

**In The
Supreme Court of the United States**

—◆—

AMERICAN ELECTRIC POWER COMPANY, INC., *et al.*,

Petitioners,

v.

STATE OF CONNECTICUT, *et al.*,

Respondents.

—◆—

**On Writ Of Certiorari To The
United States Court Of Appeals
For The Second Circuit**

—◆—

**BRIEF OF SOUTHEASTERN LEGAL
FOUNDATION, INC., ROSS McKITRICK, Ph.D.,
LAURENCE I. GOULD, Ph.D., AND
PATRICK J. MICHAELS, Ph.D., AS AMICI CURIAE
IN SUPPORT OF PETITIONERS**

—◆—

SHANNON LEE GOESSLING

Counsel of Record

SOUTHEASTERN LEGAL

FOUNDATION, INC.

2255 Sewell Mill Road

Suite 320

Marietta, GA 30062

(770) 977-2131

shannon@southeasternlegal.org

EDWARD A. KAZMAREK

KAZMAREK GEIGER &

LASETER LLP

3490 Piedmont Road N.E.

Suite 350

Atlanta, GA 30305

(404) 812-0840

HARRY W. MACDOUGALD

CALDWELL & WATSON LLP

5825 Glenridge Drive, N.E.

Building Two, Suite 200

Atlanta, GA 30328

(404) 843-1956

Attorneys for Amici Curiae

QUESTION PRESENTED

Whether there is any *de minimis* threshold below which a defendant's contributions to a plaintiff's alleged harms are too remote and inconsequential to plausibly satisfy the requirements of traceability and redressability.

TABLE OF CONTENTS

	Page
Question Presented	i
Table of Contents	ii
Table of Authorities	iii
Interest of the <i>Amici Curiae</i>	1
Summary of Argument	4
Introduction	5
Argument	9
I. The Harms Alleged by Plaintiffs Are Not “Traceable” to the Acts or Omissions of the Named Defendants	10
II. Plaintiffs’ Alleged Harms Cannot Be Redressed By Any Conceivable Judicial Remedy	13
III. The Extent to Which Anthropogenic Greenhouse Gases Cause Global Warm- ing Is Substantially Uncertain	20
IV. Plaintiffs’ Claims Present Political Not Scientific Questions	37
Conclusion	39
Appendix	App. 1

TABLE OF AUTHORITIES

Page

CASES

<i>Ashcroft v. Iqbal</i> , 556 U.S. ___, 129 S.Ct. 1937 (2009).....	6
<i>Bell Atlantic v. Twombly</i> , 550 U.S. 544 (2007)	6, 7
<i>Bennett v. Spear</i> , 520 U.S. 154 (1997)	13
<i>Center for Biological Diversity v. NHTSA</i> , 538 F.3d 1172 (9th Cir. 2008).....	22
<i>Central Valley Chrysler-Jeep, Inc. v. Goldstene</i> , 529 F.Supp.2d 1151 (E.D. Cal. 2007).....	23
<i>CGM v. Bellsouth Telecommunications, Inc.</i> , 2010 U.S. Dist. LEXIS 63450 (W.D.N.C. Mar. 16, 2010)	7
<i>Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.</i> , 204 F.3d 149 (4th Cir. 2000).....	13
<i>Liberty University, Inc. v. Merrill</i> , 2010 U.S. Dist. LEXIS 125922 (W.D. Va. Nov. 30, 2010).....	6, 7
<i>Lujan v. Defenders of Wildlife</i> , 504 U.S. 555 (1992).....	4, 6, 7, 13
<i>Massachusetts v. EPA</i> , 549 U.S. 497 (2007).....	<i>passim</i>
<i>McCain v. Hermann Law Office</i> , 2010 U.S. Dist. LEXIS 94512 (D.Vt. Jul. 7, 2010).....	7
<i>NASA v. Nelson</i> , 2011 WL 148254 (S.Ct. Jan. 19, 2011)	23
<i>Rocky Mtn. Farmers Union v. Goldstene</i> , 719 F.Supp.2d 1170 (E.D. Cal. 2010).....	22

TABLE OF AUTHORITIES – Continued

	Page
STATUTES	
42 U.S.C. § 7475(a).....	12
42 U.S.C. § 7479(1).....	12
42 U.S.C. § 7602(j).....	12
42 U.S.C. § 7661a(a).....	12
OTHER AUTHORITIES	
CCSP 2006 Synthesis and Assessment Report p. 116, in figure 5.7E.....	33
CCSP 2006 Synthesis and Assessment Report Product, p. 25, figure 1.3.....	33
Climatic Research Unit, Data, Temperature, http://www.cru.uea.ac.uk/cru/data/temperature/	16
East Anglia emails, http://www.eastangliaemails.com/emails.php?eid=1052&filename=1255523796.txt	34
Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed.Reg. 66,496	22
Energy Information Administration, Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants, http://www.eia.doe.gov/cneaf/electricity/epa/epat3p9.html	18

TABLE OF AUTHORITIES – Continued

	Page
Energy Information Administration, Table 11.19 World Carbon Dioxide Emissions From En- ergy Consumption, 1998-2007, http://www. eia.doe.gov/aer/txt/ptb1119.html	17
IPCC AR4 WG1 § 10.5.1	31
IPCC AR4 WG1 § 2.2	14
IPCC AR4 WG1 § 2.3.1	14
IPCC AR4 WG1 § 2.3.4	21
IPCC AR4 Table 2.6	30
IPCC AR4 WG1 § 2.9.1, Table 2.11	25, 26
IPCC AR4 WG1 § 8.4.7	27
IPCC AR4 WG1 § 9.2.2	32
IPCC AR4 WG1 § 10.3.2.1	33
IPCC AR4 FAQ 1.1	25, 26
IPCC AR4 WG1 § 1.6	24
IPCC AR4 WG1 § 8.6.3.2	30
IPCC AR4 WG1 § 11.10.1	35
IPCC AR4 WG1 § 8.6.2.3	28, 29
IPCC AR4 Summary for Policymakers, p. 12	15, 30
IPCC AR4 WG1 Chap. 8, FAQ 8.1	35
IPCC AR4 WG1 Chap. 9, Executive Summary	24
IPCC AR4 WG1 Glossary	28

TABLE OF AUTHORITIES – Continued

	Page
IPCC Official: “Climate Policy Is Redistributing The World’s Wealth” The Global Warming Policy Foundation, http://thegwpcf.org/the-climate-record/1877-ipcc-official-climate-policy-is-redistributing-the-worlds-wealth.html	37
IPCC TAR § 6.5.3, Table 6.2.....	15
IPCC TAR § 12.22.....	27
IPCC TAR WG1 The Scientific Basis § 14.2.2.2.....	28
<i>Key Judge Downplays Prospects for Successful Climate Damages Suits</i> , Inside EPA, March 5, 2010 at 18.....	38
Knight, J., <i>et al.</i> (2009), “Do global temperature trends over the last decade falsify climate predictions?” In: Peterson, T. C., & Baringer, M.O. (eds.), “State of the Climate in 2008” Special Supplement to the Bull. Am. Meteorol. Soc., 90-91.....	32
Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed.Reg. 25324.....	18
McKittrick, Ross R., <i>et al.</i> (2010), <i>Panel and Multivariate Methods for Tests of Trend Equivalence in Climate Data Sets</i> . 11 Atmospheric Science Letters 270, 276 doi: 10.1002/asl.290.....	32
NOAA, Trends in Atmospheric Carbon Dioxide, available at http://www.esrl.noaa.gov/gmd/ccgg/trends/global.html	11

TABLE OF AUTHORITIES – Continued

	Page
Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed.Reg. 31514.....	12
“Q&A: Professor Phil Jones,” BBC News, Feb. 13, 2010, http://news.bbc.co.uk/2/hi/8511670.stm	34
Spencer, Roy W., <i>et al.</i> , <i>On the diagnosis of radiative feedback in the presence of unknown radiative forcing</i> 110 GEOPHYSICAL RESEARCH LETTERS D16109, doi:10.1029/2009JD013371 (2010).....	29
Stainforth, David, <i>et al.</i> , <i>Confidence, uncertainty and decision-support relevance in climate predictions</i> , Phil. Trans. R. Soc. A 2007 365, 2145-2161, 2154	31
U.S. Energy Information Administration, International Energy Statistics, http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8	14

INTEREST OF THE *AMICI CURIAE**

Southeastern Legal Foundation, Inc. (SLF) is a national constitutional public interest law firm and policy center that promotes the public interest in the proper construction and enforcement of the laws and the Constitution of the United States. Founded in 1976, SLF was established for the purpose of participating in the public policy process and engaging in litigation in the public interest. In addition to legislative initiatives and promulgation of programs designed to inform and educate the public, the organization's attorneys represent plaintiffs in courts throughout the country to enforce laws advancing its interests through litigation.

