

Atlanta Urban Debate League

Starter Evidence Packet

Offshore Wind Affirmative and Negative

Topic – Resolved: The United States federal government should substantially increase its non-military exploration and/or development of the Earth’s oceans.



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*****How To*****

Speeches and Speech Order

There are eight total speeches in a debate round. Each debater gives two speeches: one “constructive” and one “rebuttal.” The speech order looks like this:

Speech Cheat Sheet

Speech Order and Responsibilities

		<i>(all speech times in minutes)</i>		
		Jr. High	H.S.	College
<u>CONSTRUCTIVE SPEECHES</u>				
1AC — Read the case and plan.	4/5	8	9	
CX — 2NC asks the questions	2	3	3	
1NC — Makes all the major negative arguments (disadvantages, case arguments, etc.)	4	8	9	
CX — 1AC asks the questions	2	3	3	
2AC — Answer ALL negative arguments. Rebuild and strengthen the case.	4	8	9	
Point out arguments that the negative has not attacked.				
CX — 1NC asks the questions	2	3	3	
2NC — Present any additional case arguments not covered by 1NC.	4	8	9	
Remember to take only part of the negative arguments — leave some for the 1NR speech				
<u>REBUTTAL SPEECHES</u>				
1NR — Present all other negative arguments not covered in the 2NC. Do not present.	2	5	6	
the same arguments as your partner. Decide ahead of time who will cover which arguments.				
1AR — Answer ALL of the negative arguments from both the 2NC and the 1NR.	2	5	6	
Any dropped argument could mean a negative victory.				
2NR — Pick a few arguments that you think the negative side is winning and concentrate	2	5	6	
on those. Tell the judge exactly why to vote for you. Tell the judge why the negative arguments outweigh the arguments of the affirmative				
2AR — Respond to negative arguments. Point out any arguments that have been dropped	2	5	6	
by the negative team. Tell the judge why you win. Tell the judge why the affirmative				

The debater who gives the 1AC also gives the 1AR, and the debater who gives the 1NC gives the 1NR. So, each debater can think of themselves as the 1A (the person who gives the 1AC and 1AR), 1N, 2A, or 2N, depending on their position in the debate.

Because the 2nd speaker (2A or 2N) gives the last speech, they're generally considered to be the “expert” for their side. Most teams have one partner give the 2A and the other partner 2N, so that each debater can focus on becoming an expert on one side of the debate.

Constructive Speeches

Why have constructives?

At the end of the debate, the judge makes a decision based on which of the final speeches are more persuasive: the 2NR and the 2AR. So it's reasonable to ask: if only the last two speeches matter, why have the other six? There are at least three answers to this question.

First, for an argument to be made in the 2NR or 2AR, it must have been present in the previous speeches (judges will discount 2NR or 2AR arguments that are “new.”)

Second, the constructives are an opportunity to read evidence that can then be referenced in later speeches. While it isn't always necessary to cite evidence, doing so can often increase the credibility of your arguments.

Third, debaters can use the constructives to make a wide variety of arguments. To understand why this is valuable, consider the different approaches of two hypothetical affirmative teams: Team Rondo and Team LeBron.

In the 2AC, Team Rondo makes six arguments against the disadvantage. The negative answers four of these arguments very well, but answers two of the arguments poorly. In the rebuttals, Team Rondo takes advantage of this mistake by only talking about the arguments that were answered poorly.

In the 2AC, Team LeBron makes two arguments against the disadvantage. Because the negative has less arguments to worry about, they answer both very well; and since only two arguments were made in the 2AC, Team LeBron is only able to talk about these two arguments in the rebuttals.

Team Rondo and Team LeBron may end up talking about the same two arguments in the 2AR, but because Team Rondo made diverse arguments in the constructives, they've put the negative in a more difficult position, and their 2AR arguments are likely to be much more persuasive to the judge.

What are blocks? Are they really, really, really important?

To answer the second question: yes, blocks are really, really really, important.

To answer the first question: blocks are pre-written and pre-organized responses to common arguments. Since there are only a few big arguments in the packet, you'll be debating the same arguments again and again: and since you'll be debating the same arguments again and again, it's important to think through how you'll respond to them.

Good blocks include both evidence from articles and analytical arguments. For instance: a 1NC block against the global warming advantage to the offshore wind aff might include evidence from two articles in the packet, along with several analytical arguments that you come up with on your own. Similarly, a 2AC block against the Economy disadvantage might include several articles and several analytics.

Constructive Speeches

Once a block is written, you can use it in every debate where you face a given argument. Every time the 1NC reads an Economy disadvantage, you can read your 2AC Economy block in response. This saves preparation time in the debate, ensures that you know your arguments well, and gives you time to choose the best arguments against the disadvantage.

Blocks are most important for the 1NC and 2AC, but you can make blocks for any speech other than the 1AC. For instance, there are only so many possible affirmative answers to the Economy disadvantage, so it's reasonable to write out a 2NC/1NR block to each in advance to each argument.

Finally, blocks can make it easy to adapt and improve your arguments based on experience and judge commentary. If a judge has a comment about a particular argument you made, it's easy to adjust that argument in the block so that it can be made more effectively in future debates.

What would a block look like?

Imagine the 1AC argues that schools should devote more time and resources to gym class, because this would improve students' health. The 1NC responds with a disadvantage that says that more gym class would trade off with time in math and English classes, decreasing how much students learn. Here's what a 2AC block to the disadvantage might look like:

- 1. Our advantage is more important than their disadvantage – more health means that students live longer and better lives.**
- 2. You have to be healthy before you can learn – more gym class means that students will do more with the limited time they have in math and English classes. They'll have more of an opportunity to clear their minds and will have more energy in general.**
- 3. Focusing on quality instructional time in math and English is more important than just increasing the amount of time students would spend in them. According to Elena Silver, a senior policy analyst at Education Sector, “Research reveals a complicated relationship between time and learning and suggests that improving the quality of instructional time is at least as important as increasing the quantity of time in school.” They haven't proven any relationship between spending more time in class and doing better academically.**

Then, any time you hear this disadvantage, you can read that three-point block. If you think of new or better arguments, you can add them to the block in the future.

Rebuttal Speeches

Extending arguments

An “extended” argument is an argument made earlier in a debate that's made again in a team's next speech. An argument can be extended from the 1AC to the 2AC, the 2AC to the 1AR, the 1AR to the 2AR, the 1NC to the 2NC/1NR, or the 2NC/1NR to the 2NR.

How is extending an argument different from repeating yourself? Good extensions contain three elements: an explanation, an impact, and a rebuttal of the other team's arguments.

Explanations are a summary of a previous argument you've made. The best explanations include both a claim (what is our argument?) and a warrant (how do we know that argument is true?)

“Impacting” an argument means explaining how that argument affects the debate as a whole. When impacting an argument, ask yourself: if we win this argument, what does it mean for the debate?

Rebutting the other team's arguments can take several forms. If the other team reads a piece of evidence to answer your piece of evidence, you should compare evidence, either by explaining why your evidence is good or why the other team's evidence is flawed (or, ideally, both). At other points, you may want to argue that the other team's argument or evidence doesn't apply to your original argument.

Here's what a 2NC extension of the Hanson article might look like:

“Extend our Hanson evidence from the 1NC – the plan hurts the economy by spending money and diverting investment from more productive parts of the economy. **[explanation]** This is important because an economic decline would increase job loss and poverty around the world **[impact]**. They say that offshore wind helps the economy by creating jobs, but jobs are never created, only diverted from other parts of the economy – they take away more productive jobs in the oil and natural gas industries.”

Impact analysis

“Impact analysis,” also known as “impact comparison,” is the process of comparing reasons why the plan is good with reasons why the plan is bad. For instance, the affirmative might argue that the plan solves global warming. At the same time, the negative might argue that the plan would hurt the global economy. Which is more important: global warming or the economy? Since whoever wins this argument will have a big advantage in the debate, impact analysis is a vital part of rebuttals.

There are four general reasons why one impact might be more important than other.

1. Magnitude – how big is an impact? This includes both how many people an impact affects and the way in which it affects them.

Rebuttal Speeches

2. Risk – how likely is the impact to occur? Do we know that the impact is going to happen (maybe because it's already happening), or is a hypothetical future harm?

3. Timeframe – in how long will the impact occur? Impacts that happen farther into the future may be less likely to occur, since it's often more difficult to make predictions over the long term.

4. Turns the impact/solves the impact – how does your impact interact with the other team's impact? For instance: if the affirmative has a global warming impact and the negative has an economy, the affirmative might say: “global warming would hurt the economy more in the long run by causing natural disasters and mass refugees.”

Turns the impact/solves the impact arguments are especially powerful because teams that win them effectively win both their impact and the other team's impact.

The 1AR

The primary job of the 1AR are to extend the best arguments from the 2AC and to rebut the negative's responses. As the most time pressured speech in the debate, the 1AR must quickly and efficiently make a variety of arguments.

The best way to deal with time pressure in the 1AR is to narrow the debate wherever possible. On disadvantages and off-case arguments, it isn't necessary to extend more than three 2AC arguments into the 1AR. The 1AR should answer every negative argument on the advantages they plan to win, but the 1AR can choose to “kick” an advantage if they want to save time.

The 2NR

The primary jobs of the 2NR are, first, to “write the ballot for the judge,” and second, to answer the 1AR's arguments. Writing the ballot for the judge means explaining, in a big-picture way, why you win the debate. One way to force yourself to do this is to start every 2NR with the words “the most important thing in the debate is...” and then to explain which issues the judge should look to first in deciding the debate. Without an explanation of what's most important, judges won't know where to start in deciding the debate and will assume that everything is equally important. Impact analysis is often the best place to direct a judge's attention in the 2NR.

The 2AR

As in the 2NR, the 2AR should attempt to “write the ballot for the judge.” The 2AR should start by explaining the most important issues in the debate and then proceed to explaining other important arguments and answering 2NR arguments.

Using Articles

Reading, understanding, and deploying the articles in this packet is probably the single most important thing you can do to win debates. The articles are drawn from many different perspectives on offshore wind, and make a variety of arguments on both sides. If you ever think to yourself: “how do I answer this argument?” - there's a pretty good chance you'll be able to find the answer in one of the affirmative or negative articles. The articles also allow you to use evidence to support your claims, which – when used effectively – can make your arguments much more credible than the other team's arguments.

