncovering all of them would not stop perverse refusal to help save the planet. Reflecting on what appear to be the main reasons, however, may help point to strategies for overcoming the resistance.

Probably the principal belief – a mistaken belief – that accounts for the absence of what ought to be a groundswell of condemnation of the



administration's climate policies by earthlings who live in the United States is the notion that there is a zero-sum trade-off between economic well-being and action to curb global warming. Even if the notion were true, there still would be ample grounds to condemn the selfishness and short-sightedness involved in much of the resistance to action.

And even though the notion is false, politicians will exploit the notion, as Trump does in trying to reduce the issue to a question of coal-mining jobs in Appalachia. He does so even though the jobs in question were lost to technological change and will not be coming back, even though those jobs always will be a relatively small part of employment in the parts of Appalachia Trump is politically targeting, and even though economic growth in the United States would be helped much less by clinging to retrograde burning of fossil fuel than by being in the forefront of developing and implementing advanced forms of renewable energy generation.

### **False Choice**

Notwithstanding such political exploitation of misbelief, it would be wise to highlight the falsity of the notion that mankind faces a choice between economic well-being and preventing a further rise of a few degrees in global temperatures. The prospects for economic well-being worsen with that temperature rise. This is a matter not only of the economics of energy generation but of far broader and greater consequences.

The positive consequences (longer growing seasons at the higher latitudes, new opportunities for maritime transportation in the Arctic) are vastly outweighed by the negative ones, which are centered on, but not limited to, the impact on agriculture of drought and desertification, huge displacements caused by rising sea levels, and damage from increased extreme weather.

The enormity of the consequences, and the multiplicity of ways in which they will be felt, make it difficult for even the most diligent analysis to come up with an accurate translation of those consequences into dollar costs. Don't expect something like a Congressional Budget Office scoresheet. But to use this difficulty as a reason not to embrace understanding of the consequences would be no more justified than is the posture of Scott Pruitt, the eviscerator (a.k.a. the administrator) of the Environmental Protection Agency, that the reality of climate change should not be accepted because it cannot be calculated with "precision." The very enormity of the likely consequences is all the more reason to focus on them.

It behooves us to consider and to highlight all the likely consequences having economic impact (which is not to suggest that consequences that are at least as

political and societal as economic, such as ones stemming from mass migration from increasingly uninhabitable areas, aren't just as important), to chip away at the main misbelief about the economic trade-offs.

### **Sleep Deprivation**

Here's a recent bit of research to add to the mix. It's a [study](#) of how climate change is increasing sleep deprivation in the United States. Using large-scale data collected by the Centers for Disease Control and Prevention about self-reported sleep habits, and correlating the data with weather records, the researchers calculated that every increase in nighttime temperature of one degree Celsius leads to an additional three nights of restless sleep per 100 people per month.

For the entire United States, this means a one degree increase causes an additional 110 million nights of insufficient sleep each year. If current climate trends continue, there would be an additional six nights of insufficient sleep per 100 people per month by 2050, and 14 more such nights by 2099.

The impact on productivity and thus on the economy of the United States, from having so many more groggy and sleep-deprived people going to work the next day, cannot be calculated with precision but surely is substantial.

This is just one more reason, among many, not to let economic concerns be an excuse for inaction about climate change. And we shouldn't have to sleep on that.

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## **How Trump Fixes Facts Around Policy**

President Trump's disdain for inconvenient truth has led to the deletion of climate science from the EPA's web site and other moves to fix the facts around his policies, notes ex-CIA analyst Paul R. Pillar.

By Paul R. Pillar

Many of us have had more than our fill of the 100-day assessments of Donald Trump's presidency. Besides the arbitrary nature of this point on the calendar,

and besides the sheer overload of the number of attempts at such a first-quarter report card, most of what gets put on such cards does not get at what is most important in evaluating any presidency.

Heavy emphasis gets placed on legislative acts. Although an ability to work with Congress is one attribute we like to see in a president, it is only one and hardly the most important one. Besides, the reasons for lack of legislative accomplishment are apt to be found less in the White House than in obduracy and dysfunction in whoever has majority control at the other end of Pennsylvania Avenue.

The artificial reporting period encourages not only silly claims about accomplishments but also an incentive to give the impression of motion and progress even when substance is lacking. The Trump White House certainly has been no exception to this pattern.

There has been, for example, the counting as an “accomplishment” the appointment and confirmation this early in the presidential term of a Supreme Court justice – without mentioning, of course, that this event was the direct result of the Republican majority in the Senate refusing for a year even to consider the previous president’s nominee (and then expanding the “nuclear option” to shove through Trump’s nominee). Also added to the count are executive orders that only undo something that President Obama did, or, in many cases, that order a cabinet secretary to study how something that Obama did could be undone.

### **Reading Trump**

It’s not just the White House and its supporters who have indulged in the 100-day excesses. There has been much over-analysis, sometimes tinged with either hope or worry, depending on the analyst’s policy preferences, that attempts to discern larger substance and implications from individual actions or exclamations from Trump. Such attempts to extrapolate doctrine and direction from this inconsistent presidency are mostly a blood-from-a-turnip exercise.

Some lessons can indeed be drawn from the first 100 days, but with Trump the lessons are less a matter of either doctrine or accomplishment than of whether the habits, and the character and ability or lack thereof, that Trump exhibited during the campaign and in his earlier business career are continuing while he is office.

