

Climate Change: The Defense of CO₂

(With Witnesses)



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In the *Court of Public Opinion* Carbon Dioxide (CO₂) has already been convicted of being an evil villain. CO₂ – more specifically man-made CO₂ – has been found guilty of “being the main cause of substantial, unusual, global warming.”

But its case was appealed, and a new trial has just been ordered!

Basically, there were two legal grounds for the appeal:

- a) the arguments against CO₂ were circumstantial and/or inaccurate, *and*
- b) in the first go-around, CO₂ was not allowed to put on an adequate legal defense.

The new defenders have outlined their case below. *You* be the judge and jury: carefully assess the arguments and evidence presented here, and then decide whether CO₂ is guilty as charged – or has it been framed.

(BTW if you want some sound-bite summaries of this case, see a [Physicist's View](#), and/or a [Geologist's 32 Bullet Points Proving CO₂'s Innocence](#), and/or a [Climate Scientist's Alarmism Rebuttal](#) and/or a [Climate Analyst's Conclusions](#).)

In this more technical version, each of the fifteen arguments defending CO₂ are presented with citations – for a grand total of **250+ witnesses** (studies and reports) that vigorously support our contentions. For those interested in the shorter, more simplified version, see this parallel [document](#).

1 - The prosecutor asserted that rising CO₂ *causes* global warming. However, there is considerable empirical evidence (e.g. [here](#)) that elevated levels of CO₂ *follow* global warming, not cause it. There is no historical or experimental evidence supporting CO₂ as a significant driver of atmospheric warming.

Study: [The Acquittal of CO₂](#)

Study: [The phase relation between atmospheric CO₂ and global temperature](#)

Study: [500 Million Years of Unrelatedness of Atmospheric CO₂ and Temperature](#)

Study: [Rise in temperatures and CO₂ follow each other closely in climate change](#)

Study: [Atmospheric verification of anthropogenic CO₂ emission trends](#)

Study: [Comparison of Carbon Cycle Models with Observations](#)

Report: [The Vostok Ice Core and the 14,000 Year CO₂ Time Lag](#)

Report: [Carbon Dioxide and Air Temperature: Who Leads and Who Follows?](#)

–> *At this point we petition the Judge (you) for [Summary Judgment](#) of the case against CO₂. If our contention in #1 is upheld, then everything else that follows is irrelevant.*

2 - A key part of the prosecutor's case against CO₂ was their claim that there is a “[greenhouse gas theory](#).” Legally that is a mis-statement, as it is a “greenhouse gas *hypothesis*.” The prosecutor provided no scientific proof that this *hypothesis* has been officially elevated to the status as a *scientific theory*. We contend that there is significant evidence that the greenhouse gas hypothesis is over-simplified and inaccurate.

Study: [New Insights on the Physical Nature of the Atmospheric Greenhouse Effect Deduced from an Empirical Planetary Temperature Model](#)

Study: [Falsification Of The Atmospheric CO2 Greenhouse Effects Within The Frame Of Physics](#) [Response to Comments about Falsification Report](#)

Study: [Dr. Ferenc Miskolczi destroys greenhouse theory](#)

Study: [How simple physics demolishes the Greenhouse effect](#)

Study: [On the construction of the "Greenhouse Effect Global Warming" dogma](#)

Study: [Spectral Measurements show the Greenhouse Theory Is Wrong](#)

Studies (multiple) re [Adiabatic Hypothesis](#) (an alternative perspective)

Report: [The Greenhouse Effect Fallacy](#)

Report: [Greenhouse-warming theory doesn't appear to be physically possible](#)

Report: [Why Greenhouse Gas Theory is Wrong: An Examination of the Theoretical Basis](#)

Report: [The Flaw in the Anthropogenic Global Warming Hypothesis](#)

Report: [Gravity, Not Greenhouse Gases, Provides a Warm Earth](#)

Report: [A Young Person's Guide to the Greenhouse Effect](#)

Report: [Greenhouse Effect Theory - Is It A Sound Basis?](#)

Good short video: [Greenhouse Deception](#)

Short video (Dr. Peter Ward): [Climate scientists refuse to face the reality that greenhouse-warming theory is mistaken](#)

[What is the Proof for the Greenhouse Gas Theory?](#)

[The Hidden Flaw in Greenhouse Theory](#)

[Empirical Evidence Refutes Greenhouse Gas Theory](#)

[Do Anti climate change scientists have any proofs of their own? Yes!](#)

[Why Lunar Heating/Cooling Disproves the Earth's Greenhouse Theory](#)

[Three Fatal Flaws In Greenhouse Gas Climate Science](#)

[R.I.P. Greenhouse Gas Theory: 1980-2018](#)

-> At this point we again petition the Judge (you) for Summary Judgment of the case against CO₂. If our argument in #2 is sustained, then everything else that follows is irrelevant.