When you're reading articles, there's a few things to look for:

1. What's the main argument in this article? What's the author trying to get across?
2. What are main reasons (warrants) the author gives for his or her arguments?
3. What are the author's qualifications? Is he or she knowledgeable about what they're writing about? Do they have a bias?
4. Are there any parts of the article that don't make sense, are weakly supported, or that contradict each other? If there are, and the other team cites from that article, you should be ready to point out why the article isn't very good.
5. When was the article written? Is it recent or old? If it's old, has anything changed in the meanwhile that would change the author's conclusion?

You can use articles by either quoting directly from them, or by paraphrasing the author's arguments. Either way, make sure you clearly refer to the author of the article and their qualifications before you explain their argument.

Alternatively, you can change the articles into format found in the evidence in the Packet Supplement. The evidence in that packet is drawn from several of the articles in this packet, but turned into a common debate format called the “card.” Cards are formatted like this [see next page]:

Using Articles

Offshore wind is too expensive and won't work – the Netherlands have already tried the plan and failed

Nelson, 11 (D. Brady Nelson, an economist, writing for The Heartland Institute, a think tank advocating for free markets. Published December 30, 2011. Available at <http://news.heartland.org/newspaper-article/2011/12/30/dutch-pull-plug-offshore-wind-subsidies>)

The nation known for its iconic windmills is throwing in the towel on offshore wind power, as Dutch officials have determined the Netherlands can no longer afford large-scale subsidies for expensive wind turbines that cannot produce electricity at economically competitive prices.

The decision is a powerful blow against renewable power advocates who have long asserted Holland proves renewable power can be practical and economical.

Offshore Wind 'Very Uncompetitive'

"Offshore wind remains a very uncompetitive option," Dutch Minister of Economic Affairs Maxime Verhagen told Wind Directions: The European Wind Industry Magazine.

"Offshore wind remains a very expensive option in the near future. The Dutch government is willing to invest in innovation to bring down the costs of offshore wind energy, but prices must come down considerably before large scale investments can again be supported," Verhagen was quoted as saying.

Despite large subsidies from the Dutch government, wind power provides merely 4 percent of Dutch electricity. With government pulling the plug on subsidies for offshore wind power generation, that number is likely to shrink further.

Offshore Cost Factors

Winds off the coast of the Netherlands and other nations often are more suitable for wind power generation than land-based sites, but it is more expensive to build and maintain wind farms offshore than on land. Drilling the seabed to support turbines is difficult and expensive; salt water and salt air corrode offshore turbines very rapidly; accessing offshore turbines for regular maintenance is costly; and connecting offshore turbines to the power grid presents unique challenges.

The main parts of a card are the "tag," the "cite," and the "evidence."

The "tag" is a brief explanation of the argument that's made in the article: here, it's **"offshore wind is too expensive and won't work – the Netherlands have already tried the plan and failed."**

The "cite" is information about the author who wrote the card. Typically, only the author's last name and date are read out loud: the rest is only made available as reference information. Here, the cite is: **Nelson, 11** (D. Brady Nelson, an economist, writing for The Heartland Institute, a think tank advocating for free markets. Published December 30, 2011. Available at <http://news.heartland.org/newspaper-article/2011/12/30/dutch-pull-plug-offshore-wind-subsidies>)

Finally, the evidence is the text of the article itself. The parts of the article that are most important are underlined and read as a direct quote, while the . As in the example above, it's acceptable to skip around in which parts of the article you read in order to highlight its most important parts (though you should always keep track of, and let the other team know if they ask, which parts of the article you've read).

*****Sample 1AC and 1NC*****

How To Use This Section

What's in this Section?

This section contains:

A pre-written 1AC (offshore wind)

A pre-written 1NC disadvantage (the economy disadvantage)

And one pre-written 1NC case answer (offshore wind won't work)

Each of these arguments are drawn exclusively from the articles later in the packet: the only difference is that they're organized and converted into a “card” form.

The arguments in this section can win debates, but over the long term, they'll lose to arguments drawn from the articles in the packet. You'll need all of those articles in order to fully answer the disadvantage, read different advantages and disadvantages, and support the basic arguments found here. As the year goes on, you should write your own 1ACs and 1NCs based on the articles as well as using them to support arguments in the 2AC and 2NC.

The Affirmative

The affirmative plan is for the federal government give incentives for offshore wind. The advantage is global warming: the affirmative argues that offshore wind is plentiful, efficient, and clean, and can power a third of the U.S. That helps mitigate the worst effects of global warming, which will otherwise cause natural disasters that lead millions of people to lose their homes and become refugees.

The Economy Disadvantage

The economy disadvantage argues that the economy, which is fragile now, will be severely harmed by investment in offshore wind. The Hanson evidence gives several reasons for this, including cost, an increase in electricity prices, and a tradeoff with more important parts of the economy. The Bradford evidence impacts this by arguing that an economic decline now would threaten to throw 900 million people around the world into poverty.

Sample 1st Affirmative Constructive (1AC)

Contention 1 is Inherency –

The PTC is a crucial incentive for wind energy, but Congress allowed it to expire in 2013

Union of Concerned Scientists, 14 (An environmental advocacy organization composed of scientists and non-scientists. “Production Tax Credit for Renewable Energy,” 1/31/14. http://www.ucsusa.org/clean_energy/smart-energy-solutions/increase-renewables/production-tax-credit-for.html)

The Production Tax Credit (PTC) is a federal incentive that provides financial support for the development of renewable energy facilities.

Companies that generate electricity from wind, geothermal, and “closed-loop” bioenergy (using dedicated energy crops) are eligible for a federal PTC, which provides a 2.3-cent per kilowatt-hour (kWh) incentive for the first ten years of a renewable energy facility's operation.

Other technologies, such as “open-loop” biomass (using farm and forest wastes rather than dedicated energy crops), efficiency upgrades and capacity additions for existing hydroelectric facilities, small irrigation systems, landfill gas, and municipal solid waste (MSW), receive a lesser value tax credit of 1.1 cents per kWh.

The production tax credit for wind and other renewable energy technologies expired at the end of 2013.

However, an important new provision was included in the American Taxpayer Relief Act of 2012 (enacted in January 2013) allowing eligible projects that were under construction before January 1, 2014 to qualify for the PTC. The IRS issued guidelines in April 2013, and again in September 2013, clarifying several issues around what is needed to qualify as under construction.

Contention 2 is our advantage – Global Warming

Global warming is real, caused by humans, and happening now. There is no other explanation for heat waves and droughts sweeping the globe

Hansen, 12 (James, former director of the NASA Goddard Institute for Space Studies, leading climate science expert.

“Climate Change is Here – and Worse than We Thought,” Washington Post, 8-3-12.

http://www.washingtonpost.com/opinions/climate-change-is-here--and-worse-than-we-thought/2012/08/03/6ae604c2-dd90-11e1-8e43-4a3c4375504a_story.html)

In a new analysis of the past six decades of global temperatures, which will be published Monday, my colleagues and I have revealed a stunning increase in the frequency of extremely hot summers, with deeply troubling ramifications for not only our future but also for our present.

This is not a climate model or a prediction but actual observations of weather events and temperatures that have happened. Our analysis shows that it is no longer enough to say that global warming will increase the likelihood of extreme weather and to repeat the caveat that no individual weather event can be directly linked to climate change. To the contrary, our analysis shows that, for the extreme hot weather of the recent past, there is virtually no explanation other than climate change.

The deadly European heat wave of 2003, the fiery Russian heat wave of 2010 and catastrophic droughts in Texas and Oklahoma last year can each be attributed to climate change. And once the data are gathered in a few weeks’ time, it’s likely that the same will be true for the extremely hot summer the United States is suffering through right now.

These weather events are not simply an example of what climate change could bring. They are caused by climate change. The odds that natural variability created these extremes are minuscule, vanishingly small. To count on those odds would be like quitting your job and playing the lottery every morning to pay the bills.

Sample 1st Affirmative Constructive (1AC)

Natural disasters from global warming will lead to millions of climate refugees. The U.S. has a moral obligation to address the impact of its carbon emissions on other countries

Center for American Progress, 07 (Left-wing think tank, “Global warming will spur migration,” 7-3-07.

<http://americanprogress.org/issues/green/news/2007/07/03/3295/climate-refugees-global-warming-will-spur-migration/>)

Debate over comprehensive immigration reform may have stalled last week in the Senate, but there’s one key concern that’s just warming up: the exacerbating effect that droughts, severe weather, food shortages, disease, and sea level rises will have on migration.

Worldwide environmental, economic, and social consequences from existing atmospheric greenhouse gas concentrations, even if we were to cease emissions today, will drive migration around the globe. Attention to the migration pressures resulting from global warming should therefore be an essential aspect of a long-term U.S. immigration plan. This will not only focus efforts on helping populations adapt to climate change, but also encourage thought on how to alleviate migration pressures.

According to the International Federation of Red Cross, climate change disasters are already a bigger cause of population displacement than war and persecution. Estimates of climate refugees currently range from 25 to 50 million. And this April, global scientific experts and former U.S. military leaders warned in two reports—the Intergovernmental Panel on Climate Change’s Fourth Assessment and the CNA Corporation’s “National Security and the Threat of Climate Change”—that the effects of global warming are likely to trigger conflict and mass migrations of affected people.

Large numbers of immigrants to the United States currently come from Mexico and the Caribbean, and with increases in storm intensity, stress on natural resources, and rising sea levels—side effects already affecting these regions—immigration levels will only increase. Northern Mexico’s severe water shortages will drive immigration into the United States despite the increasingly treacherous border terrain. The damage caused by storms and rising sea levels in the coastal areas of the Caribbean Islands—where 60 percent of the population live—will likewise increase the flow of immigrants from the region and generate political tension.

The United States cannot ignore the potentially heightened flow of displaced peoples as it continues to discuss immigration reform. Because we shoulder a large portion of the responsibility for the current levels of global warming pollution in the atmosphere, we have a moral responsibility to invest in solutions that will help ourselves and the world—particularly poor countries—adapt and prevent the growing implications of climate change.

The countries least responsible for greenhouse gas emissions are frequently the most vulnerable to global warming’s earliest effects. Developing countries bear minimal responsibility for climate change because they have little industry and produce relatively small amounts of pollution. But their populations—often the poorest of the world’s people—are more likely to occupy vulnerable locations such as coast lines, flood plains, and steep slopes and live in structures unable to withstand severe weather events. The governments of these poor countries therefore carry the largest burden associated with climate change and are ill-equipped to recover from disasters and meet the basic needs of their citizens.

