

HARMONIZING REGULATORY AND LITIGATION APPROACHES
TO CLIMATE CHANGE MITIGATION: INCORPORATING
TRADABLE EMISSIONS OFFSETS INTO
COMMON LAW REMEDIES

KIRSTEN H. ENGEL[†]

INTRODUCTION

Within the past several years, state attorneys general filed two high-profile common law tort lawsuits against major sources of greenhouse gas (GHG) emissions. In 2003, the attorneys general of New York, California, Connecticut, Iowa, New Jersey, Rhode Island, Vermont, and Wisconsin and the City Attorney for New York filed suit against five major electric power generators located in the Midwest. The plaintiffs alleged that the defendants' fossil-fuel-fired generating facilities constitute a public nuisance under state and federal common law and requested that the defendants abate carbon dioxide emissions at each of their plants.¹ In 2006, the State of California sued six major vehicle manufacturers, claiming that the "massive" quantities of GHGs emitted by automobiles produced by the companies contribute to the public nuisance of global warming. California is requesting monetary damages as well as other appropriate relief.²

Perhaps the most striking feature of these lawsuits is their bold attempt to address a modern environmental problem of global propor-

[†] Professor of Law, James E. Rogers College of Law, University of Arizona. I would like to thank David Adelman, Dan Dobbs, Daniel Farber, Barak Orbach, and Scott Saleska for their comments on, and contribution to, the ideas presented in this paper as well as the participants in the University of Pennsylvania Law Review Symposium, *Responses to Global Warming: The Law, Economics, and Science of Climate Change*. In addition, I am indebted to Tiffany Bartz, who provided invaluable research assistance.

¹ Complaint at 43-49, *Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265 (S.D.N.Y. 2005) (No. 04-5669). This lawsuit is currently on appeal after the district court dismissed the complaint under the political question doctrine. *Am. Elec. Power Co.*, 406 F. Supp. 2d at 274; Brief of Amici Curiae U.S. Senator James M. Inhofe and the Washington Legal Foundation in Support of Defendants-Appellees and Supporting Affirmance of the District Court at 4-5, *Connecticut v. Am. Elec. Power Co.*, No. 05-5104 (2d Cir. Mar. 2, 2006) (agreeing with the lower court that plaintiffs presented a political question).

² Complaint for Damages and Declaratory Judgment at 2, *California ex rel. Lockyer v. Gen. Motors Corp.*, No. 06-05755 (N.D. Cal. Sept. 20, 2006).

tions—climate change—through the parochial apparatus of the common law tort system. This is all the more remarkable as the international community, the federal government, and state regulators are simultaneously struggling to address climate change, with a mixed record of success. Although nations representing approximately one-third of the world's emissions are now subject to the Kyoto Protocol, the United States—the world's largest national emitter of GHGs—has neither ratified Kyoto nor adopted a mandatory program to control domestic emissions. Some states within the United States are attempting to fill this gap with state-level regulation and, now, state-initiated common law litigation against individual emitters.

Commentators generally agree that state-by-state regulation is not a substitute for a comprehensive federal program. Nevertheless, the question remains whether state-level actions to address climate change can help bring us closer to the development of a mandatory federal climate change program. A follow-up question is whether, if so, state-level positive regulation and state-level common law litigation may be harmonized in a manner so as to reach this goal more effectively and efficiently. Because some aspects of these questions are the subject of prior scholarship,³ this Article will focus on two particular aspects of these larger questions: 1) in what way is common law litigation similar to or different from state-level positive regulation in terms of its potential to influence the development of a federal regulatory regime, and 2) what are the benefits of and barriers to adopting, in the common law context, the same remedies being considered and adopted in the regulatory context?

I argue here that, like state positive climate change regulation, state-initiated climate change litigation fills a niche created by the need to address this global environmental problem in the absence of federal action. Both can function as an intermediate step between no regulation and a federal program. While it is possible both may survive, both may also be preempted by an eventual federal regulatory program. Under the dominant theory regarding the influence of state-level action upon federal legislation, state-initiated common law climate change litigation now being pursued is likely to be just as, if not more, effective than positive regulation in terms of its potential to trigger a federal regulatory response. This is largely because the tar-

³ See Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 *ECOLOGY L.Q.* 183, 187-89 (2005) (arguing that subglobal regulation is both “economically rational” and “a good policy choice”).

gets of the state-level litigation are out-of-state companies, a characteristic that is likely to accentuate the dynamics that could trigger a federal regulatory response. In sum, state-level litigation should be thought of as a component of a state-level regulatory program with at least the same potential for influencing the creation and content of a federal regulatory program as state positive regulation.

Second, I will argue that not only should common law and positive regulatory remedies be harmonized in the circumstances presented by climate change, but a unique characteristic of GHGs—their fungibility—makes possible incorporation into common law remedies the leading compliance option being employed and considered in the regulatory context: the use of tradable emissions offsets. Such an option would be in contrast to the usual remedy in a public nuisance suit: alterations in the defendant's own operations that abate its contribution to the public nuisance.⁴ The option to use third-party-generated emissions offsets allows the defendant to maintain its current operations unchanged and pay another source of GHGs to abate its emissions. This remedy achieves the same environmental result as an unadorned abatement requirement, but at a potentially cheaper cost. In addition to efficiency, however, incorporation of this option into common law remedies might actually trigger a GHG emissions trading market.⁵ Such a market could function until the time that a federal regulatory program is enacted. Given that a federal program is likely to institute emissions trading, any market so created would enhance the success of the subsequent regulatory program.

Harmonizing state regulatory and litigation approaches to climate change in a manner that could possibly jumpstart an emissions trading regime will make the best use of this intermediate time period during which Congress is considering the enactment of a GHG emissions cap-and-trade program but has yet to amass the consensus needed for such a program to become law. While Congress continues to debate the merits and design of a cap-and-trade program,⁶ other

⁴ See W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 90, at 643 (5th ed. 1984) (“The equitable remedy of injunction to enjoin a public nuisance developed early in the history . . . of equity jurisprudence . . .”).

⁵ See *infra* Part III.

⁶ With the recent endorsement of several major U.S. corporations, the United States may actually be getting near to legislating a climate cap-and-trade program. See *Business Leaders Urge Climate Action*, ENV'T NEWS SERVICE, Feb. 22, 2007, <http://www.ens-newswire.com/ens/feb2007/2007-02-22-01.asp> (noting ninety major international corporations and organizations, including Citigroup, General Electric, Rolls-Royce, Volvo, and the World Council of Churches, call on governments to reduce

governments that are subject to the Kyoto Protocol, most notably the European Union (EU), are already implementing such a program.⁷ Each day that passes in which the United States lacks a comparable program accentuates the gap between the developing carbon-trading expertise of U.S. businesses and regulators and those of other nations.

While this disparity works to the United States' comparative disadvantage, it also has certain short-term advantages. By serving as a source of preapproved emissions reduction credits, the existence of the EU trading market (as well as the voluntary markets that have recently appeared in the United States) helps make possible a judicially initiated emissions trading market.⁸ Thus, a judicially prompted GHG emissions trading market uses both time and opportunity wisely; with the help of more-developed emissions trading regimes in other parts of the world, it fills the existing federal regulatory gap with the very same policy that the federal government is likely to adopt, thereby smoothing the transition to that inevitable policy result.

Much of this Article is devoted to providing a rationale for courts' incorporation of emissions offsets as a compliance option in public nuisance climate change litigation, the potential barriers to courts' willingness to adopt this remedy, and strategies to overcome judicial reluctance. While it will be necessary at times to discuss some aspects of the plaintiff's prima facie case for public nuisance, such as the manner in which the fungibility of GHG emissions reduces the plaintiff's burden of establishing causation, I have left the comprehensive analysis of these elements of the plaintiff's case to the more-capable talents and labors of others.⁹

GHG emissions and increase energy efficiency); *see also* *Developers Hopeful About a U.S. Carbon-Trading Market*, L.A. TIMES, Jan. 20, 2007, at C2 (describing the U.S. Climate Action Partnership, formed between ten major U.S. corporations and environmental groups to lobby for climate change legislation).

⁷ EUROPEAN COMM'N, EU ACTION AGAINST CLIMATE CHANGE: EU EMISSIONS TRADING—AN OPEN SCHEME PROMOTING GLOBAL INNOVATION 6 (2005), available at http://ec.europa.eu/environment/climat/pdf/emission_trading2_en.pdf; *see also* *infra* Part IV.C.1.

⁸ *See* *infra* Part IV.C.2 (identifying the Chicago Climate Exchange as a potential source of “pre-approved” GHG emissions credits for U.S. tort defendants”).

⁹ *See* David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1 (2003); Thomas W. Merrill, *Global Warming as a Public Nuisance*, 30 COLUM. J. ENVTL. L. 293 (2005); Matthew F. Pawa & Benjamin A. Krass, *Global Warming As a Public Nuisance: Connecticut v. American Electric Power*, 16 FORDHAM ENVTL. L. REV. 407 (2005); Benjamin P. Harper, Note, *Climate Change Litigation: The Federal Common Law of Interstate Nuisance and Federalism Concerns*, 40 GA. L. REV. 661 (2006); *see also* Global Warming Panel, Part II, *The Role of State Attorneys General in National Environmental Policy*, 30 COLUM. J. ENVTL. L. 351, 352 (2005) (re-

I. A COMPARISON OF THE RELATIVE EFFICACY OF STATE POSITIVE
REGULATION AND COMMON LAW LITIGATION IN PROMPTING A
FEDERAL REGULATORY RESPONSE

A. *The State-Level Response to the Federal Climate Change Policy Gap*

For at least the past decade, states have been at the vanguard of policy and regulatory responses to climate change, filling a gap left by a lack of leadership on behalf of the federal government.¹⁰ The federal government has failed to take an aggressive stance on climate change mitigation; Congress has yet to enact a program for mandatory reductions and the Bush administration's reliance upon voluntary emissions reductions and its targeted increase in GHG intensity¹¹ is not expected to reduce such intensity beyond that achieved by usual business trends alone.¹² Although, as a result of the Court's ruling in

marks of Professor Thomas Merrill, providing a laundry list of all of the knotty legal issues raised by a public nuisance global warming lawsuit).

¹⁰ For excellent overviews of the climate change policies of all fifty states and many local governments, see Pew Ctr. on Global Climate Change, What's Being Done in the States, http://www.pewclimate.org/what_s_being_done/in_the_states/ (last visited May 1, 2007) and United States Environmental Protection Agency, Climate Change, State and Local Governments, <http://www.epa.gov/climatechange/wydc/stateandlocalgov/index.html> (last visited May 1, 2007).

¹¹ See Press Release, Office of the White House Press Sec'y, Fact Sheet: President Bush Announces Clear Skies & Global Climate Change Initiatives (Feb. 14, 2002), <http://www.whitehouse.gov/news/releases/2002/02/20020214.html> (unveiling "a bold new strategy for addressing global climate change"). For information on the commitment of seven northeastern states to create a regional cap-and-trade program applicable to the electric power sector starting in 2009, see Regional Greenhouse Gas Initiative [RGGI], <http://www.rggi.org/index.htm> (last visited May 1, 2007). For scholarly treatments of the growing phenomenon of state and local action on climate change, see, for example, BARRY G. RABE, STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY 18-21 (2004) (identifying distinct periods in the evolution of state and local environmental initiatives); John Dernbach, *Moving the Climate Change Debate from Models to Proposed Legislation: Lessons from State Experience*, [2000] 30 *Envtl. L. Rep.* (Envtl. L. Inst.) 10,933, 10,949-72 (Nov. 2000) (suggesting legislative solutions based on the successes and failures of legislative attempts on the state level); Engel & Saleska, *supra* note 3, at 209-22 (analyzing observed patterns of subglobal action in light of behavior predicted by modeling); Laura Kosloff & Mark Trexler, *State Climate Change Initiatives: Think Locally, Act Globally*, NAT. RESOURCES & ENV'T, Winter 2004, at 46, 47-50 (describing and analyzing the role played by state and local environmental initiatives) and Robert B. McKinstry, Jr., *Laboratories for Local Solutions for Global Problems: State, Local and Private Leadership in Developing Strategies To Mitigate the Causes and Effects of Climate Change*, 12 *PENN ST. ENVTL. L. REV.* 15, 26-31 (2004) (attributing the development of state action to the federal government's inability to act).

¹² The Bush administration's goal is to reduce the overall GHG intensity (metric tons of GHGs emitted per million dollars in gross domestic output) by 18% over the

Massachusetts v. EPA,¹³ the EPA is now under court order to consider regulating vehicle GHG emissions under the Federal Clean Air Act, it is probably unlikely that federal action compelled by litigation will produce aggressive action, at least any time soon. Nevertheless, state climate regulation is piecemeal, of varying levels of stringency, and thus far has not added up to a whole lot of aggregate emissions reductions.¹⁴ Thus state and local climate change mitigation poses a threshold question that needs to be addressed prior to considering the special situation of common law litigation: does it make any sense for subglobal actors to address a global environmental problem, especially one that results from the degradation of a global commons such as the earth's climate system?

