



STUDY GUIDE

DO 97% OF CLIMATE SCIENTISTS REALLY AGREE?

KEY TERMS:

climate change
catastrophic

fossil fuel
main cause

fallacy

NOTE-TAKING COLUMN: Complete this section <i>during</i> the video. Include definitions and key terms.	CUE COLUMN: Complete this section <i>after</i> the video.
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What is the upside of using fossil fuels for energy?

Why is the '97%' claim illogical and unscientific?

What claim did Secretary Kerry add to his speech in Indonesia that 97% of scientists didn't actually say?

What is the motivation and goal for those who use the '97%' claim?

What percentage of published papers conclude that human beings are the main cause of recent global warming?

DISCUSSION & REVIEW QUESTIONS:

- Mr. Epstein begins the video by highlighting the oft-cited claim that, “97% percent of climate scientists agree that climate change is real.” What makes this claim untrue? Considering that this claim is not true, why do you think that so many people believe this claim, and why do you think that so many people cite this claim in their own arguments and work?
- When discussing the full examination of the ‘97%’ claim in relation to fossil fuels, Mr. Epstein points out that, “In the case of fossil fuel that upside is enormous: the cheap, plentiful, and reliable energy that makes modern life possible, and at a scale no other energy source can match.” Why do you think that many fossil fuel opponents ignore such a significant truth, especially the point about scaling ability? How does Mr. Epstein’s point weaken the position of fossil fuel opponents?
- Mr. Epstein further points out that, “This raises another problem with the statement “97% percent of climate scientists agree that climate change is real.” It tells us nothing about the meaning or magnitude of “climate change”—whether it’s a mild, manageable warming or a runaway, catastrophic warming.” What weakness in the claim is Mr. Epstein exposing with the close examination of this claim? What problems, in terms of being able to have an honest and intelligent dialogue on a topic, are caused by assumptions- such as the assumption that the use of the term ‘climate change’ means ‘dramatic and catastrophic climate change?’ In addition to the ‘degree of magnitude’ issue Mr. Epstein reveals here, do you think that a value judgment issue exists as well- in other words do you think that another problem with claims like the ‘97%’ claim is that often people will automatically assign a negative or positive judgment to the implication of the claim (climate change is real=climate change is bad)? Why or why not?
- Later in the video Mr. Epstein states that, “...fossil fuel opponents don’t want you to know the precise magnitude of climate change. Because if you did you wouldn’t be scared of climate change, you would be scared of losing the benefits of fossil fuels.” What do you think Mr. Epstein means by this? Do you agree with his claim? Why or why not? What benefits of fossil fuels do you think he is referring to?
- In criticizing Mr. Cook’s scholarship, Mr. Epstein concludes, “A scientific researcher has a sacred obligation to accurately report his findings. Cook and researchers like him have failed us—as have the politicians and media figures who have blindly repeated the 97% claim to support their anti-fossil fuel goals.” What types of problems arise when science is funded and in other ways driven by political agendas? How can politicizing science damage the process, institution, and credibility of science?

EXTEND THE LEARNING:

CASE STUDY: Obama Press Conference

INSTRUCTIONS: Read the article “97% Climbs to 99.5%: Obama Increases Percentage of Scientists Who Agree on Climate Change,” then answer the questions that follow.

- What claims did President Obama make in his Paris press conference? What claims did President Obama add to claims that had already been made? From where do you think that the President sourced his claims? What facts ended up debunking the ‘97%’ claim that President Obama added on to?
- A fallacy is a piece of flawed reasoning meant to deceive. Mr. Epstein points out in the video that the ‘97%’ claim is, “...an example of the fallacy of equivocation—using the same term in different, contradictory ways.” In what other ways do you think global warming alarmists attempt to deceive in order to persuade people to agree with their position?
- At the end of the video, Mr. Epstein concludes, “How can we protect ourselves against this kind of manipulation? Whenever someone tells you that scientists agree on something, ask two questions: “What exactly do they agree on? And “how did they prove it?” What else do you think you can do to validate the truth of claims made in a debate or that are published?



QUIZ

DO 97% OF CLIMATE SCIENTISTS REALLY AGREE?