In particular, SLF advocates these core principles in the area of environmental regulation, where it is increasingly common to find impairments of economic freedom, excessive government, and restrictions on the free enterprise system.

SLF is a petitioner before the D.C. Circuit Court of Appeals in five cases challenging the Environmental Protection Agency's suite of rules for regulation of human emissions of greenhouse gas regulations. Case

* This brief is authored in its entirety by the attorneys for SLF identified on the cover, and no person or entity other than SLF, its members or its counsel has made any monetary contribution to the preparation or submission of this brief. SLF has obtained permission to file this brief from all parties hereto. Their letters of consent have been filed with the Clerk pursuant to Rule 36.

Nos. 10-1035 and 10-1239 (consolidated with 09-1322), 10-1083 and 10-1131 and (consolidated with 10-1073) and 10-1094 (consolidated with 10-1092).

Ross McKittrick, Ph.D., is a tenured, full professor of economics at the University of Guelph in Canada. He is a Senior Fellow of the Fraser Institute, and a member of the Academic Advisory Boards of the John Deutsche Institute for Economic Policy at Queen's University and the Global Warming Policy Foundation in London, UK. His research areas include applications of statistical methods in climate measurement, the relationship between economic growth and pollution, and regulatory mechanism design. His research has appeared in such journals as *The Journal of Environmental Economics and Management*, *Economic Modeling*, *The Energy Journal*, *Journal of Geophysical Research*, *Geophysical Research Letters*, and *Proceedings of the National Academy of Sciences*. He is the author of the advanced textbook *Economic Analysis of Environmental Policy*, published by the University of Toronto Press, and coauthor of *Taken By Storm: The Troubled Science, Policy and Politics of Global Warming* which was a recipient of the 2002 Donner Prize for Best Book on Canadian Public Policy. Professor McKittrick is widely-cited around the world as an expert on global warming and environmental issues. His views have been published or broadcast many times in national and international media and presented at academic conferences in Canada, the United States and Europe. He has testified before the U.S. Congress and the Canadian

Parliamentary Finance and Environment Committees. In 2006 he was one of 12 experts from around the world asked to brief a panel of the U.S. National Academy of Sciences on paleoclimate reconstruction methodology. Dr. McKittrick has been involved in the analysis of climate change, including both policy and physical science issues, for nearly twenty years, and feels it is important that decision-makers have access to clear and reliable information in light of the complexities and the high stakes involved.

Laurence I. Gould, Ph.D., Professor of Physics at the University of Hartford, has been studying global warming and climate change since 2003 and has given many presentations on the topic. He is a past Chair (2004) of the New England Section of the American Physical Society, and has been a Visiting Fellow at Yale University (History of Science, Philosophy of Science). Dr. Gould is concerned that the corruption of climate science is having a severe negative impact on the economy and the entire educational system and if left unchecked will also corrupt science in general with further impairment of human life.

Patrick J. Michaels, Ph.D., is Senior Fellow in Environmental Studies at the Cato Institute and is a Distinguished Senior Fellow in the School of Public Policy at George Mason University. He is an *amicus* in this brief in his individual capacity only as the Cato Institute is filing its own *amicus* brief in this case. He is a past president of the American Association of State Climatologists and was program chair for the Committee on Applied Climatology of the

American Meteorological Society. Dr. Michaels was also a research professor of Environmental Sciences at University of Virginia for thirty years. Dr. Michaels was a contributing author and is a reviewer of the United Nations Intergovernmental Panel on Climate Change. He has researched climate change science and policy for nearly four decades and is concerned, as a private citizen, about efficient regulation of environmental problems.



SUMMARY OF ARGUMENT

Plaintiffs cannot satisfy any of the requirements of Article III standing. The defendants' emissions of carbon dioxide (CO₂) make such a *de minimis* contribution to the global CO₂ concentration and to global average surface temperature that plaintiffs cannot plausibly allege either traceability or redressability as required by *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).

Though it is assumed by many that there is no meaningful scientific controversy surrounding human-caused global warming, the United Nations Intergovernmental Panel on Climate Change (IPCC) reports on which plaintiffs rely plainly disclose substantial scientific uncertainty about multiple fundamental climate processes. These uncertainties afflict the extent to which global warming can be attributed to human emissions of greenhouse gases. In recognition of these uncertainties, the Court should proceed with due

caution on the question of the relationship between climate change and anthropogenic emissions of greenhouse gases, leaving the issue open for full adversarial development in other proceedings, if any.

Finally, the question of global warming and climate policy is inherently political, as even its proponents have candidly admitted. The political question doctrine is perfectly suited to this case, and would protect the judiciary from controversies it cannot handle, and preserve the balance of power with the other branches and the sovereignty of electorate on a momentous public issue.



INTRODUCTION

The District Court dismissed plaintiffs' suit based on the political question doctrine, and therefore did not reach the question of standing. 406 F.Supp.2d 265, 267, 271 n.6 (S.D.N.Y. 2005).

The Second Circuit reversed the District Court on the political question issue, and therefore reached standing and concluded that plaintiffs met every test of standing. 582 F.3d 309, at 315 (2nd Cir. 2009).

The Second Circuit held plaintiffs met the standing requirements of traceability and redressability because the magnitude of plaintiffs' injuries would supposedly be less if defendants' emissions were reduced than if they were not reduced, 582 F.3d at 349. This "every little bit helps" rule has no limits

and no place to stop. How little is too little to make a federal case?

Accordingly, this case presents the question of whether there is any *de minimis* threshold below which a defendant's contributions to a plaintiff's alleged harms are too inconsequential to plausibly satisfy the requirements of traceability and redressability.

The question of whether there is a lower limit to the "every little bit helps" rule is merely begged, not answered by the boilerplate rules of pleading standing, such as the chestnut that "general factual allegations of injury resulting from the defendants' conduct may suffice." *Lujan*, 504 U.S. at 561. While it is fairly said that at the pleading stage plaintiffs are not required to present scientific evidence to prove the elements of standing, they must nevertheless present a *plausible* statement of a justiciable claim. *Bell Atlantic v. Twombly*, 550 U.S. 544 (2007); *Ashcroft v. Iqbal*, 556 U.S. ___, 129 S.Ct. 1937 (2009). Thus, in *Liberty University, Inc. v. Geithner*, 2010 U.S. Dist. LEXIS 125922 (W.D. Va. Nov. 30, 2010), the court dismissed the plaintiff's challenge of the Patient Protection and Affordable Care Act because of lack of standing, stating as follows:

"The party invoking federal jurisdiction bears the burden of establishing" the elements of standing. . . . The plaintiff must support each element of the standing requirement with "the manner and degree of evidence" required at the motion to dismiss stage. . . .