Unquestionably, a global environmental problem warrants an international response.¹⁵ Climate change is the result of a global trag-

decade between 2002 and 2012. However, the GHG intensity of the economy dropped by about the same amount, 17.4%, over the decade between 1990 and 2000. Thus if the next decade reflects the same trend toward greater efficiency in the use of fossil fuels as the previous decade, the economy will achieve the Bush administration goal without the need for any additional incentives or regulatory requirements. See John Holdren, Dir., Program on Sci., Tech., & Pub. Policy, Harvard Univ., Presentation at The Ohio State University: The Science and Politics of Global Climate Change: Does the Bush Administration Think It Can Fool Mother Nature? 56-59 (Oct. 7, 2004) (on file with author).

¹³ 127 S. Ct. 1438, 1462-63 (2007) (holding that the Federal Clean Air Act authorizes the EPA to regulate GHG emissions from motor vehicles and hence the EPA Administrator must apply her "judgment" to determine whether regulation is warranted because such emissions, in the words of section 202(a)(1) of the Act, 42 U.S.C. § 7521(a)(1) (2000), "may reasonably be anticipated to endanger public health or welfare").

¹⁴ There has been no definitive estimate of the total quantity of GHG emissions reduced through the various state and local programs and initiatives, perhaps because it is such a fast-moving statistic. However, the author and another researcher have estimated that the adoption, by ten states, of the California GHG vehicle emissions standards in addition to the renewable portfolio standards in effect in twenty-one or so states still only reduces total U.S. GHG emissions by between 1% and 1.5% "in the 2015-20 timeframe." Engel & Saleska, *supra* note 3, at 212-13. This falls far short of the 2.7% to 3.4% reduction called for by economists that estimate the optimal amount of emissions reductions for the United States acting unilaterally. *Id.* at 207 tbl.3, 213 (comparing the expected reduction due to state and local action with those predicted efficient by William Nordhaus and Zili Yang in their Regional Dynamic General-Equilibrium (RICE) model).

¹⁵ For proponents of the need for an international, as opposed to a unilateral, response to climate change, see Daniel C. Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. REV. 1495, 1554-55 (1999) ("[T]o be structurally sound and to deliver efficient (and fair) results, the regulatory calculus must include all of the potential cost bearers and beneficiaries of governmental intervention (or nonintervention).") and Robert N. Stavins, *Policy Instruments for Climate Change: How Can National Governments*

edy of the commons; it is the combined result of GHG emissions from billions of sources around the world which, in total, exceed the earth's natural carrying capacity.¹⁶ As with common-pool environmental resources smaller than the troposphere, achieving reductions in the exploitative activity by way of a cooperative solution among the largest users is more efficient than relying upon independent adoption of unilateral reductions by a fraction of such users.¹⁷

That said, the emphasis on an internationally negotiated solution may still be overstated. Depending upon the size of the nation's emissions, unilateral reductions may, in fact, be economically rational even if less efficient than reductions made pursuant to an international cooperative agreement.¹⁸ More importantly for present purposes, action at the subglobal level may constitute an initial step toward regulation at a higher jurisdictional level, even eventually culminating in actions taken pursuant to an international agreement.

Address a Global Problem?, 1997 U. CHI. LEGAL F. 293, 323 ("Because unilateral action will invariably be highly inefficient, any domestic program requires an effective international agreement, if not a set of international greenhouse policy instruments.").

¹⁶ See DANIEL A. FARBER ET AL., ENVIRONMENTAL LAW 47 (7th ed. 2006) (identifying climate change as the "most striking" commons problem); Richard B. Stewart, *Environmental Regulation and International Competitiveness*, 102 YALE L.J. 2039, 2097-99 (1993) (advocating international solutions to the international tragedy of the commons); Barton H. Thompson, Jr., *Tragically Difficult: The Obstacles to Governing the Commons*, 30 ENVTL. L. 241, 253 (2000) (examining the unique and traditional aspects of global warming as a commons problem). On an annual basis, all sources of GHGs in the world emit approximately 7.9 gigatons of GHGs. Of this, approximately 4.6 gigatons are absorbed by the earth's ecosystem—in the ocean, soils, forests, and other vegetative matter—while the 3.3 gigatons emitted in excess of the earth's natural absorptive capacity is the source of anthropogenic-based climate change. FERN, SINKS IN THE KYOTO PROTOCOL: A DIRTY DEAL FOR FORESTS, FOREST PEOPLES AND THE CLIMATE 7 fig.2 (2001).

¹⁷ See Franz Hackl & Gerald J. Pruckner, *How Global Is the Solution to Global Warming?*, 20 ECON. MODELLING 93, 102-11 (2002) (comparing efficient GHG control rates under conditions of global cooperation and noncooperation); William D. Nordhaus & Zili Yang, *A Regional Dynamic General-Equilibrium Model of Alternative Climate-Change Strategies*, 86 AM. ECON. REV. 741, 751-55 (1996) (same); Zili Yang, *Dual-Rate Discounting in Dynamic Economic-Environmental Modeling*, 20 ECON. MODELLING 941, 946-48 (2003) (same).

¹⁸ See Engel & Saleska, *supra* note 3, at 207-08 (arguing that unilateral action to reduce domestic GHG emissions is economically rational for nations with large emissions, even if it is not optimal in comparison to the reductions called for under a cooperative international solution).

B. *The “Domino Effect”*

Regulation at the subglobal level may be an effective means of triggering regulation at a higher jurisdictional level. This can occur as a result of interest group influence on the political process or through trade and globalization. At the national level, Elliott, Ackerman, and Millian set forth the still-dominant theory that the imposition of widely disparate costs upon industry through inconsistent state regulations will catalyze industry to seek preemptive federal regulation in an effort to reduce such costs or at least blunt their anticompetitive effect.¹⁹ Indeed, this theory seems to characterize accurately several instances of industry support for federal environmental regulation.²⁰

¹⁹ See E. Donald Elliott, Bruce A. Ackerman & John C. Millian, *Toward a Theory of Statutory Evolution: The Federalization of Environmental Law*, 1 J.L. ECON. & ORG. 313, 330-31 (1985) (attributing the automobile industry’s support for the Motor Vehicle Air Pollution Control Act of 1965 to a fear of “differing or inconsistent air pollution standards set at the state and local level” and “political domino effect[s] in which one state legislature after another would set more and more stringent emissions standards without regard to the costs or technical difficulties involved”).

²⁰ Two examples are the industry-supported campaigns to include tailpipe emissions standards under the Federal Clean Air Act of 1965, see S. REP. NO. 89-192, at 5-6 (1965) (“[I]t would be more desirable to have national standards rather than for each state to have a variation in standards and requirements which could result in chaos insofar as manufacturers, dealers, and users are concerned.”), and to establish nationally uniform energy efficiency standards for appliances under the National Appliance Energy Conservation Act of 1987, see S. REP. NO. 100-6, at 4 (1987) *reprinted in* 1987 U.S.C.C.A.N. 52, 54-55 (“[A] system of separate State appliance standards has begun to emerge and the trend is growing. Because of this trend, appliance manufacturers were confronted with the problem of a growing patchwork of differing state regulations which would increasingly complicate their design, production and marketing plans.”). See also BRUCE A. ACKERMAN & WILLIAM T. HASSLER, CLEAN COAL/DIRTY AIR 31-32 (1981) (describing the eastern U.S. coal industry’s surprising support for Section III of the proposed amendments to the Clean Air Act in 1977, and quoting language in the 1976 House Committee report revealing that the motive behind the industry’s support was a desire to equalize the playing field between states with “cheaper low-sulfur coal,” and states with “predominately higher sulfur coals”). Freeman and DeShazo have delved deeper than Elliott et al., in an effort to better understand how interest group dynamics at the state level can shape the nature of the ultimate federal regulatory response. J.R. DeShazo & Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499 (2007). They posit that federal regulation is most likely to contain ceilings preempting more stringent state standards, where heterogeneous state regulation threatens to impose cost heterogeneity upon industries that produce national, or at least regional, products. *Id.* at 1515-16 They predict, on the other hand, that federal statutes will contain minimum standards where state regulation has been lacking or weak. *Id.* at 1503-04.

There is little reason to doubt that the same dynamic can and does take place on the international level.²¹ Several examples illustrate this dynamic. One is the development of the environmental management systems of ISO 14000. There are many drivers behind the ISO 14000 standard, but one of them appears to be a quest by multinational businesses for uniform environmental standards as an alternative to the more costly process of complying with disparate standards of the United States and other industrialized nations.²² A second example is the 1989 Montreal Protocol phasing out ozone-depleting chemicals. Ratification of the Protocol was given a significant boost when U.S. industry supported the treaty after it became clear that the United States was intent upon adopting stringent domestic regulation of chlorofluorocarbons.²³ International climate change treaties comprise a third example.²⁴

Elliott et al.'s industry lobbying theory may be the leading interest group theory explaining how local regulation might trigger regulatory action at higher levels of government, but it is not the only one. A competing theory is suggested by the traditional "states as laboratories of democracy" idea suggested by Justice Brandeis.²⁵ According to this theory, federal policymakers will propose national legislation once a

²¹ See ELIZABETH R. DESOMBRE, DOMESTIC SOURCES OF INTERNATIONAL ENVIRONMENTAL POLICY: INDUSTRY, ENVIRONMENTALISTS, AND U.S. POWER 9-10 (2000) ("When U.S. industry has higher production costs than its international competitors due to regulation, or when some industry has developed a substitute for regulated substances, either type of industry will gain from international adoption of the domestic regulations."); Jonathan B. Wiener, *Something Borrowed for Something Blue: Legal Transplants and the Evolution of Global Environmental Law*, 27 *ECOLOGICAL L.Q.* 1295, 1308 (2001) (detailing the "conscious legal borrowing" from national law by the drafters of international climate change treaties).

²² See Paulette L. Stenzel, *Can the ISO 14000 Series Environmental Management Standards Provide a Viable Alternative to Government Regulation?*, 37 *AM. BUS. L.J.* 237, 253-54 (2000) ("[A] major impetus for the ISO 14000 standards is the need for harmonization among various environmental management and auditing programs. . . . These programs, using varying standards and processes, increase costs and make compliance difficult for companies operating in more than one country.").

²³ RICHARD ELLIOT BENEDICK, *OZONE DIPLOMACY* 31 (1991) ("The strength of public concern confronted American Industry with the threat of a patchwork of varying state regulations. . . . U.S. industry not only became resigned to controls but even publicly favored federal regulations, which would at least be uniform and therefore less disruptive.").

²⁴ See Wiener, *supra* note 21, at 1339-40.

²⁵ See *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) ("It is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.").

promising policy approach emerges after a period of state experimentation. Still another theory, a variant of Elliott et al.'s interest group theory and the Brandeisian idea, is that federal lawmakers might intervene to enact a promising state or regional regulatory approach that is more efficiently implemented on a national scale. An example of this might be regulation through a tradable permit program. Implemented nationwide, as opposed to on the state or regional level, the participants in a marketable trading program reap the benefits of more trading partners and hence a more efficient market. Thus, industries covered by a state or regional trading program might seek federal legislation to expand the trading market to cover similar sources nationwide.²⁶

C. *State Public Nuisance Litigation as a Subglobal "Domino"*

Tort litigation, like positive regulation, can be as effective a means of imposing varying costs upon industry as state-by-state regulation and hence is capable of triggering exactly the same industry response.²⁷ Indeed, there is evidence that the two public nuisance climate change cases may already be having this effect; defendants in one suit have called publicly for federal global warming regulation,²⁸ and Congress is now considering ways to use the liability threat to help

²⁶ For example, one might expect that electric utility companies, soon subject to the GHG cap-and-trade program of the northeastern states under the RGGI, may seek the enactment of a federal cap-and-trade program to broaden the scope of the program and thus increase the number of potential trading partners from which to buy and sell excess emissions credits.

²⁷ Moreover, it is not clear that industry must lose in the litigation, or lose unambiguously, for litigation to spur industry interest in a federal regulatory solution. None of the lawsuits filed against the gun industry for liability related to crimes committed with guns were successful, and yet the industry was able to obtain a broad liability exemption from Congress. See Protection of Lawful Commerce in Arms Act, Pub. L. No. 109-92, 119 Stat. 2095 (2005) (to be codified at 15 U.S.C. §§ 7901-7903, 18 U.S.C. §§ 921, 922, 924) (exempting firearms dealers and manufacturers from liability for crimes committed with the use of their products). This example may also indicate that although litigation success is not necessary to spur industry to seek federal regulation, it may influence the stringency of the regulatory result obtained from Congress.