3 - If the greenhouse gas hypothesis is scientifically proven, CO₂ is still a weak greenhouse gas. (In fact there are some scientists who [contend](#) that CO₂ is so impotent that it should not even be considered a legitimate greenhouse gas.)

Study by German physicists: [CO2 plays only minor role for global climate](#)

Study by Swiss physicist: [IPCC Assumptions 'Violate Reality' ...CO2 A 'Very Weak Greenhouse Gas'](#)

Study: [The potency of carbon dioxide \(CO2\) as a greenhouse gas](#)

Study: [Radiation physics constraints on global warming: CO2 increase has little effect](#)

Study: [Experimental Proof That CO2 Does Not Cause Global Warming](#)

[CO2 is a relatively weak greenhouse gas compared to water vapor](#)

[What gases are greenhouse gases?](#)

Physicist: [CO2 Retains Heat For Only 0.0001 Seconds, Warming 'Not Possible'](#)

4 - It is inappropriate to convict CO₂, when we have so little understanding about other well-known atmospheric climate players – e.g. clouds. These entities are likely more culpable than CO₂ in the global warming matter, individually or in concert.

Studies: [Cloud Climatology – how little we know](#)

Study: [Global Warming driven by changes in cloud cover, not CO₂](#)

Study: [Robust Scientific Evidence that Clouds \(not CO₂\) Control Earth's Climate](#)

Study: [Cloud cover accounts for the real changes in global temperatures](#)

Study: [Climate Models Under-estimate Cloud Cooling Effect](#)

Study: [Clouds have large negative cooling effect on Earth's radiation budget](#)

Study: [Evidence for climate change in the satellite cloud record](#)

Short video: [The Cloud Mystery](#)

NASA Report: [Water Vapor Confirmed as Major Player in Climate Change](#)

Report: [The IPCC Disguises the Role Water Vapor Plays in Climate Change](#)

Report: [Phytoplankton are much bigger players in CO₂ levels than realized](#)

Study: [Episodic Volcanoes Drive Long-term Climate Cycle](#)

Study: [Natural Variability Controls CO₂ Levels, Not Man](#)

[Dust Plays a Huge Role in Climate Change](#)

See a [collection of studies](#) regarding particulates and climate change

[Insects produce more CO₂ than all manmade sources combined](#)

[Satellite Shows that Most CO₂ Comes from Third World Rain Forests...](#)

5 - Also, there is considerable data that some non-atmospheric culprits (e.g the Sun) *are* much more responsible for any global warming – and have no connection to our client.

Short video: [Scenario #4 - Real Climate Science](#)

Peer-reviewed Study: [Sun, not CO₂ dictating Climate](#)

Study: [Proof that the sun, not CO₂, drives Earth's climate](#)

Study: [Sea level will rise 3 to 5 meters by 2100 due to the sun, not CO₂](#)

Study: [Solar Wind has Twice the Global Warming Effect of El Niño](#)

Study: [Sun's impact on climate change quantified for first time](#)

Study: [Clear solar vs climate correlation since 2,000 years ago: CO₂ irrelevant](#)

Study: [An Updated View about Carbon Dioxide and Climate Change](#)

Studies: [Fake Warming + A Neglected Sun = Manmade Climate Change](#)

Report: [It's the Sun stupid - The minor significance of CO₂](#)

Book Review: [The Neglected Sun](#)

[What controlled Earth climate for the last 2,000 years: CO₂ or the Sun? YOU judge](#)

[NASA Images Illustrate Sun as a Driver of Global Warming](#)

6 - Even if CO₂ is scientifically proven to cause some global warming, there is significant evidence concluding that *manmade* CO₂ is only a tiny part of the overall global CO₂ generated, *plus* the impact of the manmade CO₂ is small.