The United States therefore owes a “climate debt” that it needs to pay back to these poor countries. China may have recently surpassed the United States in terms of overall greenhouse gas emissions, but the United States has still had the largest historical greenhouse gas emissions as well as the greatest per capita emissions. Each American citizen on average produces four times the amount of greenhouse gas as an average Chinese citizen. And, unfortunately, because greenhouse gases can persist in the atmosphere for hundreds of years, the world will be experiencing the negative effects of these disproportionately large U.S. emissions for years to come.

Sample 1st Affirmative Constructive (1AC)

Offshore wind is the key renewable energy source – it can power a third of the country

Burger, 12 (Andrew, independent environmental journalist. “Offshore Wind Turbines Can Power the Entire East Coast,” 9-25-12. <http://www.triplepundit.com/2012/09/atlantic-offshore-wind-turbines/>)

Offshore winds off the U.S. Atlantic coast could yield enough clean, renewable electrical power for at least one-third of the entire U.S., or the entire East Coast, from Maine to Florida, according to a Stanford University study released Sept. 14. That includes some of the country’s largest urban centers, as well as the nation’s capital.

The Stanford research team employed a state-of-the-art offshore wind power model to simulate the installation of 144,000 5-megawatt wind turbines of the type typically found in European offshore wind farms at various ocean depths and distances from shore from Florida to Maine, concentrating them in the typically hurricane-free stretch of the Atlantic between Maine and Virginia, according to a Stanford University News report.

Now’s the time for U.S. offshore wind power development

They found that offshore winds off the U.S. East Coast produce between 965-1,372-terawatt-hours of electricity per year, enough to meet 1/3 of U.S. electricity demand, or all the power needs of the entire East Coast, from Maine to Florida. The study, “U.S. East Coast Offshore Wind Energy Resources and Their Relationship to Peak-Time Electricity Demand,” is available here.

In addition to adding significantly to the U.S. East Coast offshore wind power potential, the researchers found that East Coast offshore wind energy peaks in the middle of the day. That coincides exactly with peak power demands.

“We knew there was a lot of wind out there, but this is the first actual quantification of the total resource and the time of day that the resource peaks,” commented Stanford University professor of civil and environmental engineering Mark Z. Jacobson, who directed the research project. “This provides practical information to wind farm developers about the best areas to place turbines.”

Added research team member and recent Atmosphere/Energy PhD program graduate Mike Dvorak, “People mistakenly think that wind energy is not useful because output from most land-based turbines peaks in the late evening/early morning, when electricity demand is low. The real value of offshore wind energy is that it often peaks when we need the most electricity – during the middle of the day.”

So, we propose the following plan: The United States federal government should offer a long-term production tax credit for wind energy generated off the coast of the Atlantic Ocean.

Sample 1st Affirmative Constructive (1AC)

Contention 3 is Solvency -

The PTC is the single most important incentive for developing wind energy – a long-term extension of the PTC will spark massive investment in wind

Union of Concerned Scientists, 14 (An environmental advocacy organization composed of scientists and non-scientists. “Production Tax Credit for Renewable Energy,” 1/31/14. http://www.ucsusa.org/clean_energy/smart-energy-solutions/increase-renewables/production-tax-credit-for.html)

Combined with state renewable electricity standards, the PTC has been a major driver of wind power development in the United States. This development has resulted in significant economic benefits, according to the U.S. Department of Energy:

Between 2007 and 2012, U.S. wind capacity more than tripled, representing an annual average investment of \$18 billion.

More than 550 manufacturing facilities located in 44 states produce 72 percent of the wind turbines and components installed in the United States, up from 25 percent in 2006.

The cost of generating electricity from wind has fallen by more than 40 percent over the past three years.

But Congress has repeatedly gone back and forth between expiring and extending the PTC, which has wreaked havoc on the wind industry.

Originally enacted as part of the Energy Policy Act of 1992, Congress has extended the provision five times and has allowed it to expire on five occasions. This "on-again/off-again" status has resulted in a boom-bust cycle of development. In the years following expiration, installations dropped between 76 and 93 percent, with corresponding job losses (see Figure below).

The cycle begins with the industry experiencing strong growth in development around the country while the PTC is firmly in place, and in the years leading up to the PTC's expiration. Lapses in the PTC then cause a dramatic slowdown in the implementation of planned wind projects and layoffs at wind companies and manufacturing facilities.

Upon restoration, the wind power industry takes time to regain its footing, and then experiences strong growth until the tax credits expire. And so on.

Short-term extensions of the PTC are insufficient for sustaining the long-term growth of renewable energy. The planning and permitting process for new wind facilities can take up to two years or longer to complete. As a result, many renewable energy developers that depend on the PTC to improve a facility's cost effectiveness may hesitate to start a new project due to the uncertainty that the credit will still be available to them when the project is completed.

Last-minute PTC extensions don't serve anyone well either. The pending uncertainty threatens access to financing and stalls plans for development, jeopardizing the tens of thousands of jobs in the industry. This uncertainty was clearly evident in 2013 when the PTC was extended two days after the 2012 expiration date and U.S. wind development hit its lowest level since 2004. However, a recent study by the American Wind Energy Association (AWEA) shows that at least 12,000 MW of wind capacity is currently under construction and 5,200 MW of capacity that signed power purchase agreements in 2013 could be eligible for the PTC under the new IRS guidelines.

A long-term extension of the PTC is needed to bring more stability to the wind industry, and help level the playing field with fossil fuels and nuclear power— industries that have received far greater taxpayer support for decades.

But most importantly, the PTC works. With it in place, wind power has dramatically increased, reducing our reliance on fossil fuels, driving innovation and economic development, lowering costs, and providing important environmental benefits— including carbon reductions.

Sample 1st Affirmative Constructive (1AC)

A PTC for offshore wind will create jobs and solve global warming

Environment Georgia, 12 (Georgia environmental advocacy group. “Georgia at the Back of the Pack in Race for Offshore Wind” Published 9/13/12. <http://www.environmentgeorgia.org/news/gae/georgia-back-pack-race-offshore-wind>)

As the clock ticks down for Congress to extend critical tax credits for wind power, a new report shows that with a step-up in state and federal leadership, Georgia could realize the benefits of offshore wind.

Georgia has immense untapped offshore wind energy resources, and the new report “The Turning Point for Atlantic Offshore Wind Energy,” written by the National Wildlife Federation and released today in Atlanta by Environment Georgia identifies key building blocks that local, state, and federal officials have put in place to usher in a future with offshore wind, including admission of Georgia into the Atlantic States Offshore Wind Consortium.

“Essentially, Georgia has several dozen power plants waiting to be tapped off our coast, said Jennette Gayer, Policy Advocate with Environment Georgia. “Unfortunately, when it comes to tapping that potential, we are behind. To keep us in this race and make sure we can take advantage of this boon in pollution-free energy and local jobs our leaders must act now.”

Environment Georgia called on leaders in Congress to extend the offshore wind tax credit before it expires at the end of the year. They also urged Governor Nathan Deal to take steps to add Georgia to the Atlantic States Offshore Wind Consortium, South Carolina, Georgia and Florida are the only states with Atlantic wind potential not currently part of this Consortium designed to make wind development off the Atlantic Coast more efficient and coordinated. The Atlantic coast is an ideal location for offshore wind energy because of its high electricity demand and population density along the coast. Along the Atlantic coast alone, reaching the Department of Energy’s (DOE) goal of 54 gigawatts of offshore wind power would reduce carbon pollution by the equivalent of taking roughly 18 million cars off the road. Meeting this benchmark would also generate \$200 billion in new economic activity while creating more than 43,000 permanent, high-paying jobs in manufacturing, construction, engineering, operations, and maintenance, according to the National Renewable Energy Laboratory.

Sample 1st Negative Constructive (1NC) Economy Disadvantage

Right now, the economy is improving, but remains fragile

Cook, 14 (Charlie, Editor and Publisher of The Cook Political Report, and political analyst for National Journal. Published May 12, 2014. Available at <http://www.nationaljournal.com/off-to-the-races/our-fragile-economy-still-needs-time-to-gather-its-strength-20140512>)

Americans remain pretty pessimistic about the economy. The National Bureau of Economic Research calculates that the most recent recession began in December 2007 and ended in June 2009. But that is certainly news to most Americans. In a March NBC News/Wall Street Journal poll, 57 percent of respondents said they believe we are still in a recession, while 41 percent said we are not. Indeed, in the seven times that NBC/WSJ pollsters have asked the question since the latter half of 2001, a majority of Americans have felt that we were in a recession.

While consumer confidence is on the rise and pretty close to the highest it has been since the last recession began, we are nowhere near the levels of optimism and comfort that Americans felt during the period of 1992 until this latest recession began in late 2007. We feel better, but nowhere near good. The recent economic reports that we only had a one-tenth of a percentage point increase in the real gross domestic product is attributed to an unusually harsh winter; but a vibrant economy doesn't sustain that kind of hit from a tough winter alone. As Mesirow Financial's Chief Economist Diane Swonk put it in a recent report to clients: "The economy came to a virtual standstill in the first quarter [of 2014], adding insult to injury to an economy still struggling to recover." She added that it was "reflective of a fundamental weakening in a recovery that was already compromised." This was and remains a very fragile economy.

The plan disrupts this delicate balance – a PTC for wind harms the economy by spending money and diverting investment from more important priorities

Hanson, 14 (Christine Harbin, Federal Issues Campaign Manager for Americans for Prosperity, a conservative political advocacy group. Published in Forbes on June 18, 2014. Available at <http://www.forbes.com/sites/realspin/2014/06/18/support-for-wind-subsidies-divides-republicans/>)

In arguing that that tax credits are needed to boost employment in the wind industry, proponents overlook what the rest of the economy gives up in exchange for them. In reality the PTC is a net jobs loser—it distracts labor and capital away from more efficient areas in the economy and slows over all growth. Wind turbine makers may be able to plump up their payrolls—just as any tax handout will boost employment in a targeted industry—but the rest of the economy suffers as a result. Any boost in employment among wind turbine makers is inherently temporary.

Compared to other forms of electricity generation, wind power is far from cost competitive. The wind PTC is an outrageously large subsidy, leading to giant disruptions in the energy market. At \$23 per megawatt-hour, the PTC is worth half (and sometimes even more) of the entire wholesale price of electricity in many parts of the country. In fact, the PTC is so lavish and anti-cost-competitive that wind power producers often bid negative prices into electrical grid, just so they can collect the subsidy. They literally pay utilities to take their electricity. Lawmakers should oppose resurrecting this tax break for wind energy because it's costly, and increasingly so—the PTC cost \$12 billion in 2014, up from a historical average of \$5 billion per year. In practice, targeted subsidies are a tried-and-terrible way to develop new energy sources, Under President Obama's direction, the federal government has tried to prop up its favorite energy sources with targeted subsidies—tax credits, grants, loan guarantees, state-based mandates, etc.—with little to show besides slower economic growth. Too many of these pet projects have gone bankrupt and belly-up, sticking taxpayers with the bill, and failing to get the U.S. any closer to its energy goals.