²⁸ Subsequent to the filing of the lawsuit, one of the utility company defendants in the public nuisance lawsuit filed by Connecticut and other northeastern states announced its support of mandatory emissions reductions. See Jeffrey Ball & Antonio Regalado, *Cinergy Backs U.S. Emissions Cap*, WALL ST. J., Dec. 2, 2004, at A6 ("Cinergy Corp., one of the nation's biggest electric utilities, endorsed the idea of a national cap on global-warming emissions and . . . believes . . . that Congress should [regulate] to 'take the unnecessary uncertainty out of national environmental policy.'").

support a mandatory emissions reduction program.²⁹ The cost-imposing nature of litigation is especially true of nuisance law, which is notoriously ill defined and whose elements and remedy differ significantly from state to state.³⁰ The uncertainty in the legal doctrine will elevate costs while the differences between states will cause costs to vary, perhaps significantly.

As others have noted,³¹ there is no overlap between the state plaintiffs and power plants run by defendant companies named in the state-initiated public nuisance lawsuits. The fact that the defendants are out of state both explains the lawsuits, and I will argue, makes it even more likely that the lawsuits could prompt federal regulation. By suing large out of state companies, the state plaintiffs may be attempting to counteract the anticompetitive effects of their own positive regulation of in-state sources of GHGs. In essence, the public nuisance lawsuits against out-of-state companies, companies that are beyond the reach of its positive law, might be considered an extension of the state's strategy to reduce in-state emissions. For example, all of the state plaintiffs in the public nuisance suit against midwestern and southern electric power generators have committed to reducing

²⁹ Litigation against industrial contributors to global warming opens up the possibility of a quid pro quo: industry accepts federal mandatory emissions limits in exchange for immunity from liability for past contributions to climate change. Such an exchange is apparently under discussion on Capitol Hill. Doug Obey, *Backers of CO2 Curbs Eye Liability Relief to Bolster Industry Support*, INSIDEEPA, Sept. 8, 2006 ("Capitol Hill supporters of legislation to regulate carbon dioxide (CO₂) emissions are quietly considering whether to provide industry liability protection from global warming-related lawsuits, in an effort to win backing for mandatory GHG limits, according to Capitol Hill and other sources.")

³⁰ See W. PAGE KEETON ET AL., *supra* note 4, § 86 at 616-17 ("There is general agreement that [nuisance] is incapable of any exact or comprehensive definition. Few terms have afforded so excellent an illustration of the familiar tendency of the courts to seize upon a catchword as a substitute for any analysis of a problem . . ." (footnote omitted)). But see DAN B. DOBBS, *THE LAW OF TORTS* § 462 at 1320-21 (2000) (contending that, although nuisance was once the "jungle Prosser described," separately analyzing private nuisance from public and statutory nuisance cases "make[s] possible a reasonably coherent understanding of private nuisance"). While public nuisance may be less muddled than private nuisance to begin with, the plaintiffs in the two cases under consideration here have magnified the uncertainty by suing in the alternative, under either the state law of public nuisance or federal common law of nuisance. See, e.g., Complaint, *supra* note 1, at 1-2 (describing a public nuisance tort action taken by eight states against several companies under federal and state law, and listing the Plaintiff states as Connecticut, New York, California, Iowa, New Jersey, Rhode Island, Vermont, and Wisconsin and the Defendants as corporations incorporated in New York, Delaware, and Minnesota).

³¹ See Harper, *supra* note 9, at 689-90.

GHGs from their own in-state utilities and several are well along the way to implementing such reductions.³² Unless their GHG emissions are similarly controlled, cheaper electricity generated by the defendant out-of-state utility companies might replace the electricity provided by the plaintiff states' in-state electric power generating companies. Thus one motivation for the lawsuit could be an effort to "level the competitive playing field" between in-state and out-of-state utilities through the application of similar emissions standards. California, however, has not only committed to large in-state GHG reductions across its economy, it has also promulgated carbon dioxide limits for motor vehicles sold in the state.³³ Implementation of these regulations has been delayed, however, by the EPA's failure to grant California the waiver of preemption required by the Federal Clean Air Act,³⁴

³² See Memorandum of Understanding, Reg'l Greenhouse Gas Initiative 1 (Dec. 20, 2005), available at http://www.rggi.org/docs/mou_brief_12_20_05.pdf (providing that Connecticut, New York, New Jersey, and Vermont are all participating members of the RGGI). In December 2005, the RGGI states committed to implementing the first regional cap-and-trade program for carbon dioxide emissions from electric utilities located in participating states. Beginning in 2009, the RGGI will stabilize carbon dioxide emissions from power plants in the region at current levels through 2015, and reduce emissions by 10% from current levels by 2019. *Id.* at 2-3; *Seven Northeast States Launch Regional Greenhouse Gas Initiative*, ENV'T NEWS SERVICE, Dec. 20, 2005, <http://www.ens-newswire.com/ens/dec2005/2005-12-20-05.asp>. California, also a party to the utility public nuisance suit, is perhaps the national leader in terms of domestic regulation of GHGs. On September 27, 2006, Governor Schwarzenegger signed AB No. 32, the Global Warming Solutions Act, which caps California's GHG emissions at 1990 levels by 2020. See California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE §§ 38500-38599 (West 2007); California Global Warming Act, Pew Ctr. on Global Climate Change, http://www.pewclimate.org/what_s_being_done/in_the_states/ab32/index.cfm (last visited May 1, 2007) (summarizing the goals and methods of the act). The Act requires that electric utilities comply with mandatory GHG emissions reporting. CAL. HEALTH & SAFETY CODE § 38530. According to one source, "[t]his means the state's investor-owned utilities, municipal utilities and load-serving entities can expect to be some of the first entities required to report and reduce GHG emissions." The California Climate Action Registry and AB 32: Frequently Asked Questions 1-2, http://www.climateregistry.org/docs/ABOUTUS/AB_32_FAQs_101006.pdf (last visited May 1, 2007). Wisconsin and Iowa both have climate change action plans that discuss the advisability of reducing emissions from the in-state electric utility sector. For instance, Wisconsin's plan focuses on reducing carbon dioxide from the electric utility sector, concluding that the state could significantly reduce GHG emissions from that sector at little or no cost. Wisconsin Climate Action Plan 20-21, <http://dnr.wi.gov/org/aw/air/global/WICCAP.pdf> (last visited May 1, 2007). The Iowa plan proposes a program for reporting and reducing GHGs from the state's electric utility sector. RICHARD A. NEY ET AL., UNIV. OF IOWA, IOWA GREENHOUSE GAS ACTION PLAN 59-64 (1996), available at <http://atmos.cgrer.uiowa.edu/research/reports/iggap/FinalReport.pdf>.

³³ CAL. CODE REGS. tit. 13, § 1961.1 (2005).

³⁴ Clean Air Act § 209(b), 42 U.S.C. § 7543(b) (2000).

and by a legal challenge by the automobile industry.³⁵ Thus, California's public nuisance lawsuit against major automobile manufacturers, in which the State is seeking damages, may be an effort to demonstrate the very real costs of climate change to a coastal state, such as California, and hence further justify its unilateral approach to motor vehicle GHG emissions.³⁶ Suing out-of-state businesses might also be considered a second-best strategy for achieving nationwide regulation of GHGs; each of the state plaintiffs in the public nuisance lawsuits, other than Iowa and Wisconsin, was also a plaintiff in the litigation against the EPA for failure to promulgate national GHG emissions standards for motor vehicles.³⁷

The very fact that state common law climate change lawsuits target out-of-state defendants may enhance the probability that these suits will prompt a federal regulatory response. By virtue of being located out of state, the defendant industries are unlikely to have a reserve of goodwill within the hallways of the plaintiff's state office buildings that might help in extricating themselves from the litigation. As a result, they may be more likely to seek relief from federal authorities. In turn, federal authorities may lend a more sympathetic ear to the pleas of industry that it is the subject of a nuisance enforcement suit filed by an allegedly overreaching neighboring state.³⁸

³⁵ California's regulations are currently being challenged by the automobile industry, which alleges that the standards are preempted by the federal Energy Policy and Conservation Act, 49 U.S.C. § 32919(a) (2000). *Central Valley Chrysler Jeep, Inc. v. Witherspoon*, No. CV F 04-6663 AWI LJO, 2007 WL 135688, at *1 (E.D. Cal. Jan. 16, 2007). Furthermore, the U.S. Department of Transportation has attempted to effectuate this preemption by administrative rule. *See Average Fuel Economy Standards for Light Trucks Model Years 2008–2011*, 71 Fed. Reg. 17,566, 17,654 (Apr. 6, 2006) (to be codified at 49 C.F.R. pts. 523, 533, 537).

³⁶ For example, California is ineligible for the needed waiver of federal preemption under the Clean Air Act, should the EPA find that California "does not need such state standards to meet compelling and extraordinary conditions." Clean Air Act § 209(b)(1)(B), 42 U.S.C. § 7543(b)(1)(B) (2000). In justifying its claim for damages, California bolsters its argument that its regulation of vehicle GHG emissions is needed to meet the extraordinary threats posed by global warming to its environment, threats that include not only loss of its magnificent coastal resources, but also loss of its supply of water through reduced snowmelt.

³⁷ *See Massachusetts v. EPA*, 127 S. Ct. 1438, 1438 (2007).

³⁸ *Cf.* 33 U.S.C. §§ 1342(b), 1342(d)(2)(A) (providing a process, under the Federal Clean Water Act, for an affected state to complain to the permitting state and to the EPA about a source of pollution in the permitting state and authorizing the EPA to bar the grant of a permit based upon an affected state's complaint); 42 U.S.C. § 7426 (requiring, under the federal Clean Air Act, that states require that major sources of air pollution within that state notify certain states affected by the pollution and authorizing the EPA to require that such sources reduce their emissions).

Not only may state-initiated public nuisance litigation against out-of-state industries be effective in triggering a federal regulatory program, the viability of such suits is likely limited to the time period prior to federal enactment of such a program. Thus, there is little basis for fearing that state public nuisance lawsuits constitute a permanent enlargement of a state's regulatory apparatus; Supreme Court precedents ensure that such suits are unlikely to survive the development of federal standards addressing the same activities that serve as the basis for the suits. Under *City of Milwaukee v. Illinois*,³⁹ claims under the federal common law of nuisance by one state or local sovereign government against an out-of-state source of pollution would appear to be preempted once Congress enacts applicable federal legislation containing standards of conduct.⁴⁰ Similarly, the Court has held that the nuisance law of all but the source state is preempted once Congress enacts standards applicable to the targeted conduct.⁴¹ By basically eliminating the viability of such suits upon the enactment of a federal program, the Court ensures that state standards govern only during the time period that precedes congressional action.⁴²

These precedents demonstrate that the state-initiated climate change lawsuits now being filed have a finite lifetime; they are only viable until such time as Congress enacts an applicable program for reducing GHGs. As noted above, a recent decision by the Supreme Court establishes that GHG emissions are presently subject to federal regulation under the Clean Air Act.⁴³ Nevertheless, state common law litigation is unlikely to be preempted until such time as the EPA actu-

³⁹ 451 U.S. 304 (1981).

⁴⁰ *Id.* at 317 (concluding, with respect to water pollution, that Congress "has occupied the field through the establishment of a comprehensive regulatory program supervised by an expert administrative agency"); see also *United States v. Kin-Buc, Inc.*, 532 F. Supp. 699, 702 (D.N.J. 1982) (finding the federal common law of nuisance as applied to air pollution disputes preempted by the federal Clean Air Act).

⁴¹ *Int'l Paper Co. v. Ouellette*, 479 U.S. 481, 497 (1987) ("The [Clean Water Act] precludes only those . . . standards . . . that are incompatible with those established by the procedures set forth in the Act. . . . [N]othing in the Act bars aggrieved individuals from bringing a nuisance claim pursuant to the laws of the *source* state.").

⁴² This is also consistent with the role of public nuisance as a "gap filler" in the field of environmental law. See James R. Drabick, Note, "*Private*" Public Nuisance and Climate Change: Working Within, and Around, the Special Injury Rule, 16 FORDHAM ENVTL. L. REV. 503, 519 (2005).

⁴³ See *Massachusetts v. EPA*, 127 S. Ct. 1438, 1459-60 (2007).

ally promulgates GHG emissions standards applicable to the conduct that is the subject of the lawsuits.⁴⁴

In sum, litigation, and especially litigation against out-of-state industries, may be an effective means by which states catalyze the enactment of a federal regulatory program. However, until such time as a federal regulatory program comes into existence, the regulatory impact of such state litigation may serve in the place of a federal program. Supreme Court precedents ensure that federal standards will largely displace this ad hoc state scheme if and when it is enacted by Congress.