One of the best summary observations in this regard is from *Washington Post* columnist Steven Pearlstein, who writes on business and financial matters but whose conclusions could apply as well to Trump’s handling of a wide range of foreign and domestic matters:

“What we know, first and foremost, is that it hardly matters what Trump says because what he says is as likely as not to have no relationship to the truth, no relationship to what he said last year during the campaign or even what he said last week. What he says bears no relationship to any consistent political or policy ideology or world-view. What he says is also likely to bear no relationship to what his top advisers or appointees have said or believe, making them unreliable interlocutors even if they agreed among themselves, which they don’t.

“This lack of clear policy is compounded by the fact that the president, despite his boasts to the contrary, knows very little about the topics at hand and isn’t particularly interested in learning. In other words, he’s still making it up as he goes along.”

### **Reasons to Worry**

Many elements of dismay can follow from the fact of having this kind of president. We are apt to get a better idea of which specific things are most worthy of dismay as the rest of this presidency unfolds. I suggest, however, that a prime, overarching reason to worry is Trump’s utter disregard for the truth. Not just a disregard, actually, but a determination to crush the truth and to instill falsehood in the minds of as many people as possible.

The *Post*’s fact checker, Glenn Kessler, summarizes the situation by noting that “the pace and volume of the president’s misstatements” are so great that he and other fact checkers “cannot possibly keep up.” Kessler also observes how Trump’s handling of falsehoods is qualitatively as well as quantitatively different from the garden variety of lying in which many politicians indulge: “Many will drop a false claim after it has been deemed false. But Trump just repeats the claim over and over.”

It is a technique reminiscent of the Big Lie that totalitarian regimes have used, in which the repetition and brazenness of a lie help lead to its acceptance. The problem is fundamental, and relates to a broad spectrum of policy issues both foreign and domestic, because truth – factual reality – is a necessary foundation to consider and evaluate and debate policy on any subject.

Crushing the truth means not just our having to endure any one misdirected policy; it means losing the ability even to address policy intelligently. To the extent that falsehood is successfully instilled in the minds of enough people, the political system loses what would otherwise be its ability to provide a check on policy that is bad policy because it is inconsistent with factual reality.

## Ignoring Climate Science

One hundred days is enough time for the Trumpian assault on truth to start to become institutionalized. The process has become plain at the website of the Environmental Protection Agency. Changes at the website since Trump's inauguration include not only what would be expected after a change of administrations in keeping any policy statements consistent with the new regime's preferences; it also has involved expunging the truth.

Specifically, a section of the site that had existed for 20 years and provided detailed data and scientific information on climate change has been removed. The deleted site, according to climate scientist Katharine Hayhoe of Texas Tech University, included "important summaries of climate science and indicators that clearly and unmistakably explain and document the impacts we are having on our planet."

The site was a go-to place for authoritative information about climate change. This is the sort of service one should expect to get from a government agency such as EPA (just like, before I took some recent foreign travel, the website of the Centers for Disease Control and Prevention served as a go-to site for authoritative information about what inoculations I would need). Now that part of the EPA site is gone.

EPA Administrator Scott Pruitt approved the deletion because, according to an anonymous staffer under Pruitt, "we can't have information which contradicts the actions we have taken in the last two months."

So instead of defending those actions in a well-informed policy debate based on truth, the administration's approach was to delete the truth. If the policy doesn't conform with reality, then deny the reality and make it as hard as possible for citizens to be informed of the reality.

Orwell's Ministry of Truth may be closer than we thought.

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## Trump's Next Most Dangerous Possibility

Assuming President Trump doesn't blunder into World War III, the next greatest

harm he may do is reverse the modest U.S. steps toward fighting global warming, as ex-CIA analyst Paul R. Pillar explains.

By Paul R. Pillar

With the wide path of destruction that Donald Trump has been cutting – in which the damage is affecting matters ranging from principles of nondiscrimination to ethical integrity of government officials to reliable health care for Americans – it is easy to lose sight of what ultimately would be the most consequential destruction of all: the damage to a habitable planet.

The consequences may not be as immediately apparent, during the first 100 days or even during four years, as some of the other carnage, but the importance to humanity is even greater. As with many other Trump policies, it is not yet clear exactly what the administration will do regarding a specific initiative such as the Paris accord on climate change, but the overall thrust of opposing any serious effort to retard global warming is all too obvious.

The recent demonstrations known as the march for science, although ostensibly not aimed at any one leader, were a salutary expression of concern, given that denial of climate change and the associated opposition against efforts to slow global warming represent one of the most glaring rejections of science, right along with the Seventeenth Century inquisition of Galileo. The rejection is of a piece with Trump's contempt for truth on most any topic.

It is hard to know what goes through the minds of the climate change deniers and skeptics that Trump has installed in his administration. Most likely they are smart enough to know better but are playing out an appallingly selfish, politically narrow-minded, and short-sighted approach toward what sort of world will be left to their children and grandchildren. This is suggested by some of their contrived verbal formulations.

For example, Scott Pruitt, to whom Trump has given the job of presiding over the evisceration of the Environmental Protection Agency, says, "I think that measuring with precision human activity on the climate is something very challenging to do..." Who's talking about "precision"? That's a false standard.

The overwhelming scientific consensus is that human activity is a major, and probably the major, contributor to what is highly consequential global warming, even if the exact effects cannot be measured or predicted with "precision."

The posture assumed on this issue by the likes of Trump and Pruitt is highly irresponsible. The *Washington Post* editorial page puts it aptly: "Children studying [Trump's] presidency will ask, 'How could anyone have done this?' "

## The Why of Climate Denial

Contempt and disdain are proper attitudes to adopt toward the climate change deniers, including the ones in the current administration. They should be shamed either for displaying such inexcusable ignorance or, what is even worse, for displaying selfishness and short-sightedness despite knowing better.