1. **97 percent of climate scientists agree that climate change is real.**
 - a. True
 - b. False

2. **What is the fallacy of equivocation?**
 - a. Holding an idea to be true simply because it is widely held.
 - b. Using the same term in different, contradictory ways.
 - c. Presenting an irrelevant topic to divert attention from the original issue.
 - d. Accepting an idea because of its source, rather than its merit.

3. **Who doesn't want people to know the precise magnitude of climate change?**
 - a. The Chinese government
 - b. Fossil fuel opponents
 - c. Fossil fuel supporters
 - d. Scientists

4. **The vast majority of scientific papers say _____.**
 - a. the United States is the worst polluter.
 - b. vaccines have no side effects.
 - c. human beings are not the main cause of recent warming
 - d. human beings are the main cause of recent warming

5. **What other energy source can compete on the same scale as fossil fuels?**
 - a. Wind
 - b. Solar
 - c. Hydropower
 - d. None of the above.



QUIZ - ANSWER KEY

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<http://www.cnsnews.com/news/article/barbara-hollingsworth/obama-ups-climate-change-consensus-paris-995-scientists>

97% Climbs to 99.5%: Obama Increases Percentage of Scientists Who Agree on Climate Change

By [Barbara Hollingsworth](#) | December 2, 2015 | 2:10 PM EST



President Obama gestures to reporters at a press conference at the Organization for Economic Cooperation and Development in Paris on Dec. 1, 2015. (AP photo)

(CNSNews.com) – President Obama said Tuesday that he's confident his successor will honor any climate change agreement negotiated in Paris because "99.5 percent of scientists and 99 percent of world leaders" think that climate change "is really important."

Obama's claim that there is a 99.5 percent consensus among scientists on climate change represents a 2.5 percent increase since May 16, 2013, when the president [tweeted](#): "Ninety-seven percent of scientists agree: #climate change is real, man-made and dangerous."

"Everybody else is taking climate change really seriously. They think it's a really big problem. It spans political parties," Obama said during his [press conference](#) in Paris, where the United Nations' [COP 21](#) climate change summit is being held.

Responding to a question about whether foreign leaders can believe the U.S. will keep any commitments it makes in Paris if a Republican succeeds him in the White House, Obama said:

“Whoever is the next president of the United States, if they come in and they suggest somehow that that global consensus — not just 99.5% of scientists and experts, but 99% of world leaders — think this is really important, I think the president of the United States is going to need to think this is really important.”

The origin of the “97 percent” statistic has been [traced back](#) to a 2009 study by University of Illinois/Chicago graduate student Kendall Zimmerman, who sent a survey to 10,257 earth scientists asking them two questions:

“When compared with pre-1800s levels, do you think that mean global temperatures have generally risen, fallen, or remained relatively constant?” and

“Do you think human activity is a significant contributing factor in changing mean global temperatures?”

Eighty-two percent of the 3,146 scientists who completed the survey (a 30.7% response rate) answered “yes” to question 2. That figure included 75 of the 79 individuals (97.4%) who self-identified themselves as climate scientists.

In a 2013 paper [published](#) by the Institute of Physics’s IOPScience and [cited](#) by NASA, University of Queensland climate communication fellow [John Cook](#) also stated that 97 percent of scientists who took a position on global warming agreed that humans were the primary cause.

“Among abstracts expressing a position on AGW [anthropogenic global warming], 97.1% endorsed the consensus that humans are causing global warming,” Cook and his co-authors [stated](#).

However, a peer review of Cook’s paper by [David Legates](#), a former state climatologist and professor at the University of Delaware, that was published in the April 2015 issue of *Science and Education* [debunked](#) the 97 percent consensus figure.

Legates pointed out that only 41 of the 11,944 academic papers Cook examined in his meta-analysis (0.3%) explicitly stated that most of the global warming since 1950 was caused by human activity.

“It is astonishing that any journal could have published a paper claiming a 97% climate consensus when in the authors’ own analysis the true consensus was well below 1%,” Legates wrote.

Cook’s paper was also criticized by other scientists for what they said was a number of [methodological errors](#).

“Probably the most widely repeated claim in the debate over global warming is that ‘97% of scientists agree’ that climate change is man-made and dangerous,” the three authors of [Why Scientists Disagree About Global Warming](#) wrote in a just-released book published by the Heartland Institute.

“This claim is not only false, but its presence in the debate is an insult to science.”