D. *The Judicial Response to Subglobal “Domino” Litigation*

Regardless of whether state-level common law litigation is ultimately successful in prompting federal climate change regulation, an important question remains: what, if any, impact should the potential for such a federal regulatory program have in the meantime upon courts hearing such cases? Certainly the potential for federal regulation should not be used as an excuse for inaction by the courts; federal regulation may fail to materialize and, as argued above, adjudication of these claims may be the best route to prompting such regulation.⁴⁵ Furthermore, such lawsuits are, by definition, gap-filling measures used by states to support positive state-level regulation of GHG emissions.⁴⁶ Judicial deference to potential federal regulation prevents states from using their common law authority for such gap-filling purposes.

At the same time, it is reasonable for a court to be on the lookout for ways of crafting the relief requested in such lawsuits in a manner that is consistent with expected federal regulatory outcomes. To the extent that public nuisance climate change litigation is a stopgap measure, consistency between judicial and eventual federal regulatory remedies will result in cost savings both to defendants and to society. By complying with a judicially imposed remedy consistent with a later-promulgated federal regulatory program, the defendant is saved from

⁴⁴ *But see* Merrill, *supra* note 9, at 313, 316-17 (arguing that a claim under the federal common law of public nuisance against out-of-state industries for emitting GHGs may be preempted at the present time, despite the EPA’s silence on this matter, under the “field displacement” doctrine).

⁴⁵ *But cf.* Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 274 (S.D.N.Y. 2005) (dismissing states’ public nuisance climate change lawsuit on the grounds that it presented nonjudicial political questions).

⁴⁶ *See supra* Part I.C.

expending additional resources to comply with such a program. Society benefits as well; information gained through the individual state-initiated court cases will enable lawmakers to develop better-tailored and more successful regulatory programs, substantially reducing the costs of the eventual federal regulatory program.

With respect to public nuisance climate change litigation, I argue that these considerations support judicial remedies that allow defendants to comply with any judicially imposed GHG abatement order with GHG emissions credits.⁴⁷ As discussed below, if and when a federal climate change regulatory program is enacted, it is almost sure to consist of a cap-and-trade program, whereby sources may use tradable emissions credits to comply with GHG emissions caps.⁴⁸ Therefore, adoption of a judicial remedy that reflects the likely design of the future regulatory solution reduces the costs of compliance for individual defendants. This, in turn, reduces the potential unfairness involved in essentially requiring such defendants to comply with a future regulatory program prior to the program's effective date and hence prior to the time when all other similar industries will be required to comply. Additionally, because industries not sued could be expected to reduce their GHG emissions in order to sell excess credits to defendants subject to a court-imposed abatement order,⁴⁹ adoption of an emissions trading compliance option will have the further benefit of jump-starting compliance with a future regulatory regime, even from companies not subject to a court-imposed GHG abatement order.

⁴⁷ For a discussion of how such a proposal would work in practice, see *infra* notes 51-52 and accompanying text.

⁴⁸ See *infra* notes 58-59 and accompanying text (discussing the options lawmakers have when designing an environmental regulatory program).

⁴⁹ This is a basic tenet of open market emissions trading, which is the original emissions trading approach employed by the EPA under the Clean Air Act. See RICHARD A. LIROFF, AIR POLLUTION OFFSETS: TRADING, SELLING AND BANKING 23-26 (1980) (describing current trading policies in air pollution nonattainment areas, according to which industries can construct new or modified major sources of pollution if they can offset the additional emissions with emissions reduction credits generated through the reduction in discharges at existing sources); see also Susan Wood, *Offset Credits: The Growth of a Market*, ENVTL. FIN., Feb. 2000, at 18 (describing financial incentives to reduce emissions and thereby create sellable emissions reduction credits).

II. USE OF EMISSIONS REDUCTION OFFSETS AS A COMMON LAW LIABILITY COMPLIANCE OPTION

A. *The Mechanics of Net Emissions Accounting*

The usual remedy awarded in a public nuisance action is injunctive relief in the form of a court order requiring the defendant to abate its contribution to the nuisance.⁵⁰ Although some states have, by statute, permitted private plaintiffs to recover damages under a public nuisance theory, it is not unusual to find that the same states expressly limit the relief available when the state is the plaintiff in the abatement action.⁵¹

The basic idea advanced in this Article is that courts should enable defendants held liable for contributing to the public nuisance of global warming to use emissions offset credits, purchased or otherwise obtained from third parties, to comply with a court order. Third parties might generate such credits through permanent reductions in their GHG emissions or through carbon sequestration projects. For example, suppose Utility A is required to reduce its emissions by a court order entered against it as a remedy in a successful lawsuit alleging that the GHG emissions emanating from its coal-fired electric generating units are a public nuisance. Suppose also that Utility A is locked into a long-term supply contract for the coal it burns and that the cost of breaking the contract is significant. Suppose that, given this contract, Utility A could only reduce its own GHG emissions sufficiently to comply with the court order by replacing its current plant with an Integrated Gasification Combined Cycle (IGCC) facility, an extremely expensive proposition. Suppose finally that Utility B, which also owns coal-burning, electricity-generating plants, but which is not locked into a long-term coal supply contract, could convert its plant to natural gas and, in so doing, reduce its GHG emissions in an amount comparable to the reductions required of Utility A. Utility B would be willing to do so, however, only if it could sell to Utility A the emissions reductions, or credits, generated by such a conversion and if its asking

⁵⁰ DOBBS, *supra* note 30, § 468 at 1338 (“On the ground that the damages remedy is inadequate to protect rights in property, courts often issue injunctions compelling the defendant to abate private as well as public nuisances.”).

⁵¹ See *People ex rel. Van de Kamp v. Am. Art Enters.*, 656 P.2d 1170, 1173 n.11 (1983) (“[A]lthough California’s general nuisance statute expressly permits the recovery of damages in a public nuisance action brought by a specially injured party, it does not grant a damage remedy in actions brought on behalf of the People to abate a public nuisance.”).

price is significantly less than the costs to Utility A of replacing its generating units with IGCC technology. By allowing Utility A to comply with the court order by purchasing GHG emissions credits from Utility B, the same amount of emissions are reduced, but at less cost than if Utility A were required to achieve such reductions at its own facility.

Despite the widespread acceptance of the use of emissions trading to meet emissions reductions dictated by regulation, it has yet to be incorporated into judicially fashioned relief in a common law liability action. This, and the corresponding lack of scholarship suggesting the idea, might be explained by a variety of factors—the difficulty of establishing the liability of one of many contributors to an air pollution problem for which an emissions trading program might be suitable;⁵² the fact that many nonlocalized pollution problems are today addressed by federal environmental statutes that have largely supplanted common law remedies;⁵³ and the seeming futility of suggesting a remedy requiring, as a result of the need for third-party emissions credits, the participation of nonparties.⁵⁴

Nevertheless, the special characteristics of public nuisance climate change litigation may present an appropriate constellation of facts and circumstances to justify dispensing with any potential judicial reluctance. First, as will be explained below, plaintiffs suing in public nuisance over a defendant's contribution to global warming may have a less onerous causation burden than that confronting a plaintiff su-

⁵² See, e.g., Ellen Friedland, Note, *Pollution Share Liability: A New Remedy for Plaintiffs Injured by Air Pollutants*, 9 COLUM. J. ENVTL. L. 297, 314-19 (1984) (exploring the difficulty of finding a polluter liable when such factors as time, geography, and topography complicate the plaintiff's ability to trace her injury to the polluter); Patrick J. Scully, Comment, *Proof of Causation in a Private Action for Acid Rain Damage*, 36 ME. L. REV. 117, 117 (1984) ("It is impossible to trace individual episodes of acid rain to the particular emissions sources causing the problem or to apportion acid rain injuries among contributing polluters.").

⁵³ Most federal environmental laws contain a savings clause preserving common law remedies. See, e.g., 42 U.S.C. § 6972(f) (2000) ("Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any standard or requirement . . . or to seek any other relief" (emphasis added)). Nevertheless, this has not prevented the courts from finding that federal environmental laws preempt state common law remedies for pollution discharges. See *supra* notes 39-41 and accompanying text (noting specifically *City of Milwaukee v. Illinois*, 451 U.S. 304, 317 (1981), and *Int'l Paper Co. v. Ouellette*, 479 U.S. 481, 497 (1987)).

⁵⁴ *Tradable Emissions: Hearing Before the J. Economic Comm.*, 105th Cong. 113 (1997) (statement of Daniel J. Dudek, Senior Economist, Environmental Defense Fund) ("An insufficient number of participants will doom an emissions trading market.").

ing for damages associated with a more localized pollutant such as sulfur dioxide. Second, by now, regulators and industry (though admittedly not courts) have more experience with emissions trading and the concept is now less foreign in the pollution context.⁵⁵ Third, as will also be discussed further below,⁵⁶ other nations' GHG emissions trading programs, as well as voluntary programs within the United States, provide ready sources of GHG emissions credits that defendants might use for compliance.

The basic rationale behind the use of tradable emissions credits for compliance purposes in litigation is the same as that advanced for using emissions trading as a compliance mechanism in regulatory proposals for climate change mitigation—the fungibility of the source and location of emission reductions for the mitigation of global warming. Like trades in emissions of chlorofluorocarbons, trades in emissions of carbon dioxide and other GHGs do not give rise to spatial concerns due to the fact that such gases fully mix in the upper atmosphere and thus, unlike many other pollutants, are incapable of causing pollution “hot spots.”⁵⁷ Furthermore, the harm from GHG emissions flows from the buildup of gases in the upper atmosphere, which causes changes to the earth's climatic system, as opposed to a harm resulting from direct exposure to carbon dioxide or any other GHG. These characteristics mean that, for purposes of mitigating the effects of climate change, which source reduces its emissions of GHGs is entirely irrelevant.

The fungibility of GHG emissions with respect to their contribution to climate change has a twofold significance when it comes to tort liability. On the one hand, it opens up new options for common law remedies, namely the defendant's optional use of third-party emissions offsets. On the other hand, it alleviates the plaintiff's burden in establishing liability in the first place. Because of the importance of the latter in even reaching the former, the implications of the fungibility of GHG emissions for the plaintiff's ability to establish causation and the unreasonableness of the defendant's conduct are discussed below.

⁵⁵ In the United States, this is primarily due to the acid rain emissions trading program applicable to electric utilities under the 1990 Amendments to the Clean Air Act. See 42 U.S.C. §§ 7651b–7651c (regulating the trading of allowances for sulfur dioxide emissions).

⁵⁶ See *infra* Part IV.C (explaining GHG emissions trading regimes in the EU and U.S. private markets).

⁵⁷ James Salzman & J.B. Ruhl, *Currencies and the Commodification of Environmental Law*, 53 STAN. L. REV. 607, 627 (2000).

B. *Fungibility as a Basic Requirement of Successful Trading Programs*

Tradable permit programs, such as emissions trading, are being used more and more often by regulators as a means of complying with regulatory caps upon the total, or aggregate, level at which a common resource may be exploited by multiple users.⁵⁸ The resource subject to a tradable permit program could be the atmosphere, fisheries, groundwater, wetlands, or a myriad of other natural systems capable of being exploited by an unlimited number of users. The individual exploitative acts could be taking something out of the commons—fish, for instance—or putting something into the commons, such as acid-rain-forming sulfur dioxide or global-warming-inducing carbon dioxide.

In designing any environmental regulatory program, regulators must determine the total amount by which the exploitative activity must be curtailed so as to prevent overexploitation of the resource at issue. In so doing, however, regulators confront a critical choice: should they require that each individual user alter its behavior by reducing its impact upon the resource, or should they permit a given user to pay other exploiters to reduce their impact instead?

The choice between these two options depends upon whether the peculiar characteristics of the commons user (its “identity”) are relevant to the chosen means of addressing the overexploitation problem. If the peculiar characteristics of the user are unimportant, all that matters being the extent to which the exploitative activity is reduced, the regulator should prefer that the commons user have the option of purchasing reductions from third parties, as this will be the more cost-effective choice.⁵⁹

Controversies that have arisen in the past with respect to the appropriateness of allowing compliance through the use of tradable offsets have centered on whether the peculiar characteristics of regulated parties are important to which entities reduce their exploitative behavior. For instance, controversy over the Clean Air Act “bubble” program largely focused on whether the identity of the source should matter to which sources reduce their emissions so as to meet the ambient air quality standards established by the Act.⁶⁰ The EPA allowed

⁵⁸ *Id.* at 609-10.

⁵⁹ Scholars have demonstrated that the “fungibility” criterion just described is actually a multifaceted analysis, encompassing questions of the fungibility of space, type, and time. *See id.* at 622-30.