Studies: [100 scientific papers: CO₂ has minuscule effect on climate](#)

Study: [No Experimental Evidence for Significant Anthropogenic Climate Change](#)

Study: [Human CO2 has little effect on atmospheric CO2](#)
Study: [CO2 Has Risen By 110 PPM Since 1750. The Human Contribution Is 17 PPM](#)
Study: [The Physics Model Carbon Cycle for Human CO2](#)
Study: [Unveils Natural Explanation For Climate Change](#)
Study: [Why human CO2 does not change climate](#)
Report: [Man-made CO2: 3% of 3% of 0.1%](#)
Report: [Quantifying the Anthropogenic Contribution to to Atmospheric CO2](#)
Report: [Politics and The Greenhouse Effect](#)
[Manmade CO2 Does Not Cause Measurable Warming](#)
[90 Italian Scientists Sign Petition: CO2 Impact On Climate Unjustifiably Exaggerated](#)
[Man-made CO2 could only cause warming of 'a few tenths of a degree, if at all'](#)
Here is a [collection](#) of all major sources of CO2, quantified (see Figure 3)

7 - The residence time of CO₂ in the atmosphere is a critical matter, as the longer it stays around, the longer any purported artificial imbalance will exist. In the trial the prosecutor robotically – but without scientific proof – cited the IPCC position (also unproven) that CO₂ atmospheric residence time is 100+ years. We contend that there is superior evidence indicating that the CO₂ atmospheric residence time is more like 10 years (or less) – an extraordinarily important difference, with major ramifications.

36 Peer-Reviewed Studies: [The CO2 Atmospheric Residence Time is 10± Years](#)
Study: [Scrutinizing the carbon cycle and CO2 residence time in the atmosphere](#)

8 - The evidence also says that the CO₂ global effects are basically saturated. This means that what (if any) harm that CO₂ allegedly might have done, the worst has already occurred. In other words if we doubled the concentration of CO₂ (which could take over a hundred years), that CO₂'s additional effect on climate would only increase something like 10%. (Two relevant technical factors here are Equilibrium Climate Sensitivity [ECS] and Transient Climate Response [TCR]. They are explained [here](#).)

Study: [Doubling Atmospheric CO2 Would Increase "Heating By less Than 0.01°C"](#)

Study: [The Inconstancy of Transient Climate Response](#)

Study: [The Impact of Recent Forcing ... on Estimates of Climate Sensitivity](#)

Study: [Empirically-constrained climate sensitivity and the social cost of carbon](#)

Report: [Equilibrium Climate Sensitivity](#)

Report: [Equilibrium Climate Sensitivity \(ECS\) with a Doubling of CO2](#)

Report: [Equilibrium Climate Sensitivity - A Practical Measure for Climate Change and a Grand Scientific Challenge](#)

Report: [The Greenhouse Effect of Atmospheric CO2](#)

Report: [The Effectiveness of CO2 as a Greenhouse Gas Becomes Ever More Marginal with Greater Concentration](#)

Report: [Lindzen On Climate Sensitivity](#)

[The Transient Climate Response \(TCR\) revisited from Observations \(once more\)](#)
[CO2 Can't Cause the Warming Alarmists Claim it Does](#)

9 - A contradictory matter with the initial trial is that while the prosecution attempted to claim the scientific mantle to try to give their anemic case credibility – on the other hand they abandoned the [Scientific Method](#) in their arguments! Since this case is should be about Science (however see #15), then why wouldn't the Scientific Method be front and center in the prosecution's case? We contend that the prosecution should be required to adhere to real Science. (*Note: On a related matter the [Scientific Process](#) consists of a comprehensive, objective, transparent and empirical-based assessment.*)

Study: [Some Methodological Issues in Climate Science](#)

Report: [Climate Alarmists have Abandoned the Scientific Method](#)

Report: [The Threat to the Scientific Method](#)

Report: [The Scientific Method and Climate Science](#)

Report: [Science Without Method](#)

Report: [The Scientific Method](#)

Report: [Redefining the Scientific Method—as Climate Change Science Is Special](#)

Report: [Alarmist Climate Researchers Abandon Scientific Method](#)

Report: [The Flawed Methodology Behind Cost of Climate Change Studies](#)

Report: [Climate change, the scientific method and the search for truth](#)

Report: [Fewer than 1% of papers in Scientific Journals, follow Scientific Method](#)

Report: [On The Scientific Method](#)

Report: [Global Warmism and the Antiscientific Method](#)

US Senator Smith: [Climate Change and the Scientific Method](#)

10-Computer models were extensively used to convict CO₂ in the initial trial – yet they have *not* been demonstrated to be reliable references for a case of this magnitude and complexity. Further, they are provably inaccurate in this situation. As such we petition the court to disallow all references to any computer model conclusions.