In the past, this meant that the plaintiffs allegations were accepted as true. . . . The decisions of the Supreme Court of the United States in *Iqbal* and *Twombly*, however, clarify that, to survive a motion to dismiss, the plaintiff's allegations must present sufficient facts to be plausible.

Id., at 12-13. See also, *McCain v. Hermann Law Office*, 2010 U.S. Dist. LEXIS 94512 (D.Vt. Jul. 7, 2010) (applying *Iqbal/Twombly* "plausibility" requirements in dismissing plaintiff's claims for lack of standing); and *CGM v. Bellsouth Telecommunications, Inc.*, 2010 U.S. Dist. LEXIS 63450 (W.D.N.C. Mar. 16, 2010) (court recommended that plaintiff's claim be dismissed for lack of standing because plaintiffs claims did not meet the *Iqbal/Twombly* plausibility requirement.)

The Second Circuit failed to require the plaintiffs to meet even minimal standards of plausibility with respect to their standing.

This was erroneous. Although the review of standing is not as demanding at the pleading stage as it would be at the summary judgment stage, *Lujan*, 504 U.S. at 561, "standing" is nevertheless a jurisdictional requirement under Article III. A patently improbable collection of unsupportable allegations does not magically confer jurisdiction where it would not otherwise exist. There are minimal thresholds of plausibility, traceability and redressability that must be satisfied. Standing is "an essential and unchanging part of the case-or-controversy requirement of Article III," *Lujan*, 504 U.S. at 560, and requires

meaningful consideration where the plaintiffs' standing is doubtful. In other words, while the Court should take plaintiffs' *factual* allegations for what they are at the pleading stage, whether those facts state a plausible and *legally sufficient* grounds for standing must be determined by the court.

The Second Circuit accepted plaintiffs' assertion that "defendants' continued emissions of carbon dioxide *contribute* to global warming." 582 F.3d at 345 (emphasis added). This contribution to harm was held to be actionable under the law of public nuisance. The triviality of the injuries was no bar to suit because "the size of injury is not germane to standing analysis." *Id.* at 347, citing *Public Interest Research Group of New Jersey, Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 72 n.8 (3d Cir. 1990), citing *United States v. Students Challenging Regulatory Agency Procedures*, 412 U.S. 669, 689 n.14 (1973). For traceability purposes, then, "every little bit hurts."

On redressability, the Court held "the magnitude of plaintiffs' injuries will be less if defendants' emissions are reduced than they would be without a remedy." 582 F.3d at 349. According to the Second Circuit, any reduction, by any person, in any amount, in any location, is sufficient for Article III standing. For redressability purposes, therefore, "every little bit helps."

Neither the Complaints nor the Second Circuit's opinion quantify how little defendants' emissions actually contribute to global warming, or how little

global warming would be avoided by granting the relief sought. As set forth below, those figures can be calculated and if they could speak they would say “*de minimis non curat lex.*” Assuming the science on which plaintiffs rely is correct, 10 years of defendants’ total emissions contributes 0.0047°C in warming, which is 10 times smaller than the level of precision in measurement of global average surface temperature. The “relief” plaintiffs seek would accomplish a temperature reduction of 0.00071°C, or 7.1 ten-thousandths of a degree, 71 times smaller than the smallest change that can be detected.



ARGUMENT

As is more fully shown below, based on any plausible view of the factual nature of plaintiffs’ claims, and any reasonable reading of applicable law, plaintiffs cannot show that their alleged injuries are in any meaningful way “traceable” to the acts or omissions of the named defendants, or that any feasible set of judicially fashioned remedies would redress plaintiffs’ alleged harms. For these reasons, whether or not this Court also reverses the Second Circuit on other grounds (such as political question), the Second Circuit’s rationale in finding that plaintiffs had standing should be expressly reversed so that it does not stand available for use in future cases.

I. THE HARMS ALLEGED BY PLAINTIFFS ARE NOT “TRACEABLE” TO THE ACTS OR OMISSIONS OF THE NAMED DEFENDANTS.

Carbon dioxide is a ubiquitous and necessary element of the carbon cycle, which is fundamental and essential to life on earth. Carbon dioxide is both the naturally occurring product of the oxidation of any carbon-containing material and an essential nutrient for all photosynthetic processes. All animals and insects emit CO₂ every time they exhale. Bacteria and fungi release CO₂ to the atmosphere as they decompose organic detritus. CO₂ is emitted from the combustion of fossil fuels and the production of cement. In essence, natural emissions of CO₂ are a necessary and essential aspect of all life on earth.

Plaintiffs allege defendants emit 650 million metric tons of CO₂ per year, 406 F.Supp.2d 265, 268 (S.D.N.Y. 2005), which is alleged to constitute 25% of U.S. electric power industry’s emissions, which themselves are said to be 10% of global CO₂ emissions. *Id.* According to the complaint, therefore, defendants are responsible for approximately 2.5% of all human emissions.

As a constituent of the atmosphere, CO₂ is a trace gas. Atmospheric CO₂ levels from all sources are

currently approximately 390 parts per million on a volumetric basis (“ppmv”).¹

Plaintiffs claim their damages are fairly traceable to defendants’ 2.5% contribution to total human CO₂ emissions, while ignoring the sources of the other 97.5%. This contention could only be true if there is no lower threshold to traceability for standing purposes. It is a fact that every vehicle, every apartment building, every restaurant, every home, every office building, every school, and essentially every other human enterprise is a “source” of carbon dioxide. All therefore “contribute” to atmospheric CO₂ levels to some extent and hence to global warming and hence to plaintiffs’ alleged damages. Absent a threshold of insignificance, all are subject to suit under the Second Circuit’s theory. For example, a typical office building in the Northeast emits approximately 20 pounds of CO₂ per year per square foot of office space.² This means that the offices of the EPA Headquarters emit something in the range of 8000 tons per year of CO₂.³ The offices of the Second Circuit, and even the offices of this esteemed Court, would likewise be “sources” of

¹ NOAA, Trends in Atmospheric carbon dioxide, available at <http://www.esrl.noaa.gov/gmd/ccgg/trends/global.html> (last visited Feb. 2, 2011). In other words, each cubic foot of air contains approximately 390-millionths of a cubic foot of CO₂.

² See http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager_carbon (last visited Feb. 3, 2011).

³ Assuming EPA Headquarters has 4000 employees and is a typical office environment with 200 square feet of office space per employee.

CO₂. Even with a threshold of “major” sources as defined under the Clean Air Act, namely 100 tons per year,⁴ EPA estimates that the number of major sources would exceed 6 million in the United States alone.⁵ This is why even EPA concluded that defining CO₂ as a “pollutant” under the Clean Air Act and then applying the literal wording of the Act to CO₂ emissions would necessarily lead to “absurd” results.⁶ The Second Circuit’s nuisance theory, having no floor at all, leads to even more absurd results.

To satisfy the causation requirement, the alleged injury must be “fairly traceable to the actions of the

⁴ These thresholds are built into the definitions of “major emitting facility” and “major source” set forth at CAA §§ 169(1) and 302(j), 42 U.S.C. §§ 7479(1) and 7602(j), which establish the applicability of the PSD preconstruction permit program and Title V operating permit program, respectively. *See* CAA § 165(a), 42 U.S.C. § 7475(a) (requiring PSD permits for “major emitting facilities”) & CAA § 502(a), 42 U.S.C. § 7661a(a) (requiring Title V operating permits for all “major sources”).

⁵ Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule (Tailoring Rule), 75 Fed.Reg. 31514 at 31536.