But that is not enough. And the problem goes far beyond Donald Trump. It extends to much of the Republican Party. As the *Post* editorialists observe, the GOP is “a once-great American political party embracing rank reality-denial.” James Inhofe was throwing snowballs in the Senate well before Trump was elected.

A savvy response to the deniers is to point out some of the more immediately visible economic and political consequences of the destructive approach toward climate change that the current administration has embraced. One should point out how not being in the forefront of developing renewable energy sources represents regression, not progress, for the U.S. economy, no matter how much false hope is given to Appalachian coal miners about getting jobs back. Former New York City Mayor Michael Bloomberg is a prominent political leader who commendably is adding his influential voice to this subject.

One also should point out how the Trump administration’s degenerate posture on energy and climate change isolates the United States internationally. The posture makes the United States an object of disdain for taking a Dark Ages approach toward an issue in which, more than any other, everyone in the world has a stake. Anyone in the United States who professes to care about U.S. leadership in the world ought to be concerned about this, regardless of attitudes about atmospheric science.

The loss of U.S. leadership is especially evident in comparison with the other of the two biggest emitters of greenhouse gases: China. Although several years ago China had a backward view of the issue of climate change, seeing it as a Western excuse for trying to retard China’s economy – a notion that Donald Trump would later adopt in the reverse direction by describing climate change as a Chinese “hoax” – Beijing is now making a concerted effort to do something about the problem.

China may have already passed, as of four years ago, its peak use of coal. There are no signs that the Trump administration’s back-sliding on the issue has lessened China’s commitment to take a progressive and responsible path on the matter.

Besides revamping its own energy structure, China has become a global leader on the issue. And besides being persuaded by the scientific research that describes

how vulnerable China is to damage from climate change, Beijing also sees its progressive posture on the subject as a further way to exercise soft power in the sense of international influence.

Trump's retrograde attitude toward many aspects of the international order that have served the United States well has already meant surrendering much global leadership to China. His backward attitude on climate change means surrendering still more.

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## Coal Miners' Futures in Renewable Energy

**Exclusive:** President Trump has scored political points by touting coal-mining jobs, but he could create more real jobs in coal country by recognizing the potential for renewable-energy jobs, says Jonathan Marshall.

By Jonathan Marshall

If President Trump wants to earn a rare legislative victory and take political credit for reviving hard-hit regions of rural America, he should take a close look at how one Kentucky coal company is creating jobs.

Berkeley Energy Group this month announced plans to put coal miners back to work by building the largest solar project in Appalachia on top of a closed mountaintop strip mine near the town of Pikeville. The Eastern Kentucky coal company is partnering with the Environmental Defense Fund, which has helped develop 9,000 megawatts of renewable energy, to bring jobs and clean energy to the region.

Mining employment in the area has plummeted from more than 14,000 jobs in 2008 to fewer than 4,000 today, owing to mine automation, competition from natural gas, and environmental controls on dirty coal emissions.

Even if Trump's administration and Congress roll back clean air and water rules, most experts agree that coal-mining jobs are not coming back, particularly in Appalachia where production costs are relatively high.

But there is vast potential for the region to reclaim its ravaged landscapes for



use in generating solar energy, if federal policy continues to offer incentives. Solar resources in Kentucky, for instance, are favorable enough to power nearly 1,000 homes for every two acres of solar panels.

### **Reimagining Coal Country**

Writing last year in the *Charleston Gazette-Mail*, West Virginia solar entrepreneur Dan Conant wrote, “Our people have given sweat, blood, tears and lives to help build and power America. Reimagining ourselves not as a coal state, but as an energy state – including solar and wind – is critical if we are going to continue powering America. All we need is imagination (and a little encouragement and support) as millennial West Virginians lead the way into the future.”

Such visions are still a tough sell in many conservative communities, but many “red” states, whose politicians disdain environmental protection and deny the threat of global climate disruption, are learning to appreciate solar energy. North Carolina, Arizona, Utah, Georgia and Texas rank among the top 10 states for solar electric capacity. Together, their photovoltaic cells power more than a million homes.

In Florida, the state’s largest utility just announced plans to add nearly 2,100 megawatts of new solar capacity over the next seven years while shutting down dirty and expensive coal plants. By 2023, it expects to generate four times more energy from solar than from coal and oil combined.

At the same time, the solar industry is sending out more and more paychecks across rural America. Texas alone supports about 9,400 jobs from its solar industry. Nationally, the solar industry added 51,000 jobs last year and now employs over a quarter million people, more than three times as many as the coal industry. Solar jobs are attractive, paying a median wage of \$26 an hour for installers.

### **Wind Sweeping Down the Plains**

Wind energy is another big job engine that appeals to pragmatic conservatives who care more about the economy than the environment. More than three-quarters of Republican congressional districts have operational wind energy projects or active wind-related manufacturing facilities.

Texas, Iowa, and Oklahoma are the three top states for installed wind generation capacity, beating out former industry leader California. Many other red states, like Montana, Nebraska, and Wyoming, have immense untapped potential for low-cost wind generation.

Power Company of Wyoming is building the largest wind project in the country, with a capacity of up to 3,000 megawatts. Montana is also receiving hundreds of millions of dollars in new wind investments. No wonder: a typical wind project in that state supplies electricity at 4.7 cents per kilowatt-hour, compared to 6.8 cents from coal-fired generation.