For full details, read this comprehensive [Report](#), Section Three. *Some sample refs:*

Slideshow: [Climate Computer Models - The Good, the Bad and the Ugly](#)

Dr. William Happer's short [video](#) about climate computer models

Dr. Judith Curry: [Escape from Model Land](#)

Dr. Ross McKittrick: [Two Peer-Reviewed Studies: Models Overstate Warming](#)

Dr. Patrick Frank: [Climate Change Computer Models are Unreliable](#)

Dr. David Henderson, et al: [Flawed Computer Models](#)

Dr. Sam Furfari, et al: [IPCC Climate Modeling Opens Door To 'Fake Conclusions'](#)

Dr. Mototaka Nakamura: [A Climate Modeler Spills the Beans](#)

Dr. Patrick Michaels, et al: [The Great Failure of Climate Computer Models](#)

Dr. Roger Pielke: [It's Time to Move Beyond the Toy Models Guiding Climate Policy](#)

11-The prosecutor tried to bolster their weak circumstantial case by claiming that "97% of scientists" support their position. In other words: "almost everyone believes that our client is guilty." Our rebuttals are that: **a)** the 97% claim is totally false, and **b)** what others believe is irrelevant, as a trial is about provable facts, not opinions.

For full details, read this comprehensive [Report](#), Section Two. *Some sample refs:*
[97 Articles](#) refuting the bogus 97% claim
1500+ papers support an AGW skeptical position, e.g.: [2017](#), [2018](#), [2019](#)
Dr. John Robson: [Excellent video debunking the 97% scientists AGW claims](#)
Dr. David Legates, et al: [Climate Consensus and 'Misinformation'...](#)
Dr. Judith Curry: [Re-evaluating the Manufacture of the Climate Consensus](#)
Dr. Robert Murphy: [The Bogus "Consensus" Argument on Climate Change](#)

12-In the original trial, CO₂ was illegally slandered by the prosecution calling it a “pollutant.” That terminology is not only inaccurate, but it is prejudicial. CO₂ is a necessary ingredient for life. Every person on the planet inhales and expels CO₂ every minute of the day. CO₂ is not a “pollutant” in any normal or legal understanding of the word.

US Supreme Court Justice: [Carbon dioxide is not a pollutant](#)
Swiss Climate Institute Director: [Absurd To Call CO2 a Pollutant](#)
Report: [Is Fighting Climate Change Really Fighting Pollution?](#)
Study: [CO2 Is Not a Polutant](#)
Report: [Is CO2 a Pollutant?](#)
Short video: [Is CO2 a Pollutant?](#)
[The 'Carbon Emissions' Deception: No, Carbon Dioxide Is Not a Pollutant](#)
[How scientist's disputed views about pollution are shaping EPA](#)
[Putting fossil fuel “pollution” into perspective](#)
[How Carbon Dioxide Became a 'Pollutant'](#)
[When does carbon dioxide become a pollutant?](#)

13-Even if CO₂ is scientifically proven to cause some global warming, the evidence says that CO₂ is a **net benefit** – so restricting it would be a **net societal liability**. (Note: climate and global temperatures have *always* changed and have *never* been static. So our choices are for: the planet to get warmer *or* the planet to get colder. It is demonstrably better for the planet to get warmer.)

Peer-Reviewed Study: [The Impact of Reduced CO2 Concentrations on Agriculture](#)
Peer-Reviewed Study: [CO2 Cuts Could Impoverish the World](#)
Peer Reviewed Study: [Positive Impact of Human CO2 Emissions](#)
Study: [Rise in CO2 has Greened the Planet](#)
Report: [The Many Benefits of Atmospheric CO2 Enrichment](#)
Report: [CO2 Benefits the World](#)
Report: [CO2, the Good News](#)
Report: [CO2 Reduction is a Mass Murder Policy](#)
Physicist Freeman Dyson: [The Benefits of CO2 for our Planet](#)
Matt Ridley: [The Benefits of CO2](#)
Forestrypedia: [The Benefits of CO2](#)
[CO2: Health Effects, Uses and Benefits](#)

14-The warming remedies promoted by the prosecution (e.g. industrial wind energy) have no scientific basis as meaningful solutions. In fact there is good evidence that they may actually make global warming *worse*. This proves that either the prosecution is technically incompetent, or is being dishonest in their case against CO₂ (*see #15*).