⁶ In *Massachusetts v. EPA*, this Court concluded that CO₂ fit within the definition of an “air pollutant” under the Clean Air Act. 549 U.S. 497, 532 (2007). Thereafter, however, EPA concluded that regulating CO₂ under the Act would be absurd and impossible. Tailoring Rule, 75 Fed.Reg. at 31,525 and 31,536. As a result, EPA’s current regulations address this contradiction by changing the statutory emissions threshold at which CO₂ is regulated in order to make the regulations administratively feasible. *Id.* at 31,570. SLF takes no position *in this case* on whether CO₂ is properly subject to regulation under the Act.

defendant.” *Bennett v. Spear*, 520 U.S. 154, 162 (1997) (citation and internal quotation marks omitted). This requirement “ensures that there is a genuine nexus between a plaintiff’s injury and a defendant’s alleged . . . conduct,” *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149, 161 (4th Cir. 2000), and “is in large part designed to ensure that the injury complained of is ‘not the result of the independent action of some third party not before the court,’” *id.* at 162 (quoting *Lujan*, 504 U.S. at 560).

The *reductio ad absurdum* of the Second Circuit’s “every little bit hurts” rule of traceability is that adverse effects are “fairly traceable” to all sources of CO₂, no matter how small, and that all of them are therefore subject to suit.

II. PLAINTIFFS’ ALLEGED HARMS CANNOT BE REDRESSED BY ANY CONCEIVABLE JUDICIAL REMEDY.

In similar fashion, plaintiffs cannot plausibly allege that their damages could be redressed by any conceivable judicial remedy.

Assuming plaintiffs’ causal theories are correct, and borrowing from the science as reported by the IPCC on which plaintiffs rely,⁷ one can calculate defendants’ alleged contribution to global warming.

⁷ Plaintiffs cite the IPCC multiple times in their complaint, paras. 80, 81, 88, 92, 93 and 107.

According to the IPCC, it takes approximately 15.5 billion metric tons of CO₂ emissions to increase atmospheric CO₂ levels by 1 ppm.⁸ According to plaintiffs, defendants are currently emitting 650 million metric tons of CO₂ per year. Assuming that rate continues over the course of 10 years, defendants will emit 6.5 billion metric tons, or enough to raise average atmospheric CO₂ levels by 0.42 ppm.

According to IPCC, the change in “radiative forcing”⁹ in watts per meter squared caused by increasing CO₂ levels is given by the formula 5.35 times

⁸ See IPCC AR4 WG1 § 2.3.1, available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-3.html (last visited Feb. 2, 2011). Annual global CO₂ emissions figures (available from the U.S. Energy Information Administration, International Energy Statistics, <http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8> (last visited Feb. 2, 2011), divided by the average atmospheric CO₂ concentration changes (available from the U.S. Department of Commerce, <http://www.esrl.noaa>) (last visited Feb. 2, 2011) over the same years shows that atmospheric concentration goes up by 1 ppm for every 15.5 billion metric tons of human CO₂ emissions.

⁹ Radiative forcing is defined by the IPCC as “the change in net (down minus up) irradiance (solar plus longwave; in W m⁻²) at the tropopause after allowing for stratospheric temperatures to readjust to radiative equilibrium, but with surface and tropospheric temperatures and state held fixed at the unperturbed values’. Radiative forcing is used to assess and compare the anthropogenic and natural drivers of climate change.” See IPCC AR4 WG1 § 2.2, available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-2.html (last visited Feb. 2, 2011).

the natural logarithm of the proportionate change in concentration:¹⁰

$$\text{Radiative forcing (W/m}^2\text{)} = 5.35 * \ln\left(\frac{C}{C_0}\right)$$

Assuming ten years of defendants' emissions from today would increase atmospheric CO₂ levels by 0.42 ppm, C₀ and C would be 390.0 ppm and 390.42 ppm, respectively. Doing the math, therefore, the total of *all* of defendants' CO₂ emissions over a ten-year period would lead to an increased radiative forcing of 0.0058 W/m².

The IPCC Fourth Assessment Report (AR4) also lists the "climate sensitivity" (that is, how much the temperature changes for a doubling of CO₂) as likely being between 2°C and 4.5°C with a best estimate of 3.0°C.¹¹ Applying the IPCC best estimate for climate sensitivity (a temperature change of 3.0°C from a forcing change of 3.71W/m²) one can calculate that each change in radiative forcing of 1 W/m² produces 0.81°C of temperature change (i.e. 3.0°C/3.71W/m²).

Applying this factor, and relying solely on the IPCC analysis that is essential to plaintiffs' own

¹⁰ See IPCC Third Assessment Report (TAR) § 6.5.3, Table 6.2, available at http://www.grida.no/publications/other/ipcc%5Ftar/?src=/CLIMATE/IPCC_TAR/wg1/222.htm (last visited Feb. 2, 2011).

¹¹ IPCC AR4 Summary for Policymakers, p. 12, available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/spmsspmp-understanding-and.html (last visited Feb. 2, 2011).

statement of their claims, one can determine that all of defendants' CO₂ emissions over a ten-year period would result in a change in radiative forcing of 0.0058 W/m², which in turn would result in a projected temperature change of 0.0047°C (or 0.0085°F).¹²

The level of precision in measurement of global average surface temperature is 0.05°C.¹³ Thus, a complete elimination of defendants' emissions for 10 years would produce a calculated effect on global temperature that is 10 times smaller than the smallest change in global average temperature than can be detected. Since the effect would have to be 10 times bigger to even be detected, it would be impossible to confirm that it had ever actually occurred.

If the remedy were less than a complete elimination of defendants' emissions, the effect would be even smaller. In their complaint, plaintiffs allege at paragraph 148 that "by reducing emissions by approximately three percent annually over the next decade, the defendants would achieve their share of the carbon dioxide emission reductions necessary to *significantly slow the rate and magnitude of warming.*" (Emphasis added). Reducing defendants'

¹² IPCC's climate sensitivity = 3.0°C/3.71W/m², or 0.809°C per W/m². So, if Defendants contribute 0.0058 W/m², the projected change in temperature is 0.0058 W/m² * 0.809°C per W/m², or 0.0047°C.

¹³ See Climatic Research Unit, Data, Temperature, <http://www.cru.uea.ac.uk/cru/data/temperature/> (last visited Feb. 2, 2010).

emissions by 3% each year for 10 years from an initial level of 650 million metric tons (mmt) would achieve a cumulative reduction in emissions over ten years of 981.5 mmt as compared to unchanged emissions for 10 years. A reduction in CO₂ emissions of 981.5 mmt equates to a change in atmospheric concentration of 0.0633 ppm, a change in radiative forcing of 0.000873 W/m², and a change in temperature of 0.00071°C. This change, 7.1 ten-thousandths of a degree, is 71 times smaller than the threshold of detection. Being undetectable by two orders of magnitude, the relief plaintiffs seek in this lawsuit would do nothing that anyone could ever measure or detect to slow the rate and magnitude of warming, much less do so “significantly.”

Between 2001 and 2007 China added new CO₂ emissions from energy consumption at an average rate of 543 million metric tons per year.¹⁴ At that rate, the annual emissions reductions prayed for by plaintiffs in the first year would be replaced by growth in China alone in 13 days.¹⁵

¹⁴ See Energy Information Administration, Table 11.19 World Carbon Dioxide Emissions From Energy Consumption, 1998-2007, <http://www.eia.doe.gov/aer/txt/ptb1119.html> (last visited Feb. 2, 2011).