Sample 1st Negative Constructive (1NC) Economy Disadvantage

The impact is enormous – another economic shock will cause 900 million people around the world to fall into poverty

Bradford, 13 (Harry, Associate Editor for HuffPost Business and HuffPost Small Business. Published in the Huffington Post on April 5, 2013. Available at http://www.huffingtonpost.com/2013/04/05/global-poverty-900-million-economic-shock_n_3022420.html)

Hundreds of millions of people worldwide are on the brink of poverty.

A recent study by the International Monetary Fund warns that as many as 900 million people could fall back into poverty in the event of an economic shock like the Great Recession. That figure is three times the size of the U.S. population.

According to the World Bank, 1.2 billion people are currently living on less than \$1.25 a day.

While the report acknowledges that progress has been to made to reduce global poverty and strengthen the world economy following the financial crisis, the world is still in a vulnerable situation.

Global unemployment, for example, is the highest it's been in two decades with 40 percent of the world's population out of work, according to the report.

And things could get much worse in the event of a macroeconomic shock, of which the Europe and U.S. are dangerously close. The recent bailout of Cyprus threw the eurozone into chaos, igniting fears that the situation could lead to the next financial crisis.

Here in the U.S., a series of automatic spending cuts know as the sequester could cost the economy hundreds of thousands of jobs. The cuts have already threatened the stability of safety nets designed to aid the nation's poorest..

The U.S. continues to fail to sustain a robust job market, adding only 88,000 jobs in March.

Sample 1st Negative Constructive (1NC) Case Answer

Offshore wind is too expensive and won't work – the Netherlands have already tried the plan and failed

Nelson, 11 (D. Brady Nelson, an economist, writing for The Heartland Institute, a think tank advocating for free markets. Published December 30, 2011. Available at <http://news.heartland.org/newspaper-article/2011/12/30/dutch-pull-plug-offshore-wind-subsidies>)

The nation known for its iconic windmills is throwing in the towel on offshore wind power, as Dutch officials have determined the Netherlands can no longer afford large-scale subsidies for expensive wind turbines that cannot produce electricity at economically competitive prices.

The decision is a powerful blow against renewable power advocates who have long asserted Holland proves renewable power can be practical and economical.

Offshore Wind 'Very Uncompetitive'

"Offshore wind remains a very uncompetitive option," Dutch Minister of Economic Affairs Maxime Verhagen told Wind Directions: The European Wind Industry Magazine.

"Offshore wind remains a very expensive option in the near future. The Dutch government is willing to invest in innovation to bring down the costs of offshore wind energy, but prices must come down considerably before large scale investments can again be supported," Verhagen was quoted as saying.

Despite large subsidies from the Dutch government, wind power provides merely 4 percent of Dutch electricity. With government pulling the plug on subsidies for offshore wind power generation, that number is likely to shrink further.

Offshore Cost Factors

Winds off the coast of the Netherlands and other nations often are more suitable for wind power generation than land-based sites, but it is more expensive to build and maintain wind farms offshore than on land. Drilling the seabed to support turbines is difficult and expensive; salt water and salt air corrode offshore turbines very rapidly; accessing offshore turbines for regular maintenance is costly; and connecting offshore turbines to the power grid presents unique challenges.

*****Templates*****

How To Use The Templates

When writing your own speeches, the templates are one way to organize the 1AC or 1NC in a way that's likely to be understandable and persuasive to your judge.

The 1AC, for example, contains a few basic parts:

1. The attention-getter: some statistic, fact, story, or other introduction that gets the judges' attention and starts to persuade them that what you're talking about is important.
2. The problem – a general outline of a problem that needs to be solved.
3. The need to act – one or two reasons why it's very important to address the problem.
4. The plan – the plan of action you're proposing, in this case offshore wind.
5. Solvency – the reason why the plan of action will successfully deal with the problem.

For each part, the text in italics represent directions for types of arguments you might want to include: you shouldn't read them out loud, but you can use them to structure your argument and make sure you're including evidence from the articles that support what you're saying. For example, if your affirmative was about pizza at AUDL tournaments, you might fill out part of your 1AC template to look like:

We begin with our First Contention – What is going on now? What is the problem?

(Short explanation) **Right now, there's not nearly enough pizza for all of the students at the tournament. According to *(author and qualifications)* Derrick Rose, a high school debater *(source and date)* at an AUDL tournament in 2014, *(direct quote from article)* “I don't even think there's enough pizza for each of us to have one slice. This is probably the worst pizza shortage I've ever seen at a tournament.” This shows that *(briefly explain in your own words why this point is important)* the food shortage at this tournament has reached desperate proportions.**

1st Affirmative Constructive (1AC) Template

Attention Getter (a surprising statistic, interesting quotation, or useful story):

We begin with our First Contention – What is going on now? What is the problem?

(Short explanation) _____

According to *(author and qualifications)* _____ in
(source and date) _____, *(direct quote from article)* _____

This shows that *(explain in your own words why this point is important)* _____

1st Affirmative Constructive (1AC) Template

Our second contention is the need to act. We have two reasons why we must act to solve this problem:

First,

(Short explanation) _____

According to *(author and qualifications)* _____ in
(source and date) _____, *(direct quote from article)* _____

This shows that *(explain in your own words why this point is important)* _____

1st Affirmative Constructive (1AC) Template

Second,

(Short explanation) _____

According to *(author and qualifications)* _____ in
(source and date) _____, *(direct quote from article)* _____

This shows that *(explain in your own words why this point is important)* _____

1st Affirmative Constructive (1AC) Template

As a result, we propose the following plan: The United States federal government should offer a long-term production tax credit for wind energy generated off the coast of the Atlantic Ocean.

Our final contention is Solvency – the reason why the plan will be successful

(Short explanation) _____

According to *(author and qualifications)* _____ in
(source and date) _____, *(direct quote from article)* _____

This shows that *(explain in your own words why this point is important)* _____

1st Negative Constructive (1NC) Template: Disadvantages

A. What's happening now - right now, things are okay because

(short

explanation) _____

According to *(author and qualifications)* _____ in
(source and date) _____, *(direct quote from article)* _____

This shows that *(explain in your own words why this point is important)* _____

B. However, the affirmative's plan will change this situation because

(short

explanation) _____

According to *(author and qualifications)* _____ in
(source and date) _____, *(direct quote from article)* _____

This shows that *(explain in your own words why this point is important)* _____

1st Negative Constructive (1NC) Template: Disadvantages

C. These changes would be disastrous and we must avoid them because

(short explanation) _____

According to *(author and qualifications)* _____ in
(source and date) _____, *(direct quote from article)* _____

1st Negative Constructive (1NC) Template: On-Case Arguments

The problems the affirmative talks about are overstated because:

1. *(short*

explanation) _____

According to *(author and qualifications)* _____ in

(source and date) _____, *(direct quote from article)* _____

This shows that *(explain in your own words why this point is important)* _____

2. *(short*

explanation) _____

According to *(author and qualifications)* _____ in

(source and date) _____, *(direct quote from article)* _____

This shows that *(explain in your own words why this point is important)* _____

1st Negative Constructive (1NC) Template: On-Case Arguments

But even if those problems did exist, the affirmative's plan can't solve them because

1. (*short explanation*) _____

According to (*author and qualifications*) _____ in
(*source and date*) _____, (*direct quote from article*) _____

This shows that (*explain in your own words why this point is important*) _____

2. (*short explanation*) _____

According to (*author and qualifications*) _____ in
(*source and date*) _____, (*direct quote from article*) _____

This shows that (*explain in your own words why this point is important*) _____

*****Affirmative and Article Summaries*****

Affirmative Summary – Offshore Wind

This affirmative argues that the United States federal government should provide a production tax credit for wind power that's generated off the coast of the United States. Right now, most energy in the United States is generated from coal: the affirmative argues that we should replace this with wind. A production tax credit is a government incentive that gives companies money based on how much wind energy they produce. Since this incentive makes wind power cheaper for companies, the affirmative argues that they'll be more likely to build offshore wind farms.

The main advantage to the affirmative is global warming: the affirmative argues that current coal-based energy emits high amounts of carbon dioxide, which will warm the global climate by several degrees. This would threaten droughts, natural disasters, and rises in sea level that would cause millions of people around the world to flee their homes. By implementing offshore wind, the affirmative argues that we would be able to transition to renewable and non-polluting energy that would avoid the worst effects of global warming.

Article Summaries – Affirmative

Affirmative Article 1

Offshore wind turbines in the Atlantic Ocean are capable of powering 1/3 of the U.S., especially big cities on the East Coast. Offshore wind has many benefits over onshore wind and can be adopted on a widespread basis with federal support.

Affirmative Article 2

The federal government supported wind energy with a production tax credit (PTC) last year, but they've failed to extend it this year. A long term extension of the PTC will produce substantial investment into wind.

Affirmative Article 3

There are substantial offshore wind resources off the coast of Georgia, but they're currently not being used. Generating offshore wind in Georgia would produce thousands of jobs in Georgia and provide a lot of clean energy.

Affirmative Article 4

Global warming will produce millions of climate refugees as a result of extreme weather, rising sea levels, and resource shortages. The United States has a moral obligation to address climate change because it's one of the primary causes, and the negative effects will largely fall on other countries.

Affirmative Article 5

Global warming is real and caused by human activity. Climate models show that the Earth is, on average, becoming warmer, and that global warming is already happening and causing negative effects.

Affirmative Article 6

Offshore wind would have major economic benefits, including the creation of 2.1 million jobs in construction and manufacturing. Offshore wind also has greater economic benefits than oil, natural gas, or onshore wind.

Article Summaries – Negative

Negative Article 1

Subsidies for wind hurt the economy by wasting money, diverting investment from more productive areas of the economy, and driving up electricity prices.

Negative Article 2

The Dutch government, long known for supporting wind power, has withdrawn their support for the wind industry because offshore wind proved to be too expensive. The article also says there was a problem with the wind not blowing sometimes, which interrupts the flow of electricity. The wind subsidies wasted millions of dollars and provided relatively little energy.