⁶⁰ *See* 40 C.F.R. §§ 50.1–.14 (2006) (establishing the ambient air quality standards).

sources to comply with state ambient air caps through the use of off-setting emissions reductions achieved at the same plant but at different emission points, or smokestacks. Critics argued that the bubble approach retarded a source's adoption of emissions-reducing technology, one of Congress's primary objectives.⁶¹ Similarly, critics of the EPA's policy permitting wetlands mitigation banking argue that wetlands acreage is not fungible and hence the obligation to preserve it cannot be traded among parties, since preserving wetlands in their original location also preserves all of the ecosystem services that go with the wetland—wildlife habitat, water purification, and flood control.⁶² The EPA's rule allowing states to opt into a nationwide program allowing electric utilities to trade mercury emissions credits touched off a still ongoing storm of criticism based on the argument that, because mercury is a relatively heavy pollutant, such a program will create areas of high mercury concentration, or "hotspots."⁶³

Whether the emissions trading concept can be transferred to court-ordered injunctive relief for climate change depends in large part upon whether the peculiar characteristics of the source of GHG emissions that has been sued should figure into how that same source complies with a court order requiring a reduction or elimination of its emissions. The nearly universal incorporation of emissions trading into compliance schemes for GHG reductions reflects a general consensus among policymakers that the peculiar characteristics of a source of GHG emissions should not matter—that GHG emissions reductions are truly fungible.⁶⁴ Indeed, there are few areas of environ-

⁶¹ See *Chevron U.S.A. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 840-42 (1984) (interpreting the statutory phrase "stationary source"); see also Jody Freeman, *The Story of Chevron: Environmental Law and Administrative Discretion*, in ENVIRONMENTAL LAW STORIES 171, 178-84 (Richard J. Lazarus & Oliver A. Houck eds., 2005) (tracing the history of the debate).

⁶² Salzman & Ruhl, *supra* note 57, at 611-12.

⁶³ See JAMES E. MCCARTHY, CONG. RESEARCH SERV., MERCURY EMISSIONS FROM ELECTRIC POWER PLANTS: AN ANALYSIS OF EPA'S CAP-AND-TRADE REGULATIONS 14-16 (2006), available at <http://www.ncseonline.org/NLE/CRSreports/06feb/RL32868.pdf> (discussing evidence of mercury hot spots and the EPA's response).

⁶⁴ Under the Kyoto Protocol, industrialized countries can meet their obligations to reduce GHGs through a series of different types of emissions trading programs. Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 17, Dec. 11, 1997, 37 I.L.M. 22 [hereinafter Kyoto Protocol] (authorizing emissions trading between signatory countries to meet their emissions reduction targets); *id.* art. 6 (authorizing joint implementation); *id.* art. 12 (authorizing the clean development mechanism). Similarly, emissions trading is a standard feature of the leading proposals for climate change legislation in the United States. See Climate Stewardship and Innovation Act of 2005, S. 1151 §§ 301-372, 109th Cong. (2005) (reintroducing a trad-

mental law in which policymakers are in greater agreement than the fungibility of GHG emissions.

Admittedly, there is room to challenge this conclusion. As with emissions trading of conventional pollutants under the Clean Air Act, the widespread adoption of energy efficiency technology could be seen as an important means of addressing climate change. By affording defendants the option to offset their emissions with credits, emissions trading arguably retards the pace of technological change otherwise prompted by a judicial abatement order. Similarly, the conclusion that GHG emissions are fungible downplays individual responsibility for emissions, a factor that might be important to common law courts steeped in liability questions that frequently turn on issues of moral responsibility and corrective justice.⁶⁵ Nevertheless, due to its cost advantages to the United States,⁶⁶ the weight of opinion seems to favor emissions trading with respect to GHG emissions.⁶⁷

C. Causation

While there may be many reasons to provide defendants with the flexibility to comply with an emissions abatement order through the use of third-party emissions offsets, the issue is moot if liability—and hence injunctive relief—is unlikely to be imposed by a court. Although, as noted previously, this Article does not attempt to analyze

able allowances bill); Climate Stewardship Act of 2003, S. 139, 108th Cong §§ 311–372 (2003) (making the original call for a tradable allowance in GHGs). As discussed previously, the proposed regional program for controlling GHG emissions from electric utilities in the northeast includes an emissions trading program. *See* RGGI, *supra* note 11.

⁶⁵ *See generally* Jules Coleman, *Corrective Justice and Wrongful Gain*, 11 J. LEGAL STUD. 421 (1982) (proposing corrective justice as a foundation of tort law); Jules L. Coleman, *Moral Theories of Torts: Their Scope and Limits* (pts. 1 & 2), 1 LAW & PHIL. 371 (1982), 2 LAW & PHIL. 5 (1983) (arguing that no one theory of morality explains all of tort law and exploring different theories rooting it in corrective justice principles); Ernest Weinrib, *The Special Morality of Tort Law*, 34 MCGILL L.J. 403 (1989) (rejecting instrumental and economic theories of tort law in favor of a morality-based corrective justice theory).

⁶⁶ *See* LARRY PARKER, CONG. RESEARCH SERV., GLOBAL CLIMATE CHANGE: LOWERING COST ESTIMATES THROUGH EMISSIONS TRADING—SOME DYNAMICS AND PITFALLS 1 (1999), available at <http://www.ncseonline.org/nle/crsreports/climate/clim-21.cfm> (“[Most analyses] strongly suggest that emission trading would significantly reduce the projected costs of U.S. compliance with the Kyoto Protocol.”).

⁶⁷ *See* Pew Ctr. on Global Climate Change, Chart of Climate Legislation, <http://www.pewclimate.org/docUploads/Cap%2Dand%2Dtrade%20bills%20110th%5FFeb5%2Epdf> (last visited May 1, 2007) (listing five major GHG cap-and-trade bills proposed by the Senate in the 110th Congress).

all elements of a plaintiff's public nuisance claim for contribution to climate change, it will discuss the implications of the fungibility of GHG emissions for the plaintiff's burden of establishing causation.

A commonly cited barrier to public nuisance global warming lawsuits is the difficulty of establishing legal causation—proving that a particular source of GHG emissions should be held legally responsible for contributing to climate change.⁶⁸ Among the problems noted is the difficulty of linking anthropogenic GHG emissions to any particular damaging weather event, such as a flood or a hurricane, and the further problem of linking any defendant's emissions to a particular weather event.⁶⁹ The complexity of the problem is somewhat explained by the fact that the causation issue here is actually multi-tiered—the plaintiff must first establish that anthropogenic GHG emissions (as opposed to natural climate variability) are responsible for some amount of climate-related damages, and then that the emissions of a particular defendant, which may be infinitesimal in relation to the sum total of anthropogenic emissions, legally “caused” some fraction of this ongoing harm. Furthermore, although formally distinct from the issue of causation, there is the related question of the amount by which an individual defendant should be required to abate its emissions, assuming it is found otherwise liable for contributing to the public nuisance of climate change.

As in many other areas of life, the answer to the causation conundrum depends upon the question asked. This is particularly true with respect to the nuisance cause of action, since, to a significant extent, a plaintiff's choice to pursue a public nuisance action for injunctive relief, as opposed to a private nuisance action for damages, will significantly mitigate the potential onerousness of the causation requirement. This is because a public nuisance is, by definition, a harm to a community as opposed to a harm to any specific individuals. It is also

⁶⁸ See Harper, *supra* note 9, at 684 (“The central problems are the diffuse nature of the sources of anthropogenic climate change, and the lack of clear connection between specific harms and specific sources. These problems lead to difficulty in proving that a particular defendant's actions were more likely than not the cause of the harm.” (footnote omitted)). During the fall of 2006, the many intricacies of the causation issue raised by the public nuisance global warming lawsuits were extensively debated by environmental law professors at U.S. law schools in an online forum. See Postings to envlawprofessors@lists.uoregon.edu, *California v. Auto Makers*, (on file with author).

⁶⁹ For an impressive effort to make precisely such links, see Myles R. Allen & Richard Lord, *The Blame Game*, 432 NATURE 551 (2004); Myles Allen, *Liability for Climate Change: Will It Ever Be Possible To Sue Anyone for Damaging the Climate?*, 421 NATURE 891 (2003).

because the typical relief in a public nuisance lawsuit is prospective abatement rather than damages. Both of these characteristics have been held by courts to alleviate the necessity of establishing a specific tie between a particular defendant's discharges and environmental harm that is consistent with having been caused by the defendant's discharges. In addition to explaining what public nuisance should require in terms of causation, I make the argument here that the logic behind the use of emissions offset reduction credits as a remedy supports the imposition of liability even in the absence of a particularized link between any one defendant's GHG emissions and the plaintiff's climate damages.

Elemental to any tort case is the requirement that the plaintiff establish that the defendant's conduct is a "but-for" cause of the alleged harm. In the case of climate change, this might be broken down into two inquiries: a threshold inquiry as to whether anthropogenic GHG emissions impose a risk of climate change, and a second inquiry into whether any one defendant's emissions, such as a single utility sued by the northeastern states, or a single car manufacturer sued by California, is a "but-for" cause of climate changes.⁷⁰

Due to advances in the scientific understanding of climate change, a plaintiff should not have trouble meeting the threshold requirement.⁷¹ A scientific consensus now exists that it is likely, or even

⁷⁰ Especially in the area of toxic torts, courts have referred to these two inquiries as "general" and "specific" causation. See M. STUART MADDEN & GERALD W. BOSTON, *LAW OF ENVIRONMENTAL AND TOXIC TORTS* 479 (3d ed. 2005) (discussing the "dual causation question"); see also *Sterling v. Velsicol Chem. Corp.*, 855 F.2d 1188, 1200 (6th Cir. 1988) (distinguishing between general and specific causation in the mass tort class action context). For example, a plaintiff alleging that her kidney cancer was caused by her exposure to the defendant's carbon tetrachloride must establish that carbon tetrachloride is capable of causing kidney cancer under conditions similar to those characterizing the plaintiff's exposure. See *id.* at 1203-04 (finding that the plaintiffs had insufficient medical proof that the injuries were caused by ingesting contaminated water). Specific causation, on the other hand, requires that the plaintiff meet a required standard of proof that her injuries were actually caused by the particular agent alleged. In the toxic tort context, courts typically require the plaintiff establish that it is "more probable than not" that the agent alleged was actually responsible for her injuries. See, e.g., *Earl v. Cryovac*, 772 P.2d 725, 727 (Idaho Ct. App. 1989) ("The trier of fact must be persuaded that the plaintiff's claim of causation 'is more probably true than not true.'" (quoting IDAHO CIVIL JURY INSTRUCTIONS § 1.20.1 (2003), available at http://www.isc.idaho.gov/rules/cv_juryinst.pdf)).

⁷¹ See Richard S.J. Tol & Roda Verheyen, *State Responsibility and Compensation for Climate Change Damages—A Legal and Economic Assessment*, 32 *ENERGY POL'Y* 1109, 1112 (2004) (arguing that scientific facts with respect to climate change that have been demonstrated "will satisfy the requirements for general causation").

very likely,⁷² that anthropogenic increases in GHGs are causing certain identifiable climatic changes. Indeed, a consensus now exists that it is likely that most of the observed warming in global average temperatures over the past fifty years is attributable to increases in anthropogenic emissions of GHGs.⁷³ This rise is approximately 0.6°C (1.1°F) in global average surface temperatures,⁷⁴ while the mean ocean temperature has risen by 0.05°C (0.09°F). Over the twentieth century, snow cover and Arctic ice have decreased by about ten to 15%, respectively, since the late 1960s (when data first became available for this measurement).⁷⁵ Moreover, scientists predict that carbon dioxide emissions from burning fossil fuels will be the dominant influence in trends of the atmospheric carbon dioxide concentration.⁷⁶ For instance, assuming a constant increase in such emissions (similar to the record of the past twenty years), global average temperature would rise by 0.75°C by 2050.⁷⁷ Thus, there appears to be ample evidence accumulating that GHG emissions are not only capable of causing, but indeed are causing and will continue to cause climatic changes.

However, what a given public nuisance plaintiff will not be able to establish, at least not with any high degree of certainty, is that any particular weather event, such as a flood or a heat wave, is attributable to anthropogenic GHG emissions.⁷⁸ With respect to a public nuisance plaintiff requesting prospective injunctive relief, however, such a link is arguably not necessary. In bringing suit to abate a public nuisance, a public entity is seeking to stop or mitigate an ongoing activity that causes harm. While anthropogenic GHG emissions are obviously not

⁷² These standards of confidence come from the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), in which “likely” corresponds to a 66%-90% chance and “very likely” corresponds to a 90%-99% chance of occurrence. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC], WORKING GROUP I, CLIMATE CHANGE 2001: THE SCIENTIFIC BASIS 2 n.7 (J.T. Houghton et al. eds., 2001) [hereinafter IPCC, SCIENTIFIC BASIS].