¹⁵ China’s growth in CO₂ emissions from energy consumption has averaged 540 million metric tons per year from 2001 through 2007, See n.14, *supra*. This averages to 1.479 million metric tons per day. A 3% reduction in defendants’ annual emissions of 650 million metric tons is 19.5 million metric

(Continued on following page)

The futility of the relief sought by plaintiffs is comparable to that of EPA's motor vehicle greenhouse gas regulations, which, after a century, would accomplish a temperature reduction of 0.01°C, also well below the level of detection.¹⁶

There has been a real-time experiment on plaintiffs' thesis since this lawsuit was filed in 2005. According to figures from the Energy Information Administration of the U.S. government, annual CO₂ emissions from electric power generation in the U.S. declined from 2005 to 2009 by 274,330,000 metric tons.¹⁷ The cumulative reduction in emissions from 2005 to 2009 compared to five years of emissions at the 2005 rate is 385,882,000 metric tons, equal to 42% of defendants' annual emissions. Using the formulae shown above, this equates to a change in

tons, which would be replaced by China's growth in emissions in 13.1 days.

¹⁶ In *Massachusetts*, this Court held that regulation of tailpipe emissions would "slow or reduce" climate change. 504 U.S. at 525. In fact, in the tailpipe emissions regulations that ensued from the *Massachusetts* ruling, EPA asserted the rule would avoid a temperature increase of one 0.01°C and one millimeter in sea level rise over the course of the next century. Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed.Reg. 25324 at 25495. This temperature change is also below the threshold of detection.

¹⁷ See Energy Information Administration, Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants, <http://www.eia.doe.gov/cneaf/electricity/epa/epat3p9.html> (last visited Feb 2, 2011).

concentration of 0.0249 ppm, a change in radiative forcing of 0.000343 W/m^2 , and a change in temperature of 0.0002780°C , or 2 ten-thousandths of a degree, 180 times smaller than the threshold of detection. From 2005 to 2009, while these emissions reductions were occurring, global atmospheric CO_2 has gone from 379.76 in 2005 to 387.35 ppm in 2009.¹⁸

Plaintiffs' claim for relief is a monument to futility, the necessary result of failing to enforce the requirements of traceability and redressability. Without being tethered by meaningful requirements of traceability and redressability, global warming nuisance litigation would punish any targeted defendants and their rate payers and yet accomplish nothing for the plaintiffs or the planet. It should not be necessary to point out that attempting to manage climate through pointless exactions from hapless defendants comports neither with the rule of law nor with rationality itself, but that is where we find ourselves.

Perhaps (this is not certain), a worldwide program of massive reductions in global CO_2 emissions would be sufficient to produce a detectable change in global temperature. But that was not the issue before the Second Circuit, nor could it possibly be. The point here is that, assuming plaintiffs' estimates of defendants' CO_2 emissions are accurate, and assuming the truth of the models on which plaintiffs' base their

¹⁸ See ftp://ftp.cmdl.noaa.gov/ccg/co2/trends/co2_annmean_mlo.txt (last visited Feb. 2, 2011).

claims of causality, plaintiffs' harms cannot possibly be redressed by any conceivable judicial remedy. Therefore, plaintiffs failed to state a plausible claim of standing and their case should have been dismissed.

III. THE EXTENT TO WHICH ANTHROPOGENIC GREENHOUSE GASES CAUSE GLOBAL WARMING IS SUBSTANTIALLY UNCERTAIN.

All of the foregoing has assumed that plaintiffs' causal premise is correct. Even granting that premise, the contribution of any particular set of defendants to global warming is so *de minimis* that public nuisance litigation to redress global warming is an exercise in futility.

Laying those arguments to one side, this case obviously does not come before the Court in a vacuum. Anthropogenic global warming is one of the most contentious political issues of our time.¹⁹ EPA has issued a massive and far-reaching set of greenhouse gas regulations in the wake of *Massachusetts v. EPA*. These rules are currently before the D.C. Circuit Court of Appeals in one of the largest and most

¹⁹ In the West Virginia senate campaign in 2010, the winning candidate, then-Governor Jim Manchin, ran a television ad in which he loads a bolt-action rifle, says "I sued EPA and I'll take dead aim at the cap and trade bill" as he fires a bullet through the cap and trade bill. See http://www.youtube.com/watch?v=xIJORBRpOPM&feature=player_embedded (last visited Feb. 1, 2011).

complex judicial reviews of environmental regulation in our nation's history. These cases may eventually arrive before this Court. Before rushing in where angels fear to tread, the Court should be aware of the nature of the scientific uncertainties surrounding anthropogenic global warming that are disclosed in the very IPCC reporting on which plaintiffs rely.

Quite independent of the standing arguments in the preceding sections, and in the traditional advisory role of *amici*, in this section we point out that the IPCC reports on which plaintiffs rely plainly identify substantial and pivotal uncertainties in climate science. The IPCC reports also recommend that decision makers – like the members of this Court – be fully aware of those uncertainties.²⁰

While the posture of this case precludes a full treatment of unresolved issues in climate science, the importance of this case and of the issue make it appropriate to acquaint the Court with the nature and extent of a few of the critical uncertainties. In addition, it is important to clarify the meaning and effect of how *Massachusetts* treated the issue of causation, a subject about which there is some confusion.

The effect of the treatment of causation in *Massachusetts* is limited by the fact that the EPA did “not

²⁰ IPCC AR4 WG1 § 2.3.4 (“Communicating risk and uncertainty is a vital part of helping people respond to climate change.”) Available at http://www.ipcc.ch/publications_and_data/ar4/wg2/en/ch2s2-3-4.html (last visited Feb. 2, 2011).

dispute the existence of a causal connection between man-made greenhouse gases and global warming.” 549 U.S. at 523 (2007).

Neither EPA’s concession in *Massachusetts* nor the *fait accompli* it presented the Court ordains the causal relationship as a law of nature on a par with the law of gravity. Whether and to what extent the assertion is actually true in the physical world is a separate matter, as the workings of nature are indifferent to judicial opinions.

Nevertheless, the Court’s recitation of EPA’s concession has been cited as binding authority for the causal premise. In its Endangerment Finding, EPA bootstrapped its concession by repeatedly citing this Court’s “holding” in *Massachusetts* that man-made greenhouse gases cause global warming as support for its finding of endangerment. Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed.Reg. 66,496, 66,499, 66,537-8, 66,543, and 66,545. (“The Administrator agrees that ‘[j]udged by any standard, U.S. motor-vehicle emissions make a meaningful contribution to greenhouse gas concentrations and hence, . . . to global warming.’ *Massachusetts v. EPA*, 549 U.S. at 525.”) Some courts have also seen the issue as settled by *Massachusetts*. See, e.g., *Center for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1198 n.41, 1224 (9th Cir. 2008) (describing an “emergent consensus on global warming” and citing *Massachusetts* for the proposition that an increase in greenhouse gases could cause climate change); *Rocky*

Mtn. Farmers Union v. Goldstene, 719 F.Supp.2d 1170, 1177 n.3 (E.D. Cal. 2010) (observing that “[c]ounsel for all parties appear to accept as fact that global warming is without debate or dispute”); *Central Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F.Supp.2d 1151, 1169 (E.D. Cal. 2007) (referring to “growing consensus” on the issue).

The Court has traditionally proceeded cautiously and modestly where it does not have the benefit of a full adversarial treatment of momentous and contentious issues. See *NASA v. Nelson*, 2011 WL 148254 (S.Ct. Jan. 19, 2011) (slip op., p. 8, n.10) (“It is undesirable for us to decide a matter of this importance in a case in which we do not have the benefit of briefing by the parties and in which potential amici had little notice that the matter might be decided.”) The reverberations of EPA’s concession on causation in *Massachusetts* illustrate the wisdom of such restraint on the question of causation in this case. The nature and depth of the uncertainties disclosed by the IPCC reports, discussed below, confirm it.