Negative Article 3

A decline in the economy would cause 900 million people to fall into poverty. 1.2 billion people currently live on less than \$1.25/day, and any further economic decline would affect them severely. Many people in the U.S. would also suffer from further economic decline, especially since hundreds of thousands of people lost their jobs recently in the federal government sequester.

Negative Article 4

The economy is showing some signs of recovery from the 2008 recession, but remains weak in many areas. Overall, the economy is fragile and vulnerable to a serious decline.

Negative Article 5

Chinese coal consumption accounts for 20% of global carbon dioxide emissions from fossil fuels. As a result, it will be very difficult to address global warming without addressing Chinese greenhouse gas emissions.

Negative Article 6

There are many reasons to believe that global warming isn't a serious problem. Even if humans are contributing to climate change, it's hard to know how much or towards what outcome. The climate is very complex and difficult to predict with certainty.

*****Affirmative Articles*****

Affirmative Plan Text

Plan: The United States federal government should offer a long-term production tax credit for wind energy generated off the coast of the Atlantic Ocean.

Affirmative Article 1: “Offshore Wind Turbines Can Power the Entire East Coast”

by Andrew Burger, independent environmental journalist, researcher, and writer. Published September 25, 2012. Available at <http://www.triplepundit.com/2012/09/atlantic-offshore-wind-turbines/>

Offshore winds off the U.S. Atlantic coast could yield enough clean, renewable electrical power for at least one-third of the entire U.S., or the entire East Coast, from Maine to Florida, according to a Stanford University study released Sept. 14. That includes some of the country’s largest urban centers, as well as the nation’s capital.

The Stanford research team employed a state-of-the-art offshore wind power model to simulate the installation of 144,000 5-megawatt wind turbines of the type typically found in European offshore wind farms at various ocean depths and distances from shore from Florida to Maine, concentrating them in the typically hurricane-free stretch of the Atlantic between Maine and Virginia, according to a Stanford University News report.

Now’s the time for U.S. offshore wind power development

They found that offshore winds off the U.S. East Coast produce between 965-1,372-terawatt-hours of electricity per year, enough to meet 1/3 of U.S. electricity demand, or all the power needs of the entire East Coast, from Maine to Florida. The study, “U.S. East Coast Offshore Wind Energy Resources and Their Relationship to Peak-Time Electricity Demand,” is available here.

In addition to adding significantly to the U.S. East Coast offshore wind power potential, the researchers found that East Coast offshore wind energy peaks in the middle of the day. That coincides exactly with peak power demands.

“We knew there was a lot of wind out there, but this is the first actual quantification of the total resource and the time of day that the resource peaks,” commented Stanford University professor of civil and environmental engineering Mark Z. Jacobson, who directed the research project. “This provides practical information to wind farm developers about the best areas to place turbines.”

Added research team member and recent Atmosphere/Energy PhD program graduate Mike Dvorak, “People mistakenly think that wind energy is not useful because output from most land-based turbines peaks in the late evening/early morning, when electricity demand is low. “The real value of offshore wind energy is that it often peaks when we need the most electricity – during the middle of the day.”

Moreover, installing even this great a number of wind turbines off the U.S. East Coast needn’t compromise ocean vistas or threaten wildlife, according to the research team. In their analysis, the researchers limited installations to just one-third of available shallow-water sites out to 30 meters depth, with two-thirds of the remaining sites out to 200 meters depth.

Their analysis highlights the real possibility and multiple benefits that could be realized by developing very large-scale offshore wind farms in Atlantic waters near major East Coast cities, such as Boston and New York City. “Connecting the power to the grid would be technically as easy as laying a cable in the sand and hooking it directly into the grid without the need to build often controversial transmission lines on the land,” Dvorak said.

Meeting Peak Power Demand

Besides yielding a huge reduction in U.S. carbon and greenhouse gas emissions, developing a battery of East Coast offshore wind farms would provide a big boost to the U.S. economy, generate a very substantial number of good green jobs and help U.S. commerce and industry innovate and compete in the fast-growing global wind and renewable energy markets.

“But the real advantage of wind versus natural gas or coal is that, even though there’s a higher cost now for offshore wind, it results in price stability,” Jacobson said. “There are zero fuel costs once they’re in the water. Coal and gas are depletable resources, so their cost will inevitably go up over time. The cost of wind energy will remain stable, and the wind resource is infinite.”

Not one offshore wind power project is “in the water.” Strident political opposition, along with bureaucratic, grid interconnection and technical hurdles continues to hinder offshore wind project development in the US even as European nations, facing similar obstacles, continue to forge ahead.

That’s despite the offshore wind energy generation potential of more than 1,300-gigawatts (GW). Harnessing “a realistic fraction” of just 52-GW “could power 14 million homes with clean electrons while creating over 300,000 new jobs and \$200 billion” in economic activity in some of the nation’s largest cities.

The first proposal to develop an offshore wind farm in the U.S. — the Cape Wind Project in Nantucket Sound — was filed in 2001. More than a decade later, installation has yet to even begin, though Cape Wind in April announced that it had selected a joint venture team that is to carry out construction.

Affirmative Article 2: “Production Tax Credit for Renewable Energy”

by The Union of Concerned Scientists, coalition of scientists and non-scientists advocating for environmentally sustainable development. Last revised January 31, 2014. Available at http://www.ucsusa.org/clean_energy/smart-energy-solutions/increase-renewables/production-tax-credit-for.html

The Production Tax Credit (PTC) is a federal incentive that provides financial support for the development of renewable energy facilities.

Companies that generate electricity from wind, geothermal, and “closed-loop” bioenergy (using dedicated energy crops) are eligible for a federal PTC, which provides a 2.3-cent per kilowatt-hour (kWh) incentive for the first ten years of a renewable energy facility's operation.

Other technologies, such as "open-loop" biomass (using farm and forest wastes rather than dedicated energy crops), efficiency upgrades and capacity additions for existing hydroelectric facilities, small irrigation systems, landfill gas, and municipal solid waste (MSW), receive a lesser value tax credit of 1.1 cents per kWh.

The production tax credit for wind and other renewable energy technologies expired at the end of 2013. However, an important new provision was included in the American Taxpayer Relief Act of 2012 (enacted in January 2013) allowing eligible projects that were under construction before January 1, 2014 to qualify for the PTC. The IRS issued guidelines in April 2013, and again in September 2013, clarifying several issues around what is needed to qualify as under construction.

The PTC and Wind

Combined with state renewable electricity standards, the PTC has been a major driver of wind power development in the United States. This development has resulted in significant economic benefits, according to the U.S. Department of Energy:

Between 2007 and 2012, U.S. wind capacity more than tripled, representing an annual average investment of \$18 billion.

More than 550 manufacturing facilities located in 44 states produce 72 percent of the wind turbines and components installed in the United States, up from 25 percent in 2006.

The cost of generating electricity from wind has fallen by more than 40 percent over the past three years.

But Congress has repeatedly gone back and forth between expiring and extending the PTC, which has wreaked havoc on the wind industry.

Originally enacted as part of the Energy Policy Act of 1992, Congress has extended the provision five times and has allowed it to expire on five occasions. This "on-again/off-again" status has resulted in a boom-bust cycle of development. In the years following expiration, installations dropped between 76 and 93 percent, with corresponding job losses (see Figure below).

The cycle begins with the industry experiencing strong growth in development around the country while the PTC is firmly in place, and in the years leading up to the PTC's expiration. Lapses in the PTC then cause a dramatic slowdown in the implementation of planned wind projects and layoffs at wind companies and manufacturing facilities. Upon restoration, the wind power industry takes time to regain its footing, and then experiences strong growth until the tax credits expire. And so on.

Short-term extensions of the PTC are insufficient for sustaining the long-term growth of renewable energy. The planning and permitting process for new wind facilities can take up to two years or longer to complete. As a result, many renewable energy developers that depend on the PTC to improve a facility's cost effectiveness may hesitate to start a new project due to the uncertainty that the credit will still be available to them when the project is completed.

Last-minute PTC extensions don't serve anyone well either. The pending uncertainty threatens access to financing and stalls plans for development, jeopardizing the tens of thousands of jobs in the industry. This uncertainty was clearly evident in 2013 when the PTC was extended two days after the 2012 expiration date and U.S. wind development hit its lowest level since 2004. However, a recent study by the American Wind Energy Association (AWEA) shows that at least 12,000 MW of wind capacity is currently under construction and 5,200 MW of capacity that signed power purchase agreements in 2013 could be eligible for the PTC under the new IRS guidelines.

A long-term extension of the PTC is needed to bring more stability to the wind industry, and help level the playing field with fossil fuels and nuclear power— industries that have received far greater taxpayer support for decades.

But most importantly, the PTC works. With it in place, wind power has dramatically increased, reducing our reliance on fossil fuels, driving innovation and economic development, lowering costs, and providing important environmental benefits— including carbon reductions.

Affirmative Article 3: “Georgia at the Back of the Pack in Race for Offshore Wind”

by Environment Georgia, a Georgia environmental advocacy group. Published September 13, 2012 Available at <http://www.environmentgeorgia.org/news/gae/georgia-back-pack-race-offshore-wind>

As the clock ticks down for Congress to extend critical tax credits for wind power, a new report shows that with a step-up in state and federal leadership, Georgia could realize the benefits of offshore wind.

Georgia has immense untapped offshore wind energy resources, and the new report “The Turning Point for Atlantic Offshore Wind Energy,” written by the National Wildlife Federation and released today in Atlanta by Environment Georgia identifies key building blocks that local, state, and federal officials have put in place to usher in a future with offshore wind, including admission of Georgia into the Atlantic States Offshore Wind Consortium.

“Essentially, Georgia has several dozen power plants waiting to be tapped off our coast, said Jennette Gayer, Policy Advocate with Environment Georgia. “Unfortunately, when it comes to tapping that potential, we are behind. To keep us in this race and make sure we can take advantage of this boon in pollution-free energy and local jobs our leaders must act now.”

Environment Georgia called on leaders in Congress to extend the offshore wind tax credit before it expires at the end of the year. They also urged Governor Nathan Deal to take steps to add Georgia to the Atlantic States Offshore Wind Consortium, South Carolina, Georgia and Florida are the only states with Atlantic wind potential not currently part of this Consortium designed to make wind development off the Atlantic Coast more efficient and coordinated.

The Atlantic coast is an ideal location for offshore wind energy because of its high electricity demand and population density along the coast. Along the Atlantic coast alone, reaching the Department of Energy’s (DOE) goal of 54 gigawatts of offshore wind power would reduce carbon pollution by the equivalent of taking roughly 18 million cars off the road. Meeting this benchmark would also generate \$200 billion in new economic activity while creating more than 43,000 permanent, high-paying jobs in manufacturing, construction, engineering, operations, and maintenance, according to the National Renewable Energy Laboratory.