⁷³ *Id.* at 10.

⁷⁴ See COMM. ON THE SCI. OF CLIMATE CHANGE, NAT’L RESEARCH COUNCIL, CLIMATE CHANGE SCIENCE 16 (2001), available at <http://www.gcric.org/OnLnDoc/pdf/ClimateChangeScience.pdf> [hereinafter NRC].

⁷⁵ See *id.*

⁷⁶ IPCC, SCIENTIFIC BASIS, *supra* note 72, at 7.

⁷⁷ NRC, *supra* note 74, at 18.

⁷⁸ See Allen & Lord, *supra* note 69, at 552 (“[I]t will almost always be impossible to say that ‘but for’ GHG emissions this event would never have occurred.”). The limits of attribution are also explored in this Symposium by Myles Allen et al., *Scientific Challenges in the Attribution of Harm to Human Influence on Climate*, 155 U. PA. L. REV. 1353 (2007).

responsible for all harmful weather events or even for any one particular weather event, they are responsible for increasing the risk or likelihood that such events will occur in the future. Furthermore, anthropogenic GHG emissions are responsible for measurable changes in average global temperature and sea levels, changes that themselves cause harm in addition to elevating the risk of harmful weather events. Linking anthropogenic GHGs to any particular weather event is not necessary where the plaintiff is not seeking past damages but is seeking instead to stop a harmful activity.

The plaintiff will, however, need to establish that the defendant is a cause of the public nuisance. It is likely that a court would resort to the “substantial factor” test rather than the “but-for” test, given that anthropogenic climate change is caused by more than one tortfeasor.⁷⁹ According to this test, the conduct of all defendants that is a substantial factor in bringing about the harm is a cause-in-fact of the harm.⁸⁰ On its face, “substantial factor” would seem to require that a defendant be responsible for a hefty amount of the sum total cause. Yet such a reading would place actions that degrade a commons beyond the reach of the common law, except where they are sufficiently large that they can be said to largely or measurably “cause” the degradation of the commons. Any “tragedy of the commons” would thus be beyond the competence of a court to address since, by definition, the tragedy is caused by the aggregate effect of the actions of many small users.⁸¹ This would also insulate from liability all small contributors, regardless of a given entity’s knowledge that its small contribution, when combined with the small contributions of others, caused the degradation of the commons resource. It would, furthermore, prevent the courts from addressing climate change through tort liability, as it is impossible to think of a single source anywhere in the world whose emissions are sufficiently large to be considered, in and of themselves, a “substantial cause” of anthropogenic climate change.⁸²

⁷⁹ DOBBS, *supra* note 30, § 171 at 414-17.

⁸⁰ See RESTATEMENT (SECOND) OF TORTS § 431 (1965) (defining legal cause).

⁸¹ See Engel & Saleska, *supra* note 3, at 209 (noting that the tragedy of the commons framework is based upon the neoclassical assumption that “individual market participants have no market power; they are merely ‘price-takers,’” and thus cannot themselves alter the total usage of the commons).

⁸² Cf. *Massachusetts v. EPA*, 127 S. Ct. 1438, 1457 (2007) (rejecting the EPA’s assertion that, because the GHG emissions the EPA failed to regulate cannot be said to “cause” global warming in and of themselves, the plaintiffs were unable to establish the causation prong of standing because it “rests on the erroneous assumption that a small incremental step, because it is incremental, can never be attacked in a federal judicial

Perhaps to avoid immunizing the small contributor to a commons degradation from the reach of tort liability, at least one commentator and several cases provide a broad reading of “substantial” in the context of liability for pollution harm. Dobbs, author of a leading torts treatise, describes as “substantial” an individual source’s small contribution to much larger pollution problems. He states that “[w]hen no one polluter independently releases enough hazardous material into the environment to cause harm, but the entire group of polluters, each acting independently, collectively release an amount sufficient to cause harm, courts may treat each as causal.”⁸³ In a healthy line of mostly older cases, courts have ordered pollution abatement by parties whose contribution to a public nuisance can be accurately described as infinitesimal.⁸⁴ In these cases, courts have upheld liability for a pub-

forum”).

⁸³ DOBBS, *supra* note 30, § 171, at 415 n.6. Dobbs suggests four different grounds upon which such a conclusion may be reached:

- (a) the substantial factor approach, (b) the single indivisible injury rule . . . ;
- (c) but-for causation, which will yield a finding of causation if the entire group of polluters collectively contributes exactly the number of units of pollution to cause harm . . . ; and (d) the argument that the group of singly insufficient causes is a variation of the duplicative cause or two fire cases where the total pollution is more than enough to cause harm

Id. (citations omitted).

⁸⁴ This is especially apparent in older public nuisance environmental cases. For instance, in *California v. Gold Run Ditch & Mining Co.*, the California Supreme Court held that the defendant mining operation was liable for injunctive relief. 4 P. 1152, 1160 (Cal. 1884). This was despite the trial judge’s remarks that

I am unable to say that defendant’s mine alone, without reference to the *debris* from other mines, materially contributes to the evils mentioned; or, in other words, if there were no mining operations save those of the defendant, I am not prepared to say that it would materially injure the valley lands or the navigation of the river. It is the aggregate of *debris* from all the mines which produces the injuries mentioned in these findings.

Id. at 1156 (quotation marks omitted) (quoting the trial court). Similarly, in *Woodyear v. Schaefer*, the Maryland Court of Appeals enjoined the defendant’s butchery operations for contributing to a public nuisance, even though the defendant contributed only a small fraction of beef, blood, and other butchery waste products to the stream. 57 Md. 1, 10-13 (1881). The Court of Appeals stated that

[t]he extent to which the appellee has contributed to the nuisance, may be slight and scarcely appreciable. Standing alone, it might well be that it would only, very slightly, if at all, prove a source of annoyance But it is when all are united together, and contribute to a common result, that they become important as factors, in producing the mischief complained of. And it may only be after from year to year, the number of contributors to the injury has greatly increased, that sufficient disturbance of the appellant’s rights has been caused to justify a complaint.

lic nuisance even where the defendant was responsible for only a very small portion of the filth or pollution creating the nuisance and its actions, standing alone, might be considered harmless.

The key here is that each of these cases involved only prospective injunctive relief, in the nature of an order requiring that the defendants abate their contribution to a commons public nuisance. None of the defendants was held liable for past damages in any of these cases. This limitation avoids the possible due process issues that might otherwise arise if such minor contributors were held liable for potentially enormous past damages. Under the usual rule of joint and several liability (holding contributors jointly and severally liable for contributing to a single, indivisible harm), liability for damages could result in crushing and unrealistic liability for very small contributors to a larger environmental problem.

It follows from these cases, and also from the logic of the appropriateness of the emissions offset compliance option, that no greater link between the defendant's emissions and actual climatic changes need be established than that the defendant is emitting GHGs. By definition, such gases contribute to anthropogenic climate change. Similarly, by definition, each ton of GHG emitted by a defendant exacerbates the risks of global warming, though it is impossible to estimate by exactly how much. As established previously, the particular characteristics of the source of GHGs do not alter this cause-and-effect relationship. Just as the location and other identifying features of a source are irrelevant to the abatement of global warming—thereby justifying the emissions offset compliance option—these same features

One drop of poison in a person's cup may have no injurious effect. But when a dozen, or twenty, or fifty, each put in a drop, fatal results may follow. It would not do to say that neither was to be held responsible.

Id. at 10. Further, in *Lockwood Co. v. Lawrence*, the Supreme Judicial Court of Maine held that

[i]n the case at bar, it may be that the act of any one respondent alone might not be sufficient cause for any well grounded action on the part of the complainants; but when the individual acts . . . produce appreciable and serious injury, it is a single result, not traceable perhaps to any particular one of these respondents, but a result for which they may be liable in equity as contributing to the common nuisance, as we have before stated.

77 Me. 297, 309-310 (1885). In a more recent Rhode Island trial court opinion, *State ex rel. Lynch v. Lead Industries Ass'n*, the court uses the language of "substantial cause," and upholds liability based on each defendant's small contribution to the state's lead paint problem. *State ex rel. Lynch v. Lead Indus. Ass'n (Lead Indus. Ass'n II)*, No. Civ.A. 99-5226, 2005 WL 1331196 at *2-*3 (R.I. Super. Ct. June 3, 2005). For a discussion of these cases, see Pawa & Krass, *supra* note 9, at 450-52.

should be irrelevant to the defendant's liability for contributing to a climate change public nuisance. All that should matter is that the source contributes to global concentrations of GHGs.

Courts adjudicating claims arising out of the public health hazards resulting from childhood exposure to lead-based paint have similarly dropped any requirement that the plaintiff link specific damages to a particular defendant. For instance, to hold a previous manufacturer and seller of lead-based paint liable, on a public nuisance theory, for reimbursing the City of Milwaukee for the costs of abating lead paint in a private home, a Wisconsin court of appeals upheld the City's contention that it was not required to establish that the particular defendant manufacturer's paint was actually used in the home.⁸⁵ It was sufficient that the City prove that the manufacturer sold and promoted lead-based paint products to the community in which the homes were located and that such a "*product* caused a serious public health problem in that community."⁸⁶ Similarly, in a public nuisance case brought by the State of Rhode Island against several lead-based paint companies for manufacturing and selling paint used in homes throughout the state, the state trial court relieved the State of the requirement of identifying the presence of any particular paint manufacturer's product in a particular property.⁸⁷ Again, it was sufficient that the State demonstrate that each defendant was a substantial cause of the public nuisance, defined as "the collective presence of lead pigment in buildings throughout the state of Rhode Island."⁸⁸

Thus, the nature of a public nuisance claim and the prospective nature of the relief requested support eliminating the need to match up the harm with a particular defendant source contributing to the

⁸⁵ See *City of Milwaukee v. NL Indus. Inc.*, 691 N.W.2d 888, 893 (Wis. Ct. App. 2004).

⁸⁶ *Id.* (emphasis added).

⁸⁷ See *Lead Indus. Ass'n II*, 2005 WL 1331196, at *2; see also *State ex rel. Lynch v. Lead Indus. Ass'n*, No. C.A. 99-5226, 2004 WL 2813747, at *3 (R.I. Super. Ct. Nov. 9, 2004) (granting plaintiff's motion to suppress evidence and testimony with respect to individual Rhode Island properties).

⁸⁸ See *Lead Indus. Ass'n II*, 2005 WL 1331196, at *2. But see *Chicago v. American Cyanamid Co.*, 823 N.E.2d 126, 140 (Ill. App. Ct. 2005) (reaching an opposite result in a public nuisance action by holding that the plaintiff failed to demonstrate causation); see also Donald G. Gifford, *The Death of Causation: Mass Products Torts' Incomplete Incorporation of Social Welfare Principles*, 41 WAKE FOREST L. REV. 943, 997-99 (2006) (arguing that "[p]atris [p]atris actions brought by states and municipalities against manufacturers of cigarettes, handguns and lead pigment have been the most important challenge to the individual causation requirement during the past decade" (footnotes omitted)).

public nuisance. This downplaying of the “identity” of the defendant is reflected in the appropriateness of the emissions offset compliance option in the global warming context.

Eliminating the relevance of the defendant’s identity to its liability for the abatement of its future emissions will result in prospective liability that is both fairly easy to establish (i.e., it will be enough to show that the defendant will continue to emit GHGs) and very broad. Some might argue the resulting liability is too broad—extending to any source of GHGs whatsoever, regardless of amount emitted or by whom it was emitted. Ordinary homeowners are thus potential defendants in a global warming public nuisance lawsuit under this analysis. While true, this need not lead to widespread hysteria. It is highly unlikely that state attorneys general will be suing private homeowners for effectuating climate change.⁸⁹ If they did, however, the option of compliance through the use of emissions offset credits would be even more critical, and would substantially alleviate the burden of such liability, turning public nuisance lawsuits into a type of carbon tax.⁹⁰

D. “The Reasonableness” Determination

Finally, the option of compliance through the use of third-party emissions offset credits should add to the number of circumstances where the defendant GHG emitter’s conduct is considered “unreasonable” and hence to the number of situations where it may be held liable for causing a public nuisance. Although neither uniformly followed by courts⁹¹ nor met with the universal approval of legal commentators,⁹² standard doctrine holds that to be held liable for a public

⁸⁹ Private parties can sue for a public nuisance if they show “special damages.” See RESTATEMENT (SECOND) OF TORTS § 821C cmt. c (1979). While it may be difficult to demonstrate such damages, one can imagine situations where it may be possible, such as a large coastal landowner that is peculiarly susceptible to sea level rise.