Rock-ribbed Republican ranchers and farmers enjoy the income they earn from leasing space to turbines while continuing to use their land. In Texas, the wind industry employs more than 22,000 people and pays more than \$60 million a year to lease holders. Those facts can be appreciated even by politicians who don't care that Texas wind energy avoids carbon dioxide emissions equal to 8.3 million cars on the road.

Nationwide, employment in the wind industry topped 100,000 for the first time last year. The industry added jobs at nine times the rate of the overall economy. The U.S. Bureau of Labor Statistics reports that the fastest growing occupation in the country is wind turbine technician, with a median wage of \$51,000 a year.

Wind now supplies 5.5 percent of all electricity in the United States, contrary to President Trump's ill-informed claim that "for the most part they (wind turbines) don't work." Wind is now one of the lowest cost sources of electricity, even without federal subsidies, according to newly released estimates by the Department of Energy.

And contrary to Trump's complaint that solar is "so expensive," energy from the sun is now cheaper than new coal or nuclear power. As a result, nearly two-thirds of new U.S. generation capacity in each of the last two years used renewable technologies.

### **Clean Jobs for Trump**

Even if President Trump doesn't yet get it, his Energy Secretary, former Texas Governor Rick Perry, and his Interior Secretary, former Montana Congressman Ryan Zinke, both seem to quietly appreciate the growing potential of renewable energy. Perhaps they can educate the President, and persuade him to reap big political gains by promoting clean jobs along with clean energy in rural and rust-belt America.

Rather than eliminating funding for the Appalachian Regional Commission, for example, Trump could steer more of its resources into clean energy training and investment programs. A study published last year by scholars at Michigan Technological University and Oregon State University showed that "a relatively minor investment (\$180 million to \$1.8 billion, based on best and worst case

scenarios) in retraining would allow the vast majority of U.S. coal workers to switch to solar-related positions.”

Trump could also ramp up funding for the Solar Training Network, established last year by The Solar Foundation with White House support to “improve access to solar training, resources, and careers” and “increase the quality and diversity of the solar workforce and establish nationally consistent training standards.”

In line with Trump’s commitment to rebuilding U.S. manufacturing and competing with China, he could also redouble successful Energy Department programs to support research and development on cutting-edge technologies for solar and wind generation, energy storage, and power grid management.

Such proposals, coming from President Obama, earned widespread Republican scorn. Coming from Trump, they could create a major realignment in Congress by forging an alliance of Democrats with pragmatic Red State legislators who see where the new jobs are.

It can be done; in conservative Wyoming, a leading coal state, legislators recently crushed proposals to impose higher taxes on wind energy. President Trump just needs to follow through for once on his grand promises to blue-collar voters, rather than continuing to act like just another traditional Republican pawn of the fossil fuel industry.

**Jonathan Marshall is author of “Dangerous Denial of Global Warming,” “Team Trump Ponders Climate ‘Engineering’,” and “U.S. Media’s Global Warming Denialism.”**

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## Dropping the (Non-Nuclear) Big One

After pounding “war on terror” targets for 15-plus years, the U.S. military dropped its “mother of all bombs” on some caves in Afghanistan, a show-off of its terrifying weapon, peace activist Kathy Kelly told Dennis J Bernstein.

By Dennis J Bernstein

Just back from Afghanistan, Kathy Kelly, co-founder of Voices for Creative Nonviolence, says the consequences of U.S. military interventions across the Middle East and into Africa now include the spreading of starvation to some 16 million people.

But the U.S. government’s reaction has been to drop even more tonnage of bombs on some of these countries, including the deployment of the “mother of all bombs,” the world’s most devastating non-nuclear explosive dropped on

Afghanistan on April 13, the day I interviewed Kelly.

Dennis Bernstein: This is a very troubling day, in U.S. history, and for the people of Afghanistan. The U.S. military has dropped a 21,600 pound bomb on a tunnel complex it says was “used by Islamic State militants in Afghanistan” – that’s coming out of the government. The GBU-43B Massive Ordnance Air Blast bomb, or MOAB, known as the mother of all bombs – the largest non-nuclear bomb ever used by the U.S. in a conflict. The massive ordnance was dropped from a U.S. aircraft in Nangarhar Province. The “bunker buster” bomb is so huge it can’t be delivered by a normal bomber aircraft, but instead needs to be put in a cargo plane. Its blast radius is up to a mile.

Joining us to talk about this, and a lot that is surrounding it, is Kathy Kelly. You know a lot about what’s going on in Afghanistan. You returned from there about a week ago, and you have spent a lot of time there in the past few years. Your response?

Kathy Kelly: I came back from Afghanistan on April 6th. And I think about all the military people who have itchy fingers. They have a huge bomb and they want to experiment with it in some place other than a remote desert. It seems incredibly obscene to imagine that they would pick Afghanistan. Supposedly they have to pick a place where there’s a war going on already. And it seems like maybe the President has said I’m really not all that interested in your decisions, or the briefings in the mornings. And so, this was their chance, and they took it. The excuse given is that there are tunnels there.

But you know, many of us can remember when we were told that there were weapons of mass destruction in Iraq, and this justified the Shock and Awe bombings. And there weren’t any weapons of mass destruction to be found. And, I wonder, maybe those tunnels would never be found because they’ve all been blasted away. But that kind of rationale, it seems to me is so cruel.