Despite little activity around actually installing wind turbines off the coast, Georgia does have a growing wind manufacturing sector, including companies that manufacturer components of wind turbines, the rope and harnesses used by turbine maintenance crews, and electrical HVAC or switch systems.

“Offshore wind in Georgia is not only good for the environment, but it is a clean technology that provides economic growth and local jobs to the region,” said Carolin Wolfsdörfer, plant manager of ZF Wind Power Gainesville, a manufacturer of wind turbine gearboxes based in Gainesville, Ga. “Our company stands ready to help Georgia and the rest of the U.S. develop our offshore wind resources and create jobs in Georgia.”

Affirmative Article 4: “Global Warming Will Spur Migration”

By the Center for American Progress, a progressive policy think tank. Published July 3, 2007. Available at <http://americanprogress.org/issues/green/news/2007/07/03/3295/climate-refugees-global-warming-will-spur-migration/>

Debate over comprehensive immigration reform may have stalled last week in the Senate, but there’s one key concern that’s just warming up: the exacerbating effect that droughts, severe weather, food shortages, disease, and sea level rises will have on migration.

Worldwide environmental, economic, and social consequences from existing atmospheric greenhouse gas concentrations, even if we were to cease emissions today, will drive migration around the globe. Attention to the migration pressures resulting from global warming should therefore be an essential aspect of a long-term U.S. immigration plan. This will not only focus efforts on helping populations adapt to climate change, but also encourage thought on how to alleviate migration pressures.

According to the International Federation of Red Cross, climate change disasters are already a bigger cause of population displacement than war and persecution. Estimates of climate refugees currently range from 25 to 50 million. And this April, global scientific experts and former U.S. military leaders warned in two reports—the Intergovernmental Panel on Climate Change’s Fourth Assessment and the CNA Corporation’s “National Security and the Threat of Climate Change”—that the effects of global warming are likely to trigger conflict and mass migrations of affected people.

Large numbers of immigrants to the United States currently come from Mexico and the Caribbean, and with increases in storm intensity, stress on natural resources, and rising sea levels—side effects already affecting these regions—immigration levels will only increase. Northern Mexico’s severe water shortages will drive immigration into the United States despite the increasingly treacherous border terrain. The damage caused by storms and rising sea levels in the coastal areas of the Caribbean Islands—where 60 percent of the population live—will likewise increase the flow of immigrants from the region and generate political tension.

The United States cannot ignore the potentially heightened flow of displaced peoples as it continues to discuss immigration reform. Because we shoulder a large portion of the responsibility for the current levels of global warming pollution in the atmosphere, we have a moral responsibility to invest in solutions that will help ourselves and the world—particularly poor countries—adapt and prevent the growing implications of climate change.

The countries least responsible for greenhouse gas emissions are frequently the most vulnerable to global warming’s earliest effects. Developing countries bear minimal responsibility for climate change because they have little industry and produce relatively small amounts of pollution. But their populations—often the poorest of the world’s people—are more likely to occupy vulnerable locations such as coast lines, flood plains, and steep slopes and live in structures unable to withstand severe weather events. The governments of these poor countries therefore carry the largest burden associated with climate change and are ill-equipped to recover from disasters and meet the basic needs of their citizens.

The United States therefore owes a “climate debt” that it needs to pay back to these poor countries. China may have recently surpassed the United States in terms of overall greenhouse gas emissions, but the United States has still had the largest historical greenhouse gas emissions as well as the greatest per capita emissions. Each American citizen on average produces four times the amount of greenhouse gas as an average Chinese citizen. And, unfortunately, because greenhouse gases can persist in the atmosphere for hundreds of years, the world will be experiencing the negative effects of these disproportionately large U.S. emissions for years to come.

Affirmative Article 5: “Climate Change is Here – and Worse Than we Thought”

by James Hansen, director of the NASA Goddard Institute for Space Studies. Published June 2, 2014, in the Washington Post. Available at http://www.washingtonpost.com/opinions/climate-change-is-here--and-worse-than-we-thought/2012/08/03/6ae604c2-dd90-11e1-8e43-4a3c4375504a_story.html

When I testified before the Senate in the hot summer of 1988, I warned of the kind of future that climate change would bring to us and our planet. I painted a grim picture of the consequences of steadily increasing temperatures, driven by mankind’s use of fossil fuels.

But I have a confession to make: I was too optimistic.

My projections about increasing global temperature have been proved true. But I failed to fully explore how quickly that average rise would drive an increase in extreme weather.

In a new analysis of the past six decades of global temperatures, which will be published Monday, my colleagues and I have revealed a stunning increase in the frequency of extremely hot summers, with deeply troubling ramifications for not only our future but also for our present.

This is not a climate model or a prediction but actual observations of weather events and temperatures that have happened. Our analysis shows that it is no longer enough to say that global warming will increase the likelihood of extreme weather and to repeat the caveat that no individual weather event can be directly linked to climate change. To the contrary, our analysis shows that, for the extreme hot weather of the recent past, there is virtually no explanation other than climate change.

The deadly European heat wave of 2003, the fiery Russian heat wave of 2010 and catastrophic droughts in Texas and Oklahoma last year can each be attributed to climate change. And once the data are gathered in a few weeks’ time, it’s likely that the same will be true for the extremely hot summer the United States is suffering through right now.

These weather events are not simply an example of what climate change could bring. They are caused by climate change. The odds that natural variability created these extremes are minuscule, vanishingly small. To count on those odds would be like quitting your job and playing the lottery every morning to pay the bills.

Twenty-four years ago, I introduced the concept of “climate dice” to help distinguish the long-term trend of climate change from the natural variability of day-to-day weather. Some summers are hot, some cool. Some winters brutal, some mild. That’s natural variability.

But as the climate warms, natural variability is altered, too. In a normal climate without global warming, two sides of the die would represent cooler-than-normal weather, two sides would be normal weather, and two sides would be warmer-than-normal weather. Rolling the die again and again, or season after season, you would get an equal variation of weather over time.

But loading the die with a warming climate changes the odds. You end up with only one side cooler than normal, one side average, and four sides warmer than normal. Even with climate change, you will occasionally see cooler-than-normal summers or a typically cold winter. Don’t let that fool you.

Affirmative Article 6: “Untapped Wealth: Offshore Wind”

By Simon Mahan (Renewable Energy Manager at the Southern Alliance for Clean Energy), Isaac Pearlman (fisheries researcher at UC Santa Barbara), and Jacqueline Savitz (Deputy President of U.S. Campaigns at Oceana, an ocean conservation organization.) Report for Oceana published in September 2010. Available at http://oceana.org/sites/default/files/reports/Offshore_Wind_Report_-_Final_1.pdf

Offshore wind offers more than just clean electricity. It also can be a major source of jobs. Manufacturing, installing, operating, and maintaining offshore wind farms can provide thousands of local jobs in coastal states. These include positions that require unique engineering, manufacturing and maritime expertise. For example, offshore wind production requires oceanographic and ecological expertise. Experts in these fields would be needed to collect and analyze data on areas of interest to offshore wind developers. New or retrofitted heavy manufacturing facilities would need to be built in the United States to supply offshore turbines. Installing offshore turbines also would require maritime expertise and ships, similar to those needed by the offshore oil and natural gas industry. Specialized undersea cables would be needed to transmit electricity from the farm to the shore. Manufacturing and installation needs in each of these areas these would create additional jobs. As a result, a variety of long-term jobs would be created by offshore wind energy development, including electricians, meteorologists, welders, and operators among other general maintenance laborers.

Besides the sheer quantity of offshore wind energy compared to the offshore oil and natural gas resource, offshore wind power will also create many more jobs than the oil and gas industries. According to the American Petroleum Institute (API), the oil and gas sectors of the United States directly employ 2.1 million people. API asserts that by opening up previously protected offshore areas (including the entire East and West Coasts), the natural gas and oil industry would create 39,079 jobs in 2030.

The permanence of these jobs is in question, since oil and gas supplies are finite, unlike renewable sources. The United Kingdom expects to create between 1 and 1.7 full-time equivalent jobs for each megawatt of offshore wind power installed. 89 If only 127 gigawatts of offshore wind farms are installed in the United States by 2030, similar to Europe’s ambitious plan, 90 this could create between 133,000 and 212,000 permanent American jobs annually. Offshore wind would create about three times as many jobs as would the offshore oil and gas industries. This comparison is consistent with studies conducted by the PERI Institute, which show a 3-to-1 ratio between jobs created by clean energy versus those created by fossil fuel industries. The American Wind Energy Association (AWEA) estimates that currently in the United States, 85,000 people are employed by the wind industry. 92 In Europe, 19,000 people are already employed in the offshore wind industry. 93 Installing, operating and maintaining offshore wind farms employ more people per megawatt of capacity installed than onshore wind power.

*****Negative Articles*****

Negative Article 1: “Support For Wind Subsidies Divides Republicans”

By Christine Harbin Hanson, Federal Issues Campaign Manager for Americans for Prosperity, a conservative political advocacy group. Published in Forbes on June 18, 2014. Available at <http://www.forbes.com/sites/realspin/2014/06/18/support-for-wind-subsidies-divides-republicans/>

In arguing that that tax credits are needed to boost employment in the wind industry, proponents overlook what the rest of the economy gives up in exchange for them. In reality the PTC is a net jobs loser—it distracts labor and capital away from more efficient areas in the economy and slows over all growth. Wind turbine makers may be able to plump up their payrolls—just as any tax handout will boost employment in a targeted industry—but the rest of the economy suffers as a result. Any boost in employment among wind turbine makers is inherently temporary.

Compared to other forms of electricity generation, wind power is far from cost competitive. The wind PTC is an outrageously large subsidy, leading to giant disruptions in the energy market. At \$23 per megawatt-hour, the PTC is worth half (and sometimes even more) of the entire wholesale price of electricity in many parts of the country. In fact, the PTC is so lavish and anti-cost-competitive that wind power producers often bid negative prices into electrical grid, just so they can collect the subsidy. They literally pay utilities to take their electricity.

Lawmakers should oppose resurrecting this tax break for wind energy because it’s costly, and increasingly so—the PTC cost \$12 billion in 2014, up from a historical average of \$5 billion per year.