Read fairly, there is considerably less to IPCC’s pronouncements that meets the eye. On the one hand, IPCC seems to argue that the causal relationship between CO₂ emissions and changes in global temperature is settled. For example, IPCC, on which plaintiffs’ rely, concludes on the subject of causation that

[i]t is extremely unlikely (<5 percent) that the global pattern of warming during the

past half century can be explained without external forcing, and very unlikely that it is due to known natural external causes alone. . . . Greenhouse gas forcing has very likely caused most of the observed global warming over the last 50 years.

IPCC AR4 Working Group 1 (WG1) Chap. 9, Executive Summary.²¹ In other words, it was caused by human emissions of greenhouse gases. EPA adopts this conclusion verbatim in its Endangerment Finding. 74 Fed.Reg. at 66,518.

On the other hand, further examination of the IPCC's documentation indicates that the IPCC itself admits there are multiple and profound uncertainties in the understanding of the climate system that necessarily bring the certitude of this conclusion into question.

First, the IPCC's AR4 explains that there are three principal influences on the climate system:

There are three fundamental ways to change the radiation balance of the Earth: 1) by changing the incoming solar radiation (e.g., by changes in Earth's orbit or in the Sun itself); 2) by changing the fraction of solar

²¹ Available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch9s9-es.html (last visited Feb. 2, 2011). Quantification of the levels of certainty meant by "extremely likely" (>95%), "very likely" (>90%), and "very unlikely" (<10%) is found at AR4 WG1 § 1.6, available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch1s1-6.html (last visited Feb. 2, 2011).

radiation that is reflected (called ‘albedo’; e.g., by changes in cloud cover, atmospheric particles or vegetation); and 3) by altering the longwave radiation from Earth back towards space (e.g., by changing greenhouse gas concentrations). Climate, in turn, responds directly to such changes, as well as indirectly, through a variety of feedback mechanisms.

IPCC AR4 FAQ 1.1.²² The uncertainty problem lies in the level of scientific understanding of these effects. The sun is the most important of these three factors: It provides all of the Earth’s atmospheric energy. *Id.* But according to IPCC, there is no scientific consensus on the influence of the sun. This led the IPCC to acknowledge a “low” level of scientific understanding about the sun’s overall effect on climate. AR4 WG1 § 2.9.1, Table 2.11. While changes in solar irradiance, which are understood, may have a small effect compared to those from changes in clouds and greenhouse gases, the fact remains that the full scope of how the sun influences climate is not understood. Whatever the effects of changes in solar output may be, the uncertainties in the cloud and aerosol effects are enormous.

The second factor is the albedo effect, including from clouds, which controls how much solar energy is reflected back into space. IPCC acknowledges

²² See http://www.ipcc.ch/publications_and_data/ar4/wg1/en/faq-1-1.html (last visited Feb. 2, 2011).

“significant uncertainty” about clouds as well. AR4 WG1 § 2.9.1, Table 2.11.

Third and last, are greenhouse gases (the most predominant of which is water vapor) that control how much heat is maintained in the atmosphere by absorbing long-wave radiation from the surface and reradiating some of it back to the surface. IPCC AR4 FAQ 1.1. It is through this mechanism that CO₂ has its greenhouse effect. According to IPCC, the overall level of scientific understanding of the climate effects of greenhouse gases is “high,” with a scientific consensus about the physical mechanisms involved, namely the physics of radiative heat transfer. AR4 WG1 § 2.9.1, Table 2.11.

Of the three primary climate drivers, then, there is substantial *uncertainty* about the influence of two. This necessarily calls into question the extraordinary level of certainty expressed by the IPCC’s conclusion that it is “very likely” (90%) that recent warming in the 20th century (but not prior episodes of equally rapid warming in the historical record) is caused by anthropogenic greenhouse gases. Either the sun and clouds are understood, or they are not. If the IPCC does not understand their influence on climate, they cannot be ruled out to a 90% level of certainty as a cause of any particular climate phenomenon, whether it be rising or falling temperatures.

A vast array of natural cycles, currents, oscillations, variations and feedbacks ultimately determine the *net* climate result of any given change in the

environment, including an increase in CO₂. Most of these manifestations of natural variability can only be observed, not understood.²³ Detecting natural variability is necessary to then identify the human effects. But “there is still considerable uncertainty in the magnitude of internal climate variability.”²⁴ Computing global temperature changes caused by changes in CO₂ concentration while not accounting for the other relevant forces that are not understood has all the analytical rigor of searching for your keys under the streetlight because that’s where the light is.

The IPCC’s Third Assessment Report candidly acknowledged that the limited understanding of climate processes necessarily makes climate modeling an uncertain exercise:

In sum, a strategy must recognize what is possible. In climate research and modeling, we should recognize that we are dealing with a coupled nonlinear chaotic system, and therefore that *long-term prediction of future climate states is not possible*.

²³ See, e.g., IPCC AR4 WG1 § 8.4.7 explaining that “serious systematic errors in both the simulated mean climate and the natural variability persist” in attempts to model the El Niño Southern Oscillation. Available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch8s8-4-7.html (last visited Feb. 2, 2011).

²⁴ See IPCC TAR § 12.2.2 “These findings emphasise that there is still considerable uncertainty in the magnitude of internal climate variability.” Available at http://www.grida.no/publications/other/ipcc%5Ftar/?src=/CLIMATE/IPCC_TAR/wg1/222.htm (last visited Feb. 2, 2011).

IPCC TAR WG1 The Scientific Basis § 14.2.2.2 (emphasis added). In AR4, the IPCC put it this way:

Since knowledge of the climate system's past and current states is generally imperfect, as are the models that utilize this knowledge to produce a climate prediction, and since the climate system is inherently nonlinear and chaotic, predictability of the climate system is inherently limited. Even with arbitrarily accurate models and observations, there may still be limits to the predictability of such a nonlinear system.

IPCC AR4 WG1 Glossary entry for "predictability."

In global climate models relied upon by the IPCC, a doubling of CO₂ by itself only causes a portion of the projected warming, 1.2°C of the total 3.7°C.²⁵ The rest is caused in the model results by what the models' programming assumes to be positive feedbacks, primarily from water vapor. *Id.* There are *huge* uncertainties in the operation and effects of these feedbacks.

²⁵ IPCC AR4 WG1 § 8.6.2.3 "In the idealised situation that the climate response to a doubling of atmospheric CO₂ consisted of a uniform temperature change only, with no feedbacks operating (but allowing for the enhanced radiative cooling resulting from the temperature increase), the global warming from GCMs would be around 1.2°C (Hansen *et al.*, 1984; Bony *et al.*, 2006)." Available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch8s8-6-2-3.html (last visited Feb. 2, 2011).

Global climate models use widely divergent values for the key variable of climate sensitivity to CO₂, varying from 2.1°C to 4.4°C, a spread of 109% from low to high.²⁶ If the sensitivity of climate to CO₂ – *the central issue in the debate* – were truly settled science, the value of the climate sensitivity parameter would not vary in models by more than 100%, or be the subject of vigorous ongoing scientific debate and inquiry.²⁷

Even more significantly, the ignorance regarding clouds is so abysmal that there is no scientific consensus on whether cloud feedbacks are even positive or negative, much less on their magnitude.²⁸ The lack

²⁶ The spread among climate models in climate sensitivity and other key modeling parameters is described in IPCC AR4 WG1 § 8.6.2.3 http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch8s8-6-2-3.html (last visited Feb. 2, 2011).

²⁷ See, e.g., Spencer, Roy W., *et al.*, *On the diagnosis of radiative feedback in the presence of unknown radiative forcing* 110 GEOPHYSICAL RESEARCH LETTERS D16109, doi:10.1029/2009JD013371 (2010). (“It is clear that the accurate diagnosis of short-term feedbacks (let alone long-term climate sensitivity) from observations of natural fluctuations in the climate system is far from a solved problem.”)