⁹⁰ See Michael P. Vandenbergh & Anne C. Steinemann, *The Carbon-Neutral Individual*, 82 N.Y.U. L. REV. (forthcoming 2007) (suggesting the use of carbon offsets to help individuals achieve the social norm of carbon neutrality).

⁹¹ See *Georgia v. Tenn. Copper Co.*, 206 U.S. 230, 237 (1907) (“This court has not quite the same freedom to balance the harm that will be done by an injunction [when a State is a party], that it would have in deciding between two subjects of a single political power.”).

⁹² See Robert Abrams & Val Washington, *The Misunderstood Law of Public Nuisance: A Comparison with Private Nuisance Twenty Years After Boomer*, 54 ALB. L. REV. 359, 377-79 (1990) (arguing that the balancing of the utilities has no place in public nuisance where the harm alleged is a substantial violation of a public right and the case is brought by a sovereign that has a special responsibility to protect such rights).

nuisance, a defendant's conduct must be "unreasonable." Unreasonableness is defined, at least in part, through a balancing-of-the-utilities test.⁹³ In other words, the defendant's conduct is considered unreasonable if, among other things, the gravity of the harm to the public outweighs the utility of the defendant's conduct.

The fungibility of GHG emissions potentially tilts the unreasonableness determination in favor of the plaintiff by rendering it cheaper and easier for the defendant to comply with an abatement order, and hence reducing the likelihood that a finding of liability would require the sacrifice of the defendant's business and its associated utility, either to the defendant or to society as a whole.

The fungibility of GHG emissions is a critical component of a successful scheme to use public nuisance to compel reductions in GHG emissions. Fungibility functions on two levels in this scheme: it both supports liability by further justifying a relaxed standard of causation (further than already justified by the "public" nature of public nuisance) and it supports a cost-effective compliance mechanism to meet the burdens of this expanded liability. These two components are mutually reinforcing, as seen by the impact of the option of an emissions credit compliance scheme upon the likelihood that a defendant emitter's conduct will be considered "unreasonable."

III. COULD TORT ACTIONS JUMPSTART AN EMISSIONS TRADING MARKET?

Should liability be found and the precedent from such lawsuits prove sufficiently intimidating to defendants, this Article makes the further claim that the availability of the emissions offset compliance option in public nuisance climate change lawsuits could jumpstart a market in GHG emissions offsets. The claim is that a single or several cases in which defendants choose to comply with an abatement order through the purchase of emissions offsets could trigger a demand for offsets. At least some sources of GHGs might be expected to scramble to create such offsets by adopting permanent measures to reduce their GHG emissions. In reducing their emissions, these sources generate revenue through the sale of emissions offsets and reduce the likelihood that they themselves will become the target of litigation. While

⁹³ See RESTATEMENT (SECOND) OF TORTS §§ 821B, 826 (setting out the parameters of the reasonableness determination); *see, e.g.*, *County of Santa Clara v. Atl. Richfield*, 40 Cal. Rptr. 3d 313, 325 (Cal. Ct. App. 2006) (providing an example of the application of this test).

there are obviously many “but ifs” in this scenario, it is at least plausible that, were defendants offered the option of complying with an abatement order using third-party-generated GHG emissions offset credits, a private emissions trading market of potentially national scope could be triggered.

Perhaps the largest hurdle to actually triggering such a market is the absence of a readily identifiable standard that a court may use to determine the appropriate degree by which an individual defendant’s GHG emissions must be abated, and hence the number of emissions offset credits a source must hold. Despite the attractiveness of “carbon neutrality,” a court is unlikely to go so far as to require the abatement of 100% of a source’s GHG emissions. Such a requirement is likely to constitute crippling liability that might result in the termination of many socially important industries and companies, even assuming the availability of the cheaper option of compliance with emissions offsets. Additionally, there is the potential unfairness of such a result, as it would be distributed according to which particular industries were unlucky enough to be sued in public nuisance by public authorities.

Nevertheless, the basis upon which a court might require a defendant source to reduce its GHG emissions by any percentage other than 100% is not obviously clear. How to allocate the emissions reductions that are needed to avoid even the most serious harms from climate change is perhaps the most important economic, social, environmental, and political issue of our time. Yet it is a question that has eluded comprehensive international agreement so far,⁹⁴ though not for want of proposals.⁹⁵ It is difficult to see how a single common law court might answer such a difficult question with respect to a single defendant in the absence of guidance from the political branches. In the public nuisance case filed by mostly northeastern states against midwestern and southern utilities, the plaintiffs have so far fudged on the issue, declining to be more specific than to request a court to abate defendants’ emissions “by a specified percentage each year for

⁹⁴ For example, the Kyoto Protocol has failed to garner the support of all of the world’s industrialized nations, failing to attract the United States as a party. Furthermore, Kyoto’s emissions reduction allocation applies only to industrialized nations and only through the target compliance period of 2008–2012.

⁹⁵ Many commentators argue that the earth’s natural GHG assimilative capacity should be distributed on a per capita basis. See Paul Baer et al., *Equity and Greenhouse Gas Responsibility*, 289 *SCIENCE* 2287 (2000); Michael Grubb, *Seeking Fair Weather: Ethics and the International Debate on Climate Change*, 71 *INT’L AFF.* 463, 485 (1995).

at least a decade.”⁹⁶ In the absence of a more particularized request and justification, it is perhaps not wholly surprising that a federal district court dismissed the states’ complaint as presenting a nonjusticiable political question.⁹⁷

An easy solution to this problem would be for the legislature of the suing state to enact legislation specifying the percentage of abatement required of defendants in public nuisance GHG emissions lawsuits. Several states now regulate the GHG emissions of particular industries, such as electric utilities.⁹⁸ In legislating an abatement percentage applicable in public nuisance cases, states would simply be applying their legislative rule to tort lawsuits arising under state law. Conversely, those states lacking GHG emissions reductions regulations would simply be adopting such regulations for the first time in the form of an abatement rule. Precedent for state legislative control of common law remedies is found in the many state “tort reform” statutes capping or otherwise restricting the amount of punitive damages in personal injury lawsuits.⁹⁹

Nevertheless, while helpful, it is not clear that a legislated standard of abatement is necessary to a judicial abatement remedy. Traditionally, the function of equity is to reconcile competing claims, reaching an adjustment that takes into account the interests of all parties.¹⁰⁰ This gives such a court the flexibility to fashion an abatement

⁹⁶ Complaint, *supra* note 1, at 49.

⁹⁷ *Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265, 274 (2005). The ruling was clearly motivated by the court’s concern that, given that the problem of anthropogenic climate change is attributable to GHG emissions across the globe, it had no basis upon which to impose an abatement requirement in the absence of a determination by a relevant political body. The court noted that the plaintiff’s requested relief, “would, at a minimum, require this Court to: (1) determine the appropriate level at which to cap the carbon dioxide emissions of these Defendants; (2) determine the appropriate percentage reduction to impose upon Defendants[,] . . . all without an “initial policy determination” having been made by the elected branches.” *Id.* at 272-73.

⁹⁸ See *supra* note 32 and accompanying text.

⁹⁹ See, e.g., OHIO REV. CODE ANN. § 2315.21(D)(2)(b) (LexisNexis 2005) (capping awards of punitive damages at \$350,000 and prohibiting a state court from entering a judgment for punitive damages in excess of the lesser of two times the amount of compensatory damages or 10% of the employer’s net worth).

¹⁰⁰ See e.g., *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312 (1982) (“The essence of equity jurisdiction has been the power of the Chancellor to do equity and to mould each decree to the necessities of the particular case. Flexibility rather than rigidity has distinguished it.” (quoting *Hecht Co. v. Bowles*, 321 U.S. 321, 329 (1944))); *Spur Indus., Inc. v. Del E. Webb Dev. Co.*, 494 P.2d 700, 707 (Ariz. 1972) (“The law of nuisance affords no rigid rule to be applied in all instances. It is elastic. It undertakes to require only that which is fair and reasonable under all the circumstances.” (quoting

remedy as it sees fit regardless of the absence of a clear standard for how much abatement should be achieved.

Arguably, a court already has positive law standards upon which it can draw in fashioning its own common law abatement remedy. For instance, a court might look at the degree of abatement some of the plaintiff states are requiring of their own industries. This would be consistent with the role of public nuisance as a vehicle by which states can level the competitive playing field between in-state and out-of-state sources.¹⁰¹ Thus in determining the proper amount of abatement by the out-of-state sources being sued, a court might look to the degree of GHG emissions reductions New York is requiring of its own utilities and the limits on carbon dioxide emissions California is requiring of in-state car manufacturers. In the alternative, a court could do what Congress often resorts to in defining the best available technology—look at some segment of the industry leaders.¹⁰²

In sum, given various conditions, providing the option of complying with court-ordered abatement through the purchase of third-party emissions offsets could trigger a GHG emissions trading market, even in the absence of federal authorizing legislation. The development of such a market would be helped by a legislated state standard specifying the required degree of abatement.

IV. IMPLEMENTATION HURDLES

A. *Demonstrating Actual Emissions Reductions*

Courts may embrace emissions offsets as an innovative option for enhancing the efficiency of common law compliance. Alternatively, courts may resist the idea for any number of reasons, including a judge's practical concern over the lack of an easy method of verifying the adequacy of the defendant's evidence of third-party offsets.

Stevens v. Rockport Granite Co., 104 N.E. 371, 373 (Mass. 1914)). Boomer v. Atl. Cement Co., 257 N.E.2d 870, 873 (N.Y. 1970) (“[T]o follow the rule [that an injunction must issue even when enjoinder would be more costly than the nuisance] literally in these cases would be to close the plant down at once. This court is fully agreed to avoid that immediately drastic remedy . . .”).

¹⁰¹ See *supra* text accompanying notes 31-37.

¹⁰² For example, the Clean Air Act uses a “maximum achievable control technology” standard for new sources that is determined by “the average emission limitation achieved by the best performing 12 percent of existing sources.” Clean Air Act § 112(d)(3)(A), 42 U.S.C. § 7412(d)(3)(A) (2000); see also 40 C.F.R. § 63.51 (2005) (defining the maximum achievable control technology).

Courts also may be concerned that they will not be able to distinguish “real” offsets from “paper” offsets—offsets demonstrated on paper, which are not reflected in actual emissions reductions. This section analogizes the difficulties that a common law court may face in verifying emissions offsets to the difficulties confronted by parties to the Kyoto Protocol in determining whether the funders of projects in developing countries designed to reduce GHG emissions should receive emissions credits under the Protocol’s Clean Development Mechanism (CDM). This section will also propose a solution: courts should take advantage of the GHG emissions trading schemes already established by other countries, as well as by private entities by recognizing as valid offsets the GHG emissions allowances traded under such regimes. Currently, there exists only one GHG emissions trading scheme established by a foreign government: the European Union’s emissions trading scheme. However, there are now several private GHG exchanges which may be candidate sources of offset credits.

B. *The Challenges Posed by a Judicially Created
Open Market Trading Program*

By necessity, any emissions trading authorized by a public nuisance judicial remedy would be an “open market” trading program, as opposed to a cap-and-trade program. Under an open market program, sources reduce their emissions below regulatorily required levels and trade such reductions, expressed as “credits,” to sources whose emissions exceed regulatory levels. Under the regulatory regime currently in effect, the source purchasing the credits may emit higher-than-regulated levels of emissions so long as it holds credits equal to those excess emissions. By contrast, under a cap-and-trade program, the total amount of pollution that can be emitted by all sources is capped and each source is distributed a share of that capped amount (in the form of allowances), which is subject to trading rules. Arguably the most important element in both trading systems is the integrity of the cap on allowable pollution, as only allowable pollution can be traded and still meet regulatory goals. Under a cap-and-trade system, the cap is established up front and as a result it is very clear what emissions can be traded—only those represented by an allowance. Under an open market system, the cap is the sum total of all of the regulatory standards applicable to each individual source, or each source’s individual “cap.” This cap upon total emissions is far less easily determined and is subject to stretching and distortion as a result of each source’s ability to create tradable credits through individual source

reductions.¹⁰³ Only if each credit created truly represents emissions reductions that are in addition to those otherwise required by the regulatory program, is the integrity of the cap maintained.