Report: [Taking the Wind Out of Climate Change](#)

Report: [Wind Energy Does Little to Reduce CO2 Emissions](#)

Report: [Wood Chip Plants Have 2x and 4x the CO2 of Coal and Gas Plants](#)

Study: [Diesel cars produce less CO2 than Electric vehicles](#)

Study: [Ethanol Produces More Global Warming Pollution Than Gasoline](#)

[Electric vehicles emit more CO2 than diesel ones](#)

[The Green Paradox: Why Europe's Climate Policies Increase Global CO2 Emissions](#)

15-The defense contends that CO₂ is a ruse for the prosecutor's real agenda: power, control, world gov't, wealth redistribution. Effectively our freedoms are at stake here.

[Climatologist: "CO2 A Scapegoat" ...IPCC "A Marketing Organization"](#)

[The hidden agenda behind 'climate change'](#)

[The UN's Climate Agenda is So Extreme Its Own Analysts Can't Defend It](#)

[COP 24: Climate summit language reveals hidden agenda](#)

[Climate Movement Drops Mask and Admits Communist Agenda](#)

[What's the Real Agenda Behind Climate-change Alarmism?](#)

[The Political Agenda Behind the Man-Made Global Warming Movement](#)

[Climate Change: A Perfect Storm for an End Run on Liberty](#)

UN's Objective: [Redistribute the world's wealth by climate policy](#)

[The Left's Solution to Climate Change: Human Extinction](#)

Study: [Connections between the Paris Agreement and the 2030 Agenda](#)

[The Real Western Civilization Emergency](#)

Report: [The Big Picture as to what is going on](#)

So, your Honor, that's the basics of our case, which contends that CO₂ is an innocent bystander that was scooped up in an illegal dragnet. To disguise their real motives the prosecutor has thrown a potpourri of innuendo, hearsay, speculation, pseudo-science, and outright fabrication against the wall, in hopes that something will stick. It has not.

Despite this abuse of process, we have politely and scientifically refuted each and every so-called claim against our client, Mr. Carbon Dioxide (*aka* CO₂). After giving our rebuttals careful consideration, it will be obvious that the prosecutor's assertion that "the science is settled" is yet another indictment of their deceptions and/or incompetence.

Our case is premised on legal severability: that if for whatever reason one of our contentions is deemed inadequate, that this decision does not affect the consideration or veracity of any of our remaining arguments.

Following your thorough cross-examination of each of our 250+ witnesses (and your verification of their credibility and competence), we again ask for Summary Judgment, as the prosecution has not only failed to prove their core claims, but have ignored abundant exculpatory evidence regarding our client.

We then ask the court's indulgence on one additional, closely-related critical matter. Subsequent to our client's unlawful conviction, this same overzealous prosecutor filed charges (and won) against another unjustly maligned party: Mr. Fossil Fuels.

An examination of the legal history here concludes that the prosecution used the unwarranted verdict in our initial trial to then convict this associate of our client. If you support our extensive case in defense of CO₂, we appeal to the Court that they overturn the verdict against Mr. Fossil Fuels, and award him a new trial. Thank you.

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PS – Below are some additional question that came up subsequent to the initial trial. We did not address them in our formal court case here, as they are not directly connected to the innocence of CO₂:

- 1 - *What about the Hockey Stick graph?* That has been thoroughly debunked, multiple times (e.g. see [here](#), [here](#), [here](#), [here](#), [here](#) and [here](#) for just a few examples).
- 2 - *What about the IPCC?* For more information, read this exposé [Report](#), Section One.
- 3 - *What about the claims of increased extreme weather events?* For full details, read this comprehensive [Report](#), Section Four.
- 4 - *What about the Sea Level Rise (SLR) issue?* See [here](#), [here](#), [here](#), [here](#), [here](#) and [here](#).

To get a better technical understanding of the SLR issue, please study Dr. Judith Curry's website (e.g. [here](#)). Also search the site for more reports. Note what she says: "My original motivation for assessing IPCC's scenarios was that all of the really catastrophic sea level rise scenarios for the 21st century seem to depend on rather extreme (if not impossible) levels of CO₂..."

PPS – Misc other quality materials, that cover related aspects of the CO₂ issue:

[The CO₂ Derangement Syndrome – a historical overview](#)

Report (Dr. Roy Spencer): [My Global Warming Skepticism, for Dummies](#)

Study: [Propagation of Error and Reliability of Global Air Temperature Projections](#)

Study: [Economic Impact of Energy Consumption Change Caused by Climate Change](#)

Report: [Flaws In Applying Greenhouse Warming To Climate Variability](#)

[GreenHouse Gas Endangerment? Evidence?](#)

For additional studies about Climate Change (and CO₂), please do a search over the 13+ years of [Archives of the AWED Newsletter](#).

Also check out this [extensive list](#) of reasonable books on Climate Change.