I mean, suppose the United States were to transport its fighters and its weapons through tunnels, weapons like the one you just described, or weapons like the AC-130 Transport planes, weapons like the Apache helicopters that fire Hellfire missiles, I mean all this weaponry has gone into Afghanistan now since 2001. Suppose it had come in through tunnels, those tunnels would have to be the size of the Grand Canyon. And I’m not saying that we should ever legitimize armed struggle on the part of fighters who might be coming across from Pakistan, or might be coming from other countries, into Afghanistan.

But I think we have to recognize that the warlord that has spent billions of dollars, massive amounts of TNT, displaced millions of people—that’s the United States. And now we’ve hit people during a time when they’re already burdened

down, on their knees, flattened almost, by environmental problems, by poisoned water, by air that nearly can't be breathed, by 1.5 million refugees inside the country, 1.8 million that might be shoved back in, collapsing health care, collapsing education. And when I was there most recently, and inside refugee camps, it could break your heart to see how wretched the conditions are. And I was with beautiful, bright-eyed little girls. And I thought – what kind of future do they have?

DB: Just to say a little bit more about this bomb because this is fantastic, in the worst sense of it. Reading a little bit more, its principle effect is a massive blast wave said to stretch for a mile in every direction, created by an 18,000lb, I guess explosion, equal to 18,000lb of TNT. And they call it the bunker busting bomb. It's designed to damage underground facilities. The weapon costs \$16 million a shot. What could you do with \$16 million and that camp you were in recently, Kathy?

KK: Well, of course, the expenditure on weaponry at a time when there's so much massive need – I'm in New York because of a fast to call attention to Yemen, which is in a conflict where [there are] near-starvation conditions. And the same is true for three countries near the Horn of Africa: Somalia, South Sudan, Nigeria. And for the United States to be spending money on these kinds of bombs...

You know, I think the "mother of all bombs" is greed. Greed is the mother of all bombs...I think the very notion that they would drop this bomb after one of the U.S. soldiers was killed in a special operations raid is also very frightening, this disproportionate response. And when do U.S. people ever get a chance to think about what the night raids are like for the people whose homes are broken into, whose futures might be shattered by just one night raid?

DB: This notion of disproportionate response, I mean, it really does feel like a bit of Israeli influence. You know, the Palestinians shoot a rocket across the border, it misses everything, and then there's 2,000 Palestinians dead. And it's the lesson, it's sort of, I guess, this is the new world order. Trump wants people to know he's tough and at the same time they can test a lot of their new weapons. Is that too cynical? First I'm crying, you know Kathy, first I'm crying and then the fury sets in, and it's incomprehensible. But, you've been there and you've seen who the people are that we are destroying. And, I don't know. I'm sorry, go on, I interrupted.

KK: Well, you can certainly bet that people are very, very frightened of what's going to be rained down on them from the skies above. As I mentioned, their areas are already terrible. Just on my second to last day there, little Chin, she was so excited, [... she] half pulled me up a hill, the highest hill I've ever climbed in my life. And they wanted me on top of that hill so that I could be

with them as they flew kites. And each one of their kites had pictures of drones on the kite. It was Xs over it, or the consequences of drone warfare. They were so excited as those kites became little dots up in the sky. And even the youngest of the girls could tell me what a drone was. Very seriously, shaking their heads, saying "These drones can kill people."

And can you imagine the innocence of these children, and U.S. people have no exposure whatsoever to the communities of families who just want to live and raise their children. And then we pour our resources into bombs like the ones that you've described. Well, if we earn ourselves a reputation as a menacing, fearful country of warlords, we've certainly gotten what we've asked for.

So does this build security? I mean imagine how many rage-filled, angry, traumatized young people might say "Sign me up"...in the next Jihadist group that comes into town.

DB: Yeah. And this...

KK: And, Dennis, can I ask...?

DB: Yes, please.

KK: So, blowing up all the tunnels with this massive penetration bombing, does this mean, then, that they might want to drive the ISIS fighters into the cities? Because they're going to go somewhere. So then you've got...I mean Nangarhar is a very resort area near the border. But Jalalabad is not so far away. What kind of a strategy, in terms of the future, is the military thinking about?

And it's very frightening to see who's in charge of the military now. And to know that the president seems to have just kind of walked away from being informed, or aware of, these different strategies. And I think past presidents have also done plenty of damage in Afghanistan, and in Iraq and in Syria. We should all at least acknowledge that. And they were able to maybe put a better mask on it. I think President Trump doesn't have much of a mask. But it's certainly going to arouse fury all around the world.

DB: And, just for a moment, to come back to the kids who were flying kites with pictures or paintings of drones on them, I assume that's obviously out of their own experience. I imagine some of those folks actually lost relatives and friends to drone operations...

KK: Well, the young man who organized the day, he got the bus and he helped to make the kites, and invited the children, and the older kids to come on the hilltop, Maldiva has a nephew who, every time he hears a drone fly overhead,

goes into something like a panic attack, and runs and hides. And so, Maldives said "I had to do something, to try to protect my nephew."

And another thing that I want to point out is that all of this aerial surveillance, it's not just drones, the United States has been experimenting with huge systems for surveillance over Afghanistan, but those systems will never, ever disclose the kinds of questions my young friends ask when they go out to the villages to try to find out who needs the heavy blankets, to try to find out who's most in need of getting a child laborer into school. And they ask "When was the last time your family had enough food" and "What's your source for water?"