²⁸ IPCC AR4 WG1 § 8.6.3.2 (“In doubled atmospheric CO₂ equilibrium experiments performed by mixed-layer ocean-atmosphere models as well as in transient climate change integrations performed by fully coupled ocean-atmosphere models, models exhibit a large range of global cloud feedbacks, *with roughly half of the climate models predicting a more negative CRF in response to global warming, and half predicting the opposite* (Soden and Held, 2006; Webb, *et al.*, 2006).” (emphasis added). Available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch8s8-6-3-2.html (last visited Feb. 2, 2011).

of understanding of cloud effects is the primary reason climate sensitivity is so poorly understood.²⁹

The effects of anthropogenic aerosols “remain the dominant uncertainty in radiative forcing.”³⁰ Aerosols have a cooling effect by reflecting sunlight. The astonishing spread in aerosol parameters in climate models is given in IPCC AR4 Table 2.6. The atmospheric quantity of anthropogenic sulfate used in the models, measured in $\text{mg}(\text{SO}_4)/\text{m}^2$, ranges from 2.70 to 6.70, and the radiative forcing effect for the top of a clear sky ranges from -0.29 to -0.94 W/m^2 .³¹

These uncertainties and lack of understanding of how climate actually works necessarily hobble the enterprise of modeling global climate, just as the blind men had difficulty describing the elephant.

Averaging the results of models afflicted by such ignorance, known as ensemble modeling, does not solve the problem because the averages do not bring

²⁹ IPCC AR 4 WG1 § 8.6.3.2 (“Moreover, the spread of climate sensitivity estimates among current models arises primarily from inter-model differences in cloud feedbacks. (*cites omitted*) Therefore, cloud feedbacks remain the largest source of uncertainty in climate sensitivity estimates.”) *Id.*

³⁰ IPCC AR4 Working Group 1 Summary for Policymakers, Human and Natural Drivers of Climate Change, available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/spmssp-human-and.html (last visited Feb. 2, 2011).

³¹ IPCC AR4 Table 2.6 is available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-4-4-1.html#table-2-4 (last visited Feb. 2, 2011).

understanding to the fundamental processes that are not understood.³²

The poor understanding of the fundamental processes of the climate system is manifested not just by the scattershot spread in key determining variables or the inability to guess whether cloud feedbacks are negative or positive. The proof is also in the pudding – average temperature trends have

³² IPCC AR4 WG1 § 10.5.1 (“The effects of uncertainty in the knowledge of Earth system processes can be partially quantified by constructing ensembles of models that sample different parameterizations of these processes. However, some processes may be missing from the set of available models, and alternative parameterizations of other processes may share common systematic biases. Such limitations imply that distributions of future climate responses from ensemble simulations are themselves subject to uncertainty (Smith, 2002), and would be wider were uncertainty due to structural model errors accounted for.”) available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch10s10-5.html (last visited Feb. 2, 2011). See also, Stainforth, David, *et al.*, *Confidence, uncertainty and decision-support relevance in climate predictions*, Phil. Trans. R. Soc. A 2007 365, 2145-2161, 2154 (“The frequency distributions across the ensemble of models may be valuable information for model development, but there is no reason to expect these distributions to relate to the probability of real-world behaviour. One might (or might not) argue for such a relation if the models were empirically adequate, but given nonlinear models with large systematic errors under current conditions, no connection has been even remotely established for relating the distribution of model states under altered conditions to decision-relevant probability distributions.”) Available at <http://rsta.royalsocietypublishing.org/content/365/1857/2145.full.pdf+html> (last visited Feb. 2, 2010).

been lower than the models predicted, both in the tropics,³³ and globally.³⁴

Further, a distinctive fingerprint projected by the models, upper tropospheric warming in the tropics, is missing. The IPCC AR4 stated that enhanced warming in the tropical troposphere was predicted by all models.³⁵ AR4 Figure 9.1 showed that such warming ought to be observed already, as it is the predominant feature of model runs incorporating

³³ McKittrick, Ross R., *et al.* (2010), *Panel and Multivariate Methods for Tests of Trend Equivalence in Climate Data Sets*. 11 Atmospheric Science Letters 270, 276 doi: 10.1002/asl.290. (Referring to in the tropical lower and mid-troposphere, “[o]ver the interval of 1979 to 2009, model-projected temperature trends are two to four times larger than observed trends in both the lower and mid-troposphere and the differences are statistically significant to the 99% level.”)

³⁴ Knight, J., *et al.* (2009), “Do global temperature trends over the last decade falsify climate predictions?” In: Peterson, T. C., & Baringer, M.O. (eds.), “State of the Climate in 2008” Special Supplement to the Bull. Am. Meteorol. Soc., 90-91. (“Observations indicate that global temperature rise has slowed in the last decade (Fig. 2.8a). The least squares trend for January 1999 to December 2008 calculated from the HadCRUT3 dataset (Brohan, *et al.* 2006) is $+0.07 \pm 0.07^\circ\text{C decade}^{-1}$ – much less than the $0.18^\circ\text{C decade}^{-1}$ recorded between 1979 and 2005 and the $0.2^\circ\text{C decade}^{-1}$ expected in the next decade (IPCC; Solomon, *et al.* 2007).”) The authors argue that the divergence between prediction and observation is not statistically significant.

³⁵ IPCC AR4 WG1 § 9.2.2, available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch9s9-2-2.html (last visited Feb. 2, 2011).

historical greenhouse gas emissions. *Id.* IPCC projections for the coming century (Figure 10.7) likewise show the tropical troposphere to be the central location of atmospheric warming in response to future greenhouse gas emissions.³⁶ The accompanying IPCC text states:

Upper-tropospheric warming reaches a maximum in the tropics and is seen even in the early-century time period. The pattern is very similar over the three periods, consistent with the rapid adjustment of the atmosphere to the forcing. These changes are simulated with good consistency among the models.

IPCC AR4 WG1 § 10.3.2.1.

The U.S. Climate Change Science Program (“CCSP”), on which plaintiffs’ also rely, predicted this fingerprint of anthropogenic global warming in their CCSP 2006 Synthesis and Assessment Report Product, p. 25, figure 1.3. The CCSP 2006 report also included the observations showing *no* fingerprint on p. 116, in figure 5.7E. These figures are reproduced in the appendix attached hereto. The CCSP referred to the mismatch as a “potentially serious inconsistency.” CCSP 2006, p. 11.

³⁶ See IPCC AR4 WG1 § 10.3.2.1, available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch10s10-3-2.html (last visited Feb. 2, 2011).

The lack of any statistically significant global warming since 1998,³⁷ even as CO₂ concentration has gone from 366.50 in 1998 to 389.78 in 2010,³⁸ adds to the uncertainties in climate science. An actual, observed increase in CO₂ concentrations equal to 555 years' worth of defendants' emissions is not associated with a statistically significant effect on global temperatures.³⁹

This lack of warming since 1998 was the subject of an email discussion that became public and famous in the Climategate scandal of November 2009. Prominent IPCC Working Group 1 Physical Science Basis lead author Kevin Trenberth was discussing the lack of warming with fellow scientists. In a message thread from October 14, 2009, Trenberth says "The fact is that we can't account for the lack of warming at the moment and it is a travesty that we can't."⁴⁰ A colleague, Tom Wigley, disagreed, drawing this reply from Trenberth:

³⁷ "Q&A: Professor Phil Jones," BBC News, Feb. 13, 2010, available at <http://news.bbc.co.uk/2/hi/8511670.stm> (last visited Feb. 2, 2011).

³⁸ See n.1, *supra*.