In practice, targeted subsidies are a tried-and-terrible way to develop new energy sources, Under President Obama’s direction, the federal government has tried to prop up its favorite energy sources with targeted subsidies—tax credits, grants, loan guarantees, state-based mandates, etc.—with little to show besides slower economic growth. Too many of these pet projects have gone bankrupt and belly-up, sticking taxpayers with the bill, and failing to get the U.S. any closer to its energy goals.

Even Warren Buffett readily admits that wind energy is a terrible investment—“[O]n wind energy, we get a tax credit if we build a lot of wind farms. That’s the only reason to build them. They don’t make sense without the tax credit.”

At its core, the wind PTC is no different than these green energy boondoggles like Solyndra and its successors. It represents exactly the kind of government meddling in the economy that Republicans campaign against. Republicans in particular should live up to their stated principles of free markets and level playing fields by opposing extending the PTC. If the wind industry were truly an American success story, as its supporters assert, then it wouldn’t remain woefully dependent on tax credits and purchase mandates, as it has for over 20 years.

As they consider tax extender legislation this summer, lawmakers on both sides of the aisle should ignore calls from special interests to resurrect expired tax incentives. Their constituents didn’t send them to Washington to enact policies that cost jobs, distort the energy market, drive up energy bills—but by extending the PTC, that’s precisely what they’re poised to do. American energy consumers would be much better off if U.S. energy policy were a portfolio of energies that are strong and profitable independent of government subsidy, not those that rely on a leg-up from government.

Negative Article 2: “Dutch Pull the Plug of Offshore Wind Subsidies”

by D. Brady Nelson, an economist, writing for The Heartland Institute, a think tank advocating for free markets. Published December 30, 2011. Available at <http://news.heartland.org/newspaper-article/2011/12/30/dutch-pull-plug-offshore-wind-subsidies>

The nation known for its iconic windmills is throwing in the towel on offshore wind power, as Dutch officials have determined the Netherlands can no longer afford large-scale subsidies for expensive wind turbines that cannot produce electricity at economically competitive prices.

The decision is a powerful blow against renewable power advocates who have long asserted Holland proves renewable power can be practical and economical.

Offshore Wind ‘Very Uncompetitive’

“Offshore wind remains a very uncompetitive option,” Dutch Minister of Economic Affairs Maxime Verhagen told Wind Directions: The European Wind Industry Magazine.

“Offshore wind remains a very expensive option in the near future. The Dutch government is willing to invest in innovation to bring down the costs of offshore wind energy, but prices must come down considerably before large scale investments can again be supported,” Verhagen was quoted as saying.

Despite large subsidies from the Dutch government, wind power provides merely 4 percent of Dutch electricity. With government pulling the plug on subsidies for offshore wind power generation, that number is likely to shrink further.

Offshore Cost Factors

Winds off the coast of the Netherlands and other nations often are more suitable for wind power generation than land-based sites, but it is more expensive to build and maintain wind farms offshore than on land. Drilling the seabed to support turbines is difficult and expensive; salt water and salt air corrode offshore turbines very rapidly; accessing offshore turbines for regular maintenance is costly; and connecting offshore turbines to the power grid presents unique challenges.

The Netherlands will continue to subsidize land-based wind turbines, but public opposition is growing against the large turbines that many say are blighting the landscape and posing special health risks.

“Even if it is accepted that carbon dioxide outputs should be reduced, governments have gone about this in a very inefficient and expensive way,” said economist Philip Booth, program director of the UK’s Institute of Economic Affairs. “They must wake up and appreciate the cost—both financial and environmental—of their energy policies.”

Offshore wind turbines came online in the Netherlands in 2006 and cost Dutch taxpayers more than \$5 billion last year.

Negative Article 3: “Economic Shock Could Throw 900 Million People Into Poverty”

By Harry Bradford, Associate Editor for HuffPost Business and HuffPost Small Business. Published in the Huffington Post on April 5, 2013. Available at http://www.huffingtonpost.com/2013/04/05/global-poverty-900-million-economic-shock_n_3022420.html

Hundreds of millions of people worldwide are on the brink of poverty.

A recent study by the International Monetary Fund warns that as many as 900 million people could fall back into poverty in the event of an economic shock like the Great Recession. That figure is three times the size of the U.S. population.

According to the World Bank, 1.2 billion people are currently living on less than \$1.25 a day.

While the report acknowledges that progress has been made to reduce global poverty and strengthen the world economy following the financial crisis, the world is still in a vulnerable situation.

Global unemployment, for example, is the highest it's been in two decades with 40 percent of the world's population out of work, according to the report.

And things could get much worse in the event of a macroeconomic shock, of which the Europe and U.S. are dangerously close. The recent bailout of Cyprus threw the eurozone into chaos, igniting fears that the situation could lead to the next financial crisis.

Here in the U.S., a series of automatic spending cuts known as the sequester could cost the economy hundreds of thousands of jobs. The cuts have already threatened the stability of safety nets designed to aid the nation's poorest.

The U.S. continues to fail to sustain a robust job market, adding only 88,000 jobs in March.

Negative Article 4: “Our Fragile Economy Still Needs Time to Gather Its Strength

By Charlie Cook, Editor and Publisher of The Cook Political Report, and political analyst for National Journal. Published May 12, 2014. Available at <http://www.nationaljournal.com/off-to-the-races/our-fragile-economy-still-needs-time-to-gather-its-strength-20140512>

Americans remain pretty pessimistic about the economy. The National Bureau of Economic Research calculates that the most recent recession began in December 2007 and ended in June 2009. But that is certainly news to most Americans. In a March NBC News/Wall Street Journal poll, 57 percent of respondents said they believe we are still in a recession, while 41 percent said we are not. Indeed, in the seven times that NBC/WSJ pollsters have asked the question since the latter half of 2001, a majority of Americans have felt that we were in a recession.

While consumer confidence is on the rise and pretty close to the highest it has been since the last recession began, we are nowhere near the levels of optimism and comfort that Americans felt during the period of 1992 until this latest recession began in late 2007. We feel better, but nowhere near good. The recent economic reports that we only had a one-tenth of a percentage point increase in the real gross domestic product is attributed to an unusually harsh winter; but a vibrant economy doesn't sustain that kind of hit from a tough winter alone. As Mesirow Financial's Chief Economist Diane Swonk put it in a recent report to clients: "The economy came to a virtual standstill in the first quarter [of 2014], adding insult to injury to an economy still struggling to recover." She added that it was "reflective of a fundamental weakening in a recovery that was already compromised." This was and remains a very fragile economy.

The monthly survey of top economists conducted by Blue Chip Economic Indicators projects that the economy, as measured by change in real GDP, will likely grow at a rate of 3.4 percent for the ongoing second quarter of this year, then 3.0 and 3.1 percent for the third and fourth quarters, respectively. And projections for 2015 remain basically at the 3.0 percent level. Obviously, this is far better growth than we have had during recessions; looking back over the last three-quarters of a century, mid-to-high single digits is more the norm, so the economy will likely be growing—but compared with the pain we have gone through, not at nearly the rate we need and would like to have.

With projections calling for growth—but nothing like the impressive growth we have seen in previous eras—businesses are slow to risk huge investments in new plants and equipment. To paraphrase economist Michael Drury of McVean Trading and Investments, without a surge in capital spending—which is not happening—this economic cycle will remain lackluster, but last longer. Manufacturing and employment in that sector is picking up strongly, but caution remains.

Cornerstone Macro, a New York-based firm that advises its Wall Street clients on economics, policy, and investment strategy, said in a recent report that the manufacturing workweek is near a record high, and manufacturing wages are now on the increase after a stomach-churning plunge during the 2008 recession. The manufacturing employment rate for April was 5.6 percent, the largest increase in almost 30 years. Citing figures from the payroll firm ADP, the employment rate for small businesses—organizations with fewer than 50 workers—is at a record high. Now almost 50 million people work for

small businesses, almost double those working for large businesses of 500 or more employees.

Hiring numbers for small, medium, and large firms are doing well, but not all of the unemployed have the skills for this new economy. The labor-participation rate (the percentage of the population working) is still languishing, and long-term unemployment remains a critical problem. Sadly, the longer people are unemployed, the more their skills and marketability atrophy, and the harder it is for them to find a new job. We were in a pretty deep hole during the recession, followed by an exceedingly sluggish recovery.

Much of the good news in manufacturing is linked to the energy renaissance coming from the oil and gas sector. The International Energy Agency projects that the U.S. will surpass Russia and Saudi Arabia to become the world's top oil producer by 2015.

Energy Information Administration figures show that U.S. crude-oil inventories are the highest since 1931, currently at almost 400 million barrels. This is roughly a third more than 10 years ago, and far greater than the 250 million during the energy crisis of the 1970's. U.S. oil production is now at double the amount of oil we import from OPEC, a huge plus for the United States for both economic and geopolitical reasons. Heading into the recession that began in December 2007, imports far outstripped production.

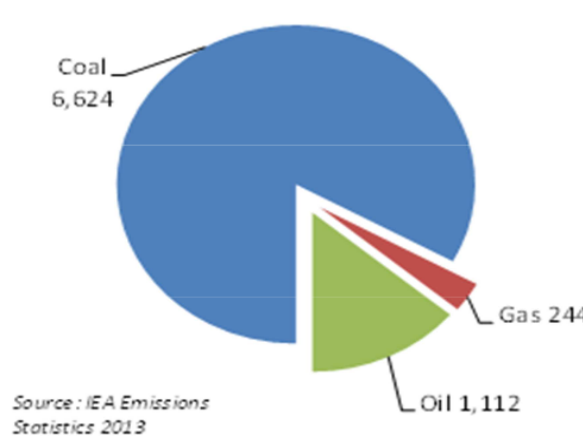
The bottom line is that while there is considerable good news, the bad news was so bad for so long, we need much better news for a much longer period of time.

Negative Article 5: “An Innovative and Sustainable Growth Path for China: A Critical Decade”

By Fergus Green (Policy Analyst and Research Advisor at the Grantham Research Institute on Climate Change and the Environment) and Nicholas Stern (Chair of the Centre for Climate Change Economics and Policy). Published in May 2014. Available at <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2014/05/Green-and-Stern-policy-paper-May-20141.pdf>

Fourth, China’s coal use is a major source of global GHG emissions and therefore increases the risks associated with climate change — risks to which China will be increasingly exposed. In 2011, coal was responsible for more than 80% of China’s 8Gt [gigatons] of CO₂ emissions from fossil fuel combustion (Figure 5), which were in turn around a quarter of the world’s fossil fuel combustion CO₂ emissions (IEA 2013a). In other words, around one fifth of the world’s CO₂ emissions from fossil fuel combustion came from Chinese coal.