And, in the refugee camp, a woman came up to me, she just sobbed on my shoulder, and she said "I have nothing to feed my children for lunch. Nothing to give them for dinner." People run from these wars, they've got nowhere to turn, nowhere to hide. They come to overcrowded cities, like Kabul, where the infrastructure is already crumbling. You begin to wonder, "Is there no mercy? Are there no ethical constraints on the United States, which allies Saudi Arabia, and these other warlords?"

DB: The kinds of comments I've been hearing since the first bombing...but now after this bombing is that—and these are from, I don't know what you'd call them, some people call them liberals—"He's [Trump] getting his act together. This is a positive reversal." I guess, "Getting to the job. Really seeing what it looks like from the inside, really does have the power to transform."

KK: Well, it certainly is the case that he was being labelled as a kind of bumptious fool, as a president, before he took the act of hitting Syria, and now this action, and if that's how you earn your way into the elite salon as a club member, I guess we shouldn't be terribly surprised because at the top of that group are the Directors of Boeing, Lockheed, Martin Marietta, British Aerospace, Raytheon.

The stocks for Raytheon went up after. Raytheon-manufactured Tomahawk cruise missiles hit Syria. This was certainly a sad, sad statement on, I suppose, the way to corral these kinds of dangerous actions becomes more and more confusing. Because we're not really sure who is in charge of governance under the Trump administration.

DB: Kathy, you're in New York, you've said having to do with a fast. Are you fasting now?

KK: Yeah, I'm on day five of a week-long fast. It's been a real gift to be with the community across from the United Nations, at the Isaiah Wall where there's a

saying "When shall come a day when they shall beat their swords into plowshares. And their spears into pruning hooks." But we feel so conscious of the alarm that U.N. workers have sounded, have been predicting that these conflict driven, near famine conditions could cost the lives, collectively, if you factor in Yemen, Somalia, South Sudan, Nigeria, upwards of 16 million people. And what a terrible, horrible way to die, stranded in the desert with no water and no food.

And, meanwhile, the United States has supported the Saudis in blocking the Port of Hodeidah, in Saudi air strikes. The United States has made air strikes. Very, very expensive weaponry being used, while people are starving.

DB: I believe the Pentagon announced today [4/13/17] actually another air strike in Syria killed 18 of so-called rebels that they're supporting.

KK: The chaos and the upheaval that all of these strikes cause will not be over after the announcements. It will go on and on, imagine people that are maimed and wounded, and in need of health care. Imagine the families that don't have a bread winner. Imagine the desires for revenge that come. The idea that military solutions, so-called solutions, could make a difference in that part of the world is, it seems to me, insane. It seems like the military has been doing [this] decade after decade.

DB: Kathy, we just have a minute or two left, but just for a broader picture, and I always come to you with a question like this. Forgive me, but what does this say about who we are? What we've become? What our government has become? Your thoughts on that?

KK: Well, we're a nation of people who join grassroots groups to non-cooperate with murdering and killing all of the time. And these grassroots groups exist, they're sturdy, they're beckoning for more people to join, in fact they've been more evident since President Trump was inaugurated, and the lead up to that time. And so, I think we are a group of people who can say "No, we don't want to be identified as warlords, as menacing, fearsome people." But, we're going to have to do everything we can to make that very, very clear.

I think people who will be going to churches, and to synagogues, over this weekend coming up, have a responsibility to say to their communities, and their faith based leaders, "We must speak out in this time, here and now." And not focus on the past or some kind of apocalyptic future. I think that people in universities, there's a big responsibility right now. Educate our young people to understand the consequences of war, otherwise they're completely being robbed of their finances, as they go to the universities.

And I think people are right to think about strikes. Strikes all over the place,



working with the BDS campaigns, with Black Lives Matter, with students. I think it's an important time to say "We don't want to cooperate." I haven't paid a dime of federal income tax since 1980, and that's one thing I can say with relief. So, as tax day approaches, what people think, what do you want to pay for? And do you get what you pay for in the USA? And sadly, you do, you get days like today, when we learn about this massive bomb dropped on some of the poorest people in the world.

DB: Kathy Kelly, Voices for Creative Non-Violence, if people want to learn more about that organization, or what you're up to, best way?

KK: Oh, yes please, go to [vcnv.org](http://vcnv.org). Also, for the Afghan peace volunteers, seeing video of those kids up on the hillside with their kites at [ourjourneytosmile.com](http://ourjourneytosmile.com). Speaking of Yemen, we're speaking of a fast for Yemen because Yemen is starving. So, Yemen and fast and you'll get to us.

**Dennis J Bernstein is a host of "Flashpoints" on the Pacifica radio network and the author of [Special Ed: Voices from a Hidden Classroom](#). You can access the audio archives at [www.flashpoints.net](http://www.flashpoints.net).**

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## Team Trump Ponders Climate 'Engineering'

**Exclusive:** Rather than take prudent steps to reduce the release of global-warming gases, some Trump advisers are pondering risky gambles to re-engineer the Earth's climate, as Jonathan Marshall explains.

By Jonathan Marshall

While President Trump [floors the accelerator](#) to speed up global warming through executive orders and appointments of notorious climate deniers to his administration, more and more scientists are pinning their hopes on ["Plan B"](#): planetary-wide interventions to engineer ways to avoid global climate disruption. But [critics warn](#) that such a prescription, however alluring, may be as bad as the disease.

Now, to compound the irony, members of Trump's inner circle are touting climate engineering as a cheap way to insure the planet against harm without any need to change lifestyles or curb the oil and coal industries. They resemble compulsive eaters who count on frequent liposuction rather than maintaining strict diets to keep their body fat in check and stay healthy.