³⁹ At 15.5 billion metric tons of emissions per ppm, *see* note 8, *supra*, a change of 23.28 ppm would result from 360 billion metric tons of emissions, equal to 555 years of defendants' emissions at the rate of 650 million metric tons per year.

⁴⁰ East Anglia emails, <http://www.eastangliaemails.com/emails.php?eid=1052&filename=1255523796.txt> (last visited Feb. 4, 2011).

How come you do not agree with a statement that says we are no where close to knowing where energy is going or whether clouds are changing to make the planet brighter. We are not close to balancing the energy budget. The fact that we can not account for what is happening in the climate system makes any consideration of geoengineering quite hopeless as we will never be able to tell if it is successful or not! It is a travesty!

Id. Michael Mann, another famous climate scientist, countered that the lack of warming could be “explained” by natural variability, but Trenberth demurred: “Saying it is natural variability is not an explanation. What are the physical processes? Where did the heat go?” *Id.* Nobody knows where the missing heat went, and the reason nobody knows is that the canonical IPCC understanding of the climate system is not sufficient to explain it, as Trenberth has so clearly admitted.

Compounding these difficulties for the plaintiffs, the IPCC’s climate models are global, not regional. They are not capable of modeling climate on a regional basis. “Models continue to have significant limitations, such as in their representation of clouds, which lead to uncertainties in the magnitude and timing, as well as regional details, of predicted climate change.” IPCC AR4 WG1 Chap. 8, FAQ 8.1. *See also* IPCC AR4 WG1 § 11.10.1 (“projections provide plausible future regional climate scenarios, although methods to establish the reliability of the regional AOGCM scales have yet to mature.”)

The effects that plaintiffs attribute to defendants, and the relief they claim would ensue if their prayers were granted are necessarily regional in scope. For example, one of the plaintiffs is Rhode Island; no one, including IPCC, claims that it can forecast the effect of reductions in CO₂ emissions on Rhode Island, or any other region for that matter. The state of the art does not permit valid or reliable assessment at the scales at issue in this lawsuit.

Despite the breadth and depth of the lack of understanding so plainly disclosed in the IPCC reports, the IPCC and the EPA insist that they know with 90% certainty that more than half the warming since the mid 20th century is caused by man.

This abbreviated discussion, relying primarily on the IPCC and the CCSP, is sufficient to clearly show that attributing the cause and extent of global warming to anthropogenic greenhouse gas emissions, to the exclusion of other natural causes, is afflicted by deep and substantial uncertainties surrounding the fundamental processes that drive climate.

The scope of appellate rulings on the nature and extent of the causal relationship between human emissions of greenhouse gases and global warming is necessarily constrained in any given case by the state of the record and the standard of review of disputed factual contentions. The EPA's concession in *Massachusetts* has given rise to unfounded assertions that this Court has definitively decided the causation issue and that it is free from significant uncertainty.

That is a misreading of *Massachusetts* and of the IPCC reports. Given the momentous issues at stake, judicial recognition of the profound uncertainties in climate science and a due caution and restraint in addressing the subject is most appropriate.

IV. PLAINTIFFS' CLAIMS PRESENT POLITICAL NOT SCIENTIFIC QUESTIONS.

The district court found that the case presented a non-justiciable political question. The new co-chair of IPCC Working Group 3, Ottmar Edenhofer, would agree that global warming is a political question, though not in the same sense. He recently gave an interview in which he said:

The climate summit in Cancun at the end of the month is not a climate conference, but one of the largest economic conferences since the Second World War. . . . But one must say clearly that we redistribute de facto the world's wealth by climate policy. Obviously, the owners of coal and oil will not be enthusiastic about this. One has to free oneself from the illusion that international climate policy is environmental policy. This has almost nothing to do with environmental policy anymore, with problems such as deforestation or the ozone hole.⁴¹

⁴¹ See IPCC Official: "Climate Policy Is Redistributing The World's Wealth" The Global Warming Policy Foundation, <http://thegwpcf.org/the-climate-record/1877-ipcc-official-climate-policy-is-redistributing-the-worlds-wealth.html> (last visited Feb. 2, 2011),

(Continued on following page)

The plaintiffs are presumably less cynical than Mr. Edenhofer, and might complain that he does not speak for them. But he does speak for the IPCC, on which plaintiffs rely. Edenhofer's statement was not a reckless charge made by an overzealous critic of the IPCC. It was made by the co-chair of Working Group 3 and depicts climate change policy as explicitly political and derides the contention that it is about the environment as an "illusion."

Judge Hall, author of the Second Circuit opinion, apparently also had explicitly political goals in mind. He was reported to "hope[] the ruling will pressure both the executive branch and Congress to implement climate policies," and to "hope[] the existence of this nuisance action may influence the Senate to provide 60 votes to pass a climate bill." *Key Judge Downplays Prospects for Successful Climate Damages Suits*, Inside EPA, March 5, 2010 at 18. Even if "pressuring" other co-equal branches of government explains the decision, it does not excuse it; it is most decidedly *not* a proper role for the federal judiciary and this Court should not tolerate such conduct.

The political question doctrine preserves the constitutional balance of power and protects the judiciary from the institutional harm that would ensue

translating from original German publication http://www.nzz.ch/nachrichten/politik/schweiz/klimapolitik_verteilt_das_weltvermoegen_neu_1.8373227.html (last visited Feb. 2, 2011).

from wading into such controversies. It should be applied to this case.

◆

CONCLUSION

Issues of standing, justiciability causality, and political question tend to merge when the rule of standing is so meaningless that every person on earth could sue every other person on earth for contributing to global warming and yet accomplish nothing to solve the problem that could ever be detected. Such an absurd prospect should be avoided. The Court could legitimately conclude that no one has standing to sue over the problem of global warming or that it is a political question having no business in a federal court. The Second Circuit should be reversed.

Respectfully submitted,

SHANNON LEE GOESSLING

Counsel of Record

SOUTHEASTERN LEGAL

FOUNDATION, INC.

2255 Sewell Mill Road

Suite 320

Marietta, GA 30062

(770) 977-2131

shannon@southeasternlegal.org

EDWARD A. KAZMAREK

KAZMAREK GEIGER &

LASETER LLP

3490 Piedmont Road N.E.

Suite 350

Atlanta, GA 30305

(404) 812-0840

HARRY W. MACDOUGALD

CALDWELL & WATSON LLP

5825 Glenridge Drive, N.E.

Building Two, Suite 200

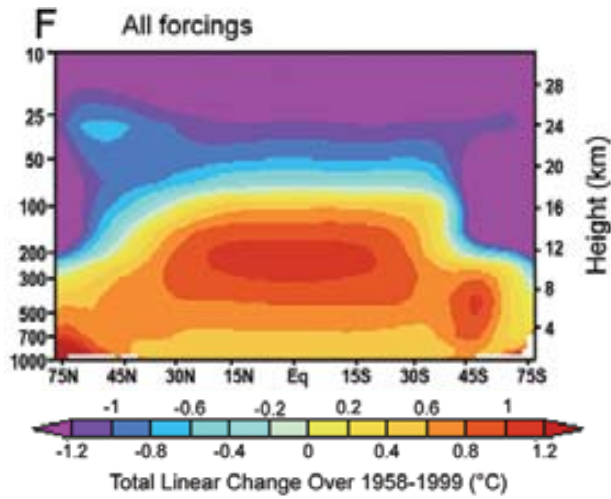
Atlanta, GA 30328

(404) 843-1956

Attorneys for Amici Curiae

APPENDIX

CCSP 2006, p. 25, Figure 1.3, Predicted upper tropospheric tropical warming “fingerprint.”



CCSP 2006, p. 116, Figure 5.7, Observations showing no “fingerprint.”