Figure 5: China CO₂ emissions from fossil fuel combustion by source in 2011 (Total: 8 GtCO₂)



If Chinese coal consumption continues to grow, as most experts project, until sometime between 2025 and 2035, and declines only slowly thereafter (Figure 6), total Chinese emissions would seem likely to exceed 15Gt CO₂ by 2030, making it almost impossible for the world to move onto an emissions reduction pathway that gives even a 50-50 probability of staying below 2°C. Of course, developed countries are disproportionately responsible for the historical concentrations of emissions in the atmosphere, but the reality is that crossing this threshold would dramatically increase the risks of climate impacts to which China would be exposed — impacts that could reverse much of the growth and development that China has achieved over the preceding decades (IPCC 2014; WB/PIK/CA 2012; Stern 2012).

[Note: GHG = greenhouse gases, and Gt = gigatons].

Negative Article 6: “Uncertain' Science: Judith Curry's Take On Climate Change”

by Richard Harris, award-winning science correspondent with NPR. Published August 22, 2013. Available at <http://www.npr.org/2013/08/22/213894792/uncertain-science-judith-currys-take-on-climate-change>

While the Obama administration presses forward with plans to deal with climate change, Congress remains steadfast against taking action. It's not easy to find a scientist who will agree with that point of view. But Republicans have found an ally in a climate scientist by the name of Judith Curry.

Curry actually entered the public eye in 2005, with a paper in *Science* magazine warning that hurricanes were likely to become more intense as a result of climate change. But in the years since then, she's soured on the scientific consensus about climate change. Her mantra now is, "We just don't know."

This message plays well in the House of Representatives, so it's no surprise that Curry was called to testify at a subcommittee hearing there this spring.

Curry certainly has the credentials. She is a of the School of Earth and Atmospheric Sciences at the Georgia Institute of Technology. She also runs a side business as a private weather forecaster. But she doesn't deny the basic principles of climate change.

"If all other things remain equal, it's clear that adding more carbon dioxide to the atmosphere will warm the planet," she told the committee. But, she went on, not all things are equal. She says there's so much uncertainty about the role of natural variation in the climate that she doesn't know what's going to happen. She says a catastrophe is possible, but warming could also turn out to be not such a big deal.

And she focuses on uncertainties and unknown unknowns far more than on the consensus of climate scientists, who say we know enough to be deeply worried.

"I've been trying to understand how there can be such a strong consensus, given these uncertainties," she told the committee.

Her message that day on Capitol Hill was, in essence, that while humans may be contributing to climate change, we simply don't know how the climate will behave in the coming decades, so there may be no point in trying to reduce emissions.

That played well to Republican committee members including of California, who sees climate change as a liberal plot.

"We've gone through warming and cooling trends, but how much of this has anything to do with human activity?" he asked rhetorically. Concern about climate change "gives an excuse by government to control human activity, meaning our lives and our freedom."

Curry worries about that as well.

The Rough-And-Tumble Climate Debate

We caught up with her during her summer break, which she takes far from the sticky Atlanta heat. Her daughter lives in Reno, Nev., which means the cool mountains overlooking Lake Tahoe are a quick drive.

We hit the trail with her dogs, Bruno and Rosie, who are friendly and curious — half Australian shepherd, half poodle. This is a favorite place for Curry to come and walk and think. We settle on a chunk of granite to talk.

Curry, 60, is a bit of an outcast these days in the world of climate science. But it wasn't always so.

Curry says her 2005 hurricanes paper "generated a lot of media attention which we were ill-prepared to deal with," she says. "We were being attacked by the anti-global-warming crowd as well as a large number of people in the hurricane community who thought this was natural variability."

And that was just her first taste of the rough-and-tumble climate debate. A few years later, an apparent hacker among climate scientists involved with the United Nations climate assessment, the Intergovernmental Panel on Climate Change. Curry stepped into the middle of this and started engaging some of the skeptics.

"I took it upon myself to try to calm the waters a bit. I thought, 'Oh my gosh, this could really blow, and this would not be a good thing for climate science or the IPCC,' so I wrote an essay on the credibility of climate science."

She published that online.

Her philosophy, then and now, is that if climate scientists would more readily acknowledge the uncertainties inherent in the issue, skeptics would more likely accept the well-established central tenets of global warming.

To give one example, she says human activities are contributing to global warming, but she bristles at the IPCC consensus that humans are "largely responsible" — in other words, that more than 50 percent of global warming to date is caused by human activity.

"It might be around 50 percent or even a little less. I mean this is what we don't know" she says.

*****Glossary*****

Glossary (1/4)

Energy

Renewable energy

Renewable energy is any form of energy that will never run out: examples include wind power, solar power, and hydropower. Non-renewable forms of energy rely on resources that will eventually be depleted: for example, coal, oil, and natural gas.

Offshore wind

Offshore wind refers to wind power generated from turbines in the ocean. Offshore wind is a potentially appealing energy source because a large proportion of the U.S. population lives off the coast of the Atlantic, the wind usually blows faster and more often at sea, and the ocean can support an effectively unlimited number of wind turbines.

Coal

Coal currently generates a large amount of electricity in the U.S. and around the world. Coal is generally cheap and plentiful, but burning it emits large amounts of carbon dioxide and other pollutants. Some people argue that we should continue to use coal, but develop technologies that prevent these pollutants from being emitted. These technologies are generally called “clean coal technologies” or “carbon capture and storage,” and their effectiveness and practicality are controversial.

Nuclear power

Nuclear power generates a large amount of electricity and emits no carbon dioxide. However, many people also oppose nuclear power due to the risk of nuclear meltdowns, which threaten to expose people near the nuclear power plant to dangerous radiation. After the meltdown of a nuclear reactor in Fukushima, Japan, in 2011, nuclear power has become far less popular. There is also debate over whether nuclear power or renewables are a better technology to address global warming.

Peak power demand

Demand for electricity is different at different points during the day. During the night, for instance, electricity demand is very low because most people are sleeping and not using power. During the middle of the day, on the other hand, electricity demand tends to be much higher as people use electricity for lighting, air conditioning, and other activities. The point at which electricity demand is highest is called “peak power demand.”

Glossary (2/4)

Competitiveness

The “competitiveness” of different energy sources refers to the relative cost of producing energy from those sources. An energy source is “competitive” if it can be produced cheaply enough that utilities will choose to buy it over other energy sources.

Utilities

Utilities are companies that provide electricity services to consumers. The types of energy that utilities choose to buy determine the types of energy that most consumers end up using.

Economics

Positive incentives, negative incentives, subsidies, and regulations

An incentive is anything that tries to encourage certain kinds of actions. “Positive incentives,” or subsidies, are incentives that promise something good if a certain action is taken: for example, “I’ll give you twenty dollars to mow the lawn.” “Negative incentives” are punishments: for example, “you’ll be grounded if you don’t mow the lawn.” Governments use both positive and negative incentives to encourage and discourage different forms of energy usage.

Production tax credit

Production tax credits, or PTCs, are government subsidies that provide a tax break based on the amount of a energy a company generates. So, a company that generates a lot of energy from offshore wind will receive a large tax break from a wind PTC, while a company that generates a lot of energy from (for example) natural gas will receive no tax break at all.

Electricity prices

Electricity prices are determined by how much electricity consumers – either regular people in their homes, or businesses – pay for electricity. Factors that influence electricity prices include how much electricity is being produced, the cost of producing that electricity, and how much electricity consumers demand.

Consumer spending

Consumer spending refers to how much money regular people spend on everyday items like clothes, soap, iPods, etc. High healthcare costs, taxes, or energy prices can decrease consumer spending by decreasing the amount of money that people have to buy things that they want. High consumer spending is often associated with economic growth because it means that businesses are making money by selling things that consumers want.

Glossary (3/4)

Climate

Global warming

Global warming is the theory that carbon dioxide and other gases are contributing to a warming of the Earth's climate. These gases are often referred to as “greenhouse gases.” Many scientists predict that, without a significant effort to reduce greenhouse gas emissions, the Earth's climate will warm by several degrees Celsius over the next few decades. These changes are expected to have large impacts on the environment, agriculture, and the intensity of natural disasters.

Not only is there disagreement about whether global warming exists, there's also disagreement about whether *scientists agree* that global warming exists. People who believe global warming is real usually claim that there's a scientific “consensus” on global warming (that is, that nearly all scientists agree that global warming is real) and argue that scientists who disagree are paid off by oil and natural gas companies. People who are skeptical of global warming usually claim that there's no scientific consensus, and that there are good reasons to believe that global warming may not exist at all.

IPCC

The IPCC, or Intergovernmental Panel on Climate Change, is a United Nations organization that publishes reports on global warming. For over a decade, the IPCC has taken the position that global warming is real and likely to have severe negative effects. People who believe in climate change often cite the IPCC as evidence that there is broad scientific agreement on the existence of global warming, and the IPCC is often referred to as an authority in debates about global warming.

Climate models

Climate models are a tool used by climate scientists to predict future variations in climate. By incorporating different climate-related variables – for instance, carbon dioxide, weather patterns, and intensity of sunlight – into a single mathematical model, scientists attempt to predict how greenhouse gas emissions will affect global temperatures in the future. Many climate models predict significant global warming due to greenhouse gas emissions, but global warming skeptics often argue that climate models are too abstract to effectively predict the climate.

Peer-reviewed study

Peer-reviewed studies are scientific studies that are reviewed and criticized by other scientists before they're published. Many people argue that peer-reviewed research should be considered the “gold standard” for research, since authors are held accountable to other experts in their field. People who believe in climate change usually cite peer-reviewed studies as a reason why their beliefs have been effectively tested.

Glossary (4/4)

Cloud feedbacks

One important issue in climate change research is the question of “feedbacks.” Feedbacks refer to the factors that effect whether global warming becomes more or less intense as time goes on. For instance, one factor that affects climate is the reflection of light off the Arctic ice caps, an effect which causes overall cooling of the Earth's atmosphere. As global warming melts the ice caps, less light is reflected back into outer space, and the Earth warms even more: as a result, the melting of the ice caps is referred to as a “positive feedback.”

On the other hand, some feedbacks can be negative. Some people argue that, as the Earth warms, clouds will change to reflect more light into the atmosphere. If this is true, it would cause a cooling effect that offsets the warming effect: or, a “negative feedback.”

Cloud feedbacks in particular are a controversial issue in climate research. If cloud feedbacks are positive, then global warming could be really severe. If cloud feedbacks are negative, global warming may not be much of a problem at all.