Evidence of climate disruption is all around us, including record-high temperatures, record-low sea ice, the die-off of major coral reefs, acidification of the oceans, drought-induced famines, and more extreme storm damage.

At the same time, climate scientists warn that barring breakthroughs in energy technology and adoption of cleaner transportation, industrial and agricultural processes, the world faces severe risks of economic and social disruption over the next half century from potentially irreversible warming.

Such considerations helped motivate more than 100 scientists and policy makers to meet in Washington, D.C., late last month to discuss some largely untested ways to prevent runaway warming by limiting the Earth's absorption of solar radiation. These measures could include using aircraft to release tiny particles into the upper atmosphere to reflect sunlight, or using fleets of boats to spray the air with saline mist to promote the formation of reflective clouds.

Several prominent Trump supporters are big boosters of such climate engineering. For example, Newt Gingrich, the President's close adviser and former House Speaker, gushed that it "holds forth the promise of addressing global warming concerns for just a few billion dollars a year. Instead of penalizing ordinary Americans, we would have an option to address global warming by rewarding scientific innovation."

And Secretary of State Rex Tillerson told investors in 2015, when he was still CEO of Exxon Mobil, "Our plan B has always been grounded in our beliefs around the continued evolution of technology and engineered solutions to address and react to whatever the climate system and its outcomes present to us."

### **Dangerous Gamble**

Responsible scientists, on the other hand, have little faith in untested proposals to re-engineer the earth's climate system, even if they back further research into such stop-gap measures.

"Climate intervention is no substitute for reductions in carbon dioxide emissions and adaptation efforts aimed at reducing the negative consequences of climate change," concluded a two-volume study released by the National Academy of Sciences in 2015. "However, as our planet enters a period of changing climate never before experienced in recorded human history, interest is growing in the potential for deliberate intervention in the climate system to counter climate change."

Strategies to reflect more solar radiation, it added, "could rapidly cool the planet's surface but pose environmental and other risks that are not well

understood and therefore should not be deployed at climate-altering scales; more research is needed to determine if [such] approaches could be viable in the future.”

In 2013, the American Meteorological Society adopted a policy statement, which declared that climate engineering “must be viewed with caution because manipulating the Earth system has considerable potential to trigger adverse and unpredictable consequences.”

Among those consequences could be severe weather changes for different nations and peoples, “thus raising legal, ethical, diplomatic, and national security concerns.” For example, shifting storm and precipitation patterns could dry out some regions and promote famines while subjecting others to devastating floods. The end result might not seem so promising to Gingrich if the Midwest turned into a dust bowl.

Researchers have also warned that one popular proposal – lacing the upper atmosphere with reflective sulfur dioxide particles – could deplete the Earth’s ozone layer, increasing the penetration of destructive ultraviolet radiation.

Tinkering with the atmosphere to reflect solar radiation could also “distract the public and policy makers from critically needed efforts to reduce greenhouse gas emissions and build society’s capacity to deal with unavoidable climate impacts,” the AMS statement continued.

If CO<sub>2</sub> concentrations in the atmosphere were allowed to grow, continued ocean acidification would have a devastating effect on biological systems. And if the world ever let up on its solar radiation management, for whatever reason, global warming would rapidly accelerate in the carbon-rich atmosphere.

### **Who Would Decide?**

Perhaps the single biggest obstacle to climate engineering is not technical but political: who would govern its deployment? Could a mad billionaire take matters into his own hands? Could rogue nations weaponize the technology, trying to fine tune solar radiation to disrupt the climate of their enemies?

Rutgers University climatologist Alan Robock has even warned about the increased risk of nuclear war: “Because if countries can’t agree on what the temperature should be, and somebody is mad at somebody else for controlling their climate, the situation could escalate into hostilities.”

Harvard physicist David Keith, one of the scientific community’s leading proponents of further climate engineering research, insists that the rapid pace of climate change – and the failure of governments to address it in time – make

it imperative to look seriously at every option for preventing runaway global warming.

But he and his colleagues are quick to agree with critics that “fear of solar geoengineering is justified” and that “it would be reckless to deploy solar geoengineering based on today’s limited research.” While stoutly defending the need for more research, they add, “if Trump were to push solar geoengineering while gutting climate science, we believe the only appropriate response is active resistance.”

**Jonathan Marshall is author of “Global Warming’s Threat to Trump’s Mar-a-Lago,” “Dangerous Denial of Global Warming,” “To Fight Global Warming, Canada Ponders a Carbon Tax,” and “Global Warming Adds to Mideast Hot Zone.”**

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## US Media’s Global Warming Denialism

**Exclusive:** Besides nuclear war, arguably the greatest threat to human civilization is global warming, but the U.S. news media virtually ignored the issue in 2016, bowing to economic and political pressures, writes Jonathan Marshall.

By Jonathan Marshall

Emperor Nero may (or may not) have fiddled while Rome burned, but commercial U.S. TV networks definitely fiddled last year on climate coverage while the Earth grew dangerously hot.

An annual climate report issued this month by the World Meteorological Organization confirms that average global temperatures and global sea levels continued their inexorable rise in 2016, setting new records. Global sea ice dropped to an “unprecedented” extent. Extreme weather conditions, probably aggravated by climate disruption, displaced hundreds of thousands of people, left millions hungry, and caused “severe economic damage.”