The challenges facing a court in verifying that any GHG credit offered by a source to comply with a nuisance abatement order thus mirror those faced by the parties to the Kyoto Protocol when determining the conditions under which sources may obtain GHG emissions credits under the CDM, an international open market trading program. Under the CDM, the industrialized nation parties to the Protocol may obtain credit toward their Protocol emissions reduction target by funding projects that reduce emissions in developing countries.¹⁰⁴ Because such countries are not subject to the Protocol's emissions reduction target (1990 levels by 2008–2012), such trading is, by definition, an “open market” system. Designers of the CDM must ensure that such projects achieve reductions that are truly “additional” to those that would otherwise occur in the normal course of events;¹⁰⁵ otherwise, the reductions achieved will not offset the emissions of sources within nations subject to the Kyoto Protocol and their use will not be neutral as to climate change, but will accentuate it.¹⁰⁶

¹⁰³ For further information on the two types of trading systems and examples of their implementation, see Richard E. Ayres, *Expanding the Use of Environmental Trading Programs into New Areas of Environmental Regulation*, 18 PACE ENVTL. L. REV. 87, 94 (2000).

¹⁰⁴ Kyoto Protocol, *supra* note 64, art. 12, 37 I.L.M. at 38.

¹⁰⁵ *Id.*

¹⁰⁶ For example, suppose a corporation in Germany proposes a CDM project in a developing nation that will convert a large boiler from coal to natural gas. To permit the corporation to obtain credits for the conversion toward the corporation's share of Germany's emissions reduction obligation under the Kyoto Protocol, the corporation would have to demonstrate that the conversion would not have happened in the absence of its investment. See STEPHEN MEYERS, ERNEST ORLANDO LAWRENCE BERKELEY NAT'L LAB., ADDITIONALITY OF EMISSIONS REDUCTIONS FROM CLEAN DEVELOPMENT MECHANISM PROJECTS: ISSUES AND OPTIONS FOR PROJECT-LEVEL ASSESSMENT 9 (1999), available at <http://ies.lbl.gov/iespubs/43704.pdf>. The governing body of the CDM has established guidelines for determining when the emissions reductions achieved by a project are additional. Only reductions meeting these guidelines can generate credits for its funders that should be considered to be part of the nation's baseline emissions. In essence, the project proponent must demonstrate that due to various factors such as the existence of credible and realistic alternatives to the project and the financial unattractiveness of the project, the project would not likely be pursued in the host country in the absence of the incentive provided by CDM emissions credits. See Sixteenth Meeting of the Executive Board, Bonn, F.R.G., Oct. 21–22, 2004, *Tool for the Demonstration and Assessment of Additionality* (Annex 1), available at <http://cdm.unfccc.int/EB/016/eb16repan1.pdf>; see also MISSION INTERMINISTÉRIELLE DE L'EFFET DE SERRE ET AL., CLIMATE CHANGE: GUIDE TO THE KYOTO PROTOCOL PROJECT MECHANISMS 15–18 (2d ed. 2004) (Fr.).

The example provided by CDM demonstrates the potential difficulties facing a court in determining whether GHG emissions reductions procured by a defendant subject to a court abatement order will truly offset its emissions. Assuming the court places upon the defendant the burden of demonstrating that the emissions are additional—or surplus—to any reductions that would occur in the absence of the contract, the court must still evaluate whether the defendant has met this burden with evidence demonstrating that, in the absence of the funding provided by the credit sale, the project generating the emissions reductions would be unlikely to occur.

C. “Preapproved” Sources of GHG Emissions Credits

This section proposes that defendants and courts take advantage of the existence of GHG emissions credit exchange programs already in existence to alleviate the evidentiary burdens discussed in the previous section. Thus, for purposes of satisfying a defendant’s court-ordered abatement obligation, a court might accept as valid offsets emissions credits obtained from a government-sanctioned or a private GHG emissions exchange. This would save the court from the necessity of screening each credit offered by the defendant to ensure it met the criteria for additionality discussed in the prior section.

The court will still need to satisfy itself that the exchange program has systems in place that ensure that all credits transferred on the exchange meet criteria needed to guarantee that the credit is surplus, additional, and permanent. Nevertheless, a court is likely to be much more comfortable with performing such a program-wide review than with determining whether the same criteria are met with respect to each credit generated through an individual emissions-credit-generating project. By taking advantage of the system of rules and monitoring put in place by existing emissions exchange programs, a court can substantially reduce the uncertainty involved in allowing defendants to use emissions offsets to comply with court-ordered abatement. This should, in turn, make courts more willing to recognize offsets as a compliance option.

1. EU GHG Allowances

At present, the only government-supervised GHG emissions trading regime is that established by the EU. The EU’s emissions trading

scheme, begun in January 2005, is the largest company-level scheme for trading carbon dioxide emissions credits in the world.¹⁰⁷ The EU as a whole is bound by the emissions cap required by the Kyoto Protocol, a reduction of 8% from 1990 levels by the end of the Kyoto commitment period of 2008–2012. Each EU country has a separate emissions cap established under the EU’s burden-sharing agreement.¹⁰⁸ Emissions allowances equal to approximately 90%–95% of each country’s cap are distributed for free to regulated parties by their national government.¹⁰⁹ In addition, the EU scheme allows companies to obtain credits generated through the Kyoto Protocol’s joint implementation and CDM, thus expanding the number of credits available for exchange. EU-distributed allowances are freely tradable between regulated parties and between nonregulated parties, such as nongovernmental organizations and individuals.¹¹⁰ However, this may not be true of the credits generated through the Kyoto Protocol’s flexible mechanisms, known as “Certified Emissions Reductions,” or CERs.¹¹¹

Because EU emissions allowances are generated under an emissions trading regime established with a cap, a U.S. court should be satisfied that such allowances are “additional” and, hence, valid to offset the emissions of a defendant subject to a GHG abatement order. Similarly, EU allowances would satisfy the requirement that reductions be surplus and permanent.

Trading between companies in the EU and those located in countries outside the EU is currently permitted under EU trading rules.¹¹² In determining whether to accept a defendant’s use of EU emissions credits to comply with a public nuisance abatement order, a U.S. court might nevertheless be concerned that the EU program would break

¹⁰⁷ EUROPEAN COMM’N, *supra* note 7, at 3.

¹⁰⁸ *Id.* at 5.

¹⁰⁹ *Id.* at 9.

¹¹⁰ *See id.* at 3–5, 19.

¹¹¹ *Cf.* Glenn Wiser, *Frontiers in Trade: The Clean Development Mechanism and the General Agreement on Trade in Services*, 2 INT’L J. GLOBAL ENVTL. ISSUES 288, 304 (2002), available at http://www.ciel.org/Publications/Frontiers_CDM_Wiser.pdf (stating that under rules being established for the trading of emissions credits generated through joint implementation and the CDM, “any trader whose home government is not Party to the [Kyoto] Protocol will not be able to ‘own’ CERs, though it may still be able to provide financial services relating to their trade”).

¹¹² *See, e.g.*, Fred Pearce, *European Trading in Carbon-Emission Permits Begins*, NEW SCIENTIST, Jan. 6, 2005, <http://www.newscientist.com/article.ns?id=dn6846> (“Countries outside the EU, such as Norway, have already said they would like to join and issue their companies with emissions allocations that could, in the future, be traded on the EU market.”).

down if too many EU allowances are siphoned out of the EU market and used by U.S. companies to satisfy emissions reduction obligations in the United States.¹¹³ While a few such instances are unlikely to cause much consternation, numerous instances might raise the ire of the EU companies subject to the EU emissions cap. Such companies are currently relying upon the availability of credits at reasonable prices for their own compliance with their individual emissions allocation under their national cap. Should the purchases of EU allowances by defendants in U.S. tort lawsuits make a sizable dent in the supply of excess allowances, the costs of compliance for these EU companies could soar.

For a number of reasons, however, this risk might be worth taking. First, it is unlikely, even assuming that a large number of abatement orders are issued in the United States, that a judicial willingness to accept EU allowances as evidence of offsets would have a large effect upon the price of EU allowances. Importantly, the EU emissions trading market is not a closed market; the fact that CERs, obtained by EU companies through joint implementation and CDM projects, can be used for compliance implies that the pool of available allowances for EU parties is subject to continual expansion. Although CERs probably cannot be purchased by U.S. companies because the United States is not a party to the Kyoto Protocol, they can be freely traded between EU companies.

Second, even if U.S. demand for EU allowances—communicated through the tort system—drives up the price of EU allowances, it is altogether possible that this development might be welcomed, as opposed to feared. The price of EU allowances recently took a sharp drop when it was discovered that some EU nations had imposed such generous caps upon their industries that few reductions would be required.¹¹⁴ By driving up the price of allowances, U.S. demand could stimulate the emissions reductions that the EU needs to meet its Kyoto targets.

Finally, the use of EU allowances could significantly aid in jump-starting a U.S. emissions trading market. A U.S. market is key to the

¹¹³ Cf. WILLIAM BLYTH & MARTINA BOSI, INT'L ENERGY AGENCY & OECD, LINKING NON-EU DOMESTIC EMISSIONS TRADING SCHEMES WITH THE EU EMISSIONS TRADING SCHEME 25 (2004), available at http://www.iea.org/textbase/papers/2004/non_eu.pdf (discussing potential economic distortions caused by the reallocation of emissions credits).

¹¹⁴ Oliver Tickell, *Prospect of Tighter Euro Allowances Boosts Price*, TIMES (UK), Mar. 30, 2007 at 10, available at 2007 WLNR 6009369.

eventual development of U.S. participation in an international GHG regulatory regime. EU authorities may recognize the value of permitting U.S. GHG sources to use EU allowances for tort compliance purposes as the first step toward broader U.S. participation in such an international regime.

2. Private GHG Exchanges

Another potential source of “preapproved” GHG emissions credits for U.S. tort defendants are those exchanged on private markets. One such market—advertising itself as the only “voluntary but legally binding” GHG emissions market—is the Chicago Climate Exchange (CCX).¹¹⁵ CCX is a membership organization in which each member agrees to abide by an individual cap equal to a reduction in emissions of 1% per year, using its average output from 1998 to 2001 as a baseline. Members can comply with their cap through the purchase of Carbon Financial Instruments, which are equivalent to the right to emit 100 tons of carbon under the CCX cap.

The CCX has been criticized as not being sufficiently stringent to make any real difference in companies’ contributions to climate change. Nevertheless, for present purposes, the important question is whether the CCX, or others like it, might function as an acceptable source of offsets that could be used by U.S. tort defendants to comply with judicially imposed GHG abatement orders. A court would have to scrutinize the mechanisms in place to determine whether the credits generated by, and available to, members constitute real, additional, surplus, and permanent emissions reductions.

In addition to the voluntary GHG exchange represented by CCX, a plethora of private entities now provide GHG offsets as well as services needed to seek out and procure such offsets.¹¹⁶ As opposed to a large private exchange such as CCX, such entities are likely to have in place fewer safeguards to ensure that credits obtained are truly surplus, additional, and permanent, and thus their use to satisfy a judicially imposed abatement order would entail more judicial scrutiny. Nevertheless, because they have probably been subject to some scru-

¹¹⁵ See Chicago Climate Exchange, <http://www.chicagoclimatex.com/> (last visited May 1, 2007).

¹¹⁶ See Jeannie Kever, *For Our Planet’s Health*, HOUS. CHRON., Mar. 18, 2007 at *2, available at 2007 WLNR 5214777 (noting the growing availability of vendors selling carbon offsets); Jack Cox, *Wedded to a Clean World*, DENVER POST, May 8, 2006, at F1, available at 2006 WLNR 8114824 (same).

tiny, the credits offered by such private entities may require less judicial scrutiny than credits obtained from the defendant's simple investment in a credit-generating project similar to the CDM process.

CONCLUSION

In the absence of a mandatory federal emissions reduction program in the United States, state governments are turning to the courts, seeking to augment emerging state-level GHG regulatory programs with controls upon major out-of-state sources of GHGs. These lawsuits provide a rare opportunity for the courts to incorporate emissions trading into common law remedies, thereby potentially jumpstarting a GHG emissions trading market even in the absence of federal authorizing legislation. The trade of GHG emissions reductions is a hallmark of just about every climate change regulatory scheme being implemented or proposed at the international, national, and sub-national levels of government. In incorporating emissions trading into their common law remedies, courts would be playing a valuable role of providing the framework for an intermediate climate change regulatory regime and thereby reducing the costs of an eventual federal cap-and-trade program.

Implementation of such an innovative judicial remedy will require the resolution of many other issues, such as the liability of the defendant and the legitimacy of emissions reduction credits, to name just two major hurdles. This Article has suggested approaches to both of these essential issues by arguing, for example, that the plaintiff's burden of demonstrating causation should be considered within the context of climate change as a global tragedy of the commons. Similarly, although the lack of a U.S. carbon dioxide emissions cap makes it more difficult for courts to determine whether emissions offsets proffered by a defendant truly offset its emissions, this Article has suggested that this problem would be somewhat alleviated were courts to allow defendants to use GHG emissions credits generated under a cap in other nations' programs (such as the EU trading scheme), as well as credits generated on private exchanges in the United States.