Yet in the midst of such frightening changes, and a national presidential campaign with enormous consequences for U.S. climate policy, the four major broadcast networks – ABC, CBS, NBC, and Fox News Sunday – significantly *decreased* their coverage of climate issues on evening and Sunday news programs, according to a new analysis by Media Matters. Television programs like these are

the major source of news for 57 percent of adult Americans.

The four networks devoted a mere 50 minutes on their evening and Sunday news programs to climate change in all of 2016. That was a two-thirds *drop* from the meager time they gave to perhaps the most important issue of our time in 2015. (These figures reflect deliberate coverage by the networks, not incidental mentions of climate by talk show guests.)

Remarkably, ABC managed to beat even Fox for the least climate coverage last year – only six minutes (down from 13 in 2015). Fox provided a grand seven minutes of coverage. CBS topped the group with 27 minutes, but that was still a sharp drop from the 45 minutes it devoted in 2015.

The networks can hardly claim there was nothing of substance to cover. Audiences love news about political controversy, weather, and disasters – and the issue of climate disruption provided all three. The 2016 election, for example, offered a stark and highly controversial choice between Donald Trump, who dismissed global warming as a “hoax” and promised to revive dirty coal as a fuel of choice in the United States, and Hillary Clinton, who supported major new investments in clean energy.

Yet the major TV network news programs “did not air a single segment informing viewers of what to expect on climate change and climate-related policies or issues under a Trump or Clinton administration,” according to Media Matters.

Similarly, their reporters did not ask even one question about climate change during all of last year’s presidential and vice presidential debates. Instead, they waited until *after* the election to inform viewers about how the country’s vote for Trump would affect the future of climate policy.

Media Matters notes that plenty of other climate-related stories also cried out for attention last year, including, “extreme weather events tied to climate change, like Hurricane Matthew and the record-breaking rainfall and flooding in Louisiana (which the American Red Cross described as ‘the worst natural disaster to strike the United States since Superstorm Sandy’); the signing of the Paris climate agreement and the U.N. climate summit in Morocco; the official announcement from NASA and the National Oceanic and Atmospheric Administration that 2015 was the hottest year on record by far; and investigations by state attorneys general into whether ExxonMobil committed fraud by misleading the public on climate change.”

### **Ignoring Links**

Yet not once last year did NBC or Fox report on the link between climate disruption and extreme weather, such as the record rainfall in Louisiana or the

devastating wildfires that consumed more than 100,000 acres across seven states in the Southeast. ABC gave the topic only one news segment.

Fox News Sunday was the only show to address the climate context for the fight by Native American tribes to block construction of the Dakota Access oil pipeline. Several networks offered slightly more coverage of the climate issues surrounding the Keystone XL pipeline, which will transport heavy tar sands oil from Canada, but ABC managed to ignore that topic as well. (The State Department previously reported that completion of Keystone could increase annual greenhouse gas emissions by as much as 27 billion metric tons per year, the equivalent of adding several million passenger vehicles to the roads.)

The Sunday shows did not invite any scientists to discuss climate issues last year. And aside from NBC *Nightly News*, no commercial network covered the link between climate change and public health, including the spread of mosquito-borne diseases like the Zika virus.

PBS *NewsHour* crushed the competition in terms of the frequency, length, and seriousness of its climate coverage. It was the only show to inform voters about the policy impacts of a Trump or Clinton presidency *before* the election. It ran 18 segments on climate science, compared to 11 on all the other evening news shows combined. Perhaps not coincidentally, the Trump administration proposes eliminating funding for the Corporation for Public Broadcasting, which supports the *NewsHour*.

The coverage choices of America's most-watched networks have great ramifications, starting with the election of climate denier Donald Trump. His choice as EPA administrator, Scott Pruitt, is a notorious climate denier, and is surrounding himself with former aides to Oklahoma Senator James Inhofe, an even more notorious denier. His Energy Secretary, Rick Perry, notoriously favored closing that agency altogether. President Trump issued executive orders reviving the Dakota Access and Keystone XL pipelines. He eliminated references to global warming on the White House web site.

The Trump administration also proposes killing the EPA's popular Energy Star program, which helps consumers save money by choosing more energy efficient appliances. His budget also would wipe out clean-tech research and development programs at the Department of Energy.

This week, President Trump plans to sign an executive order instructing the EPA to consider repealing the Clean Power Plan, which aims to reduce greenhouse gas emissions from power plants. His order reportedly will also encourage coal-mining leases on public lands, ease oil and gas drilling rules, and direct agencies to find ways to promote more energy production.

These actions not only fly in the face of science, they also run counter to his promises to create new jobs. A new Sierra Club analysis finds that across the nation, “clean energy jobs outnumber all fossil fuel jobs by over 2.5 to 1, and they exceed all jobs in coal and gas by 5 to 1.”

In the long run, nothing the Trump administration does about health insurance, tax reform, or military spending – short of getting us into nuclear war – will matter nearly as much as its determined efforts to prevent global action on climate disruption.

“We are moving into uncharted territory at a frightening speed,” warned Michel Jarraud, the secretary general of the World Meteorological Organization. “Every year we report a new record in greenhouse gas concentrations. Every year we say that time is running out. We have to act now to slash greenhouse gas emissions if we are to have a chance to keep the increase in temperatures to manageable levels.”

Jarraud issued that plea nearly a year and a half ago. Time is, indeed, running out.

**Jonathan Marshall is author of “Global Warming’s Threat to Trump’s Mar-a-Lago,” “Dangerous Denial of Global Warming,” “To Fight Global Warming, Canada Ponders a Carbon Tax,” and “Global Warming Adds to Mideast Hot Zone.”**

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