

LEGAL LIABILITY AS CLIMATE CHANGE POLICY

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Several attempts have been made to impose liability on private parties for the harms caused by their greenhouse gas (GHG) emissions. Examples of such litigation in the United States include a case brought by northeastern states against several electricity producers¹ and a suit filed by the State of California against six automobile manufacturers in late 2006.² In addition to building on a broad tradition of tort law being used in response to other environmental damages, such litigation draws on the experience of the American tobacco settlement and on recent attempts to use liability as an alternative to legislative gun control.

Three rationales have been offered for liability as climate change policy. First, litigation might be desirable for the compensation that it provides to victims of climate change. Second, liability might create incentives for private actors to reduce GHGs. Finally, these lawsuits might make political conditions more favorable to *ex ante* public policies for GHG reduction. This Commentary addresses the desirability of each of these effects in turn.

I. COMPENSATION FOR HARMS FROM CLIMATE CHANGE

Compensation may be desirable from either the perspective of economic efficiency or of fairness, but strong arguments may also be made that it is undesirable from both of these perspectives.

Although arguments for compensation usually hinge on fairness, an efficiency argument might be made for compensation. People potentially harmed by climate change might be willing to pay for the ability to reduce the variance in their well being as a result of climate change. Although some variance, such as that caused by local storms, may be managed through conventional insurance markets, Howard Kunreuther and Erwann Michel-Kerjan argue that these markets may

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¹ *Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265 (S.D.N.Y. 2005).

² *California ex rel. Lockyer v. Gen. Motors Corp.*, No. 06-05755 (N.D. Cal. filed Sept. 20, 2006).

not handle aggregate risks, such as the risk of rapid climate change or of catastrophic regional storms.³ If so, compensation for some harm through legal liability might help smooth well being across states of the world and thus improve total welfare.

However, as is well known, compensation may be inefficient if it weakens the incentives to avoid harm and thus raises social costs of climate change.⁴ Recent research suggests that adapting to climate change should be an important part of any response strategy. Examples of such adaptations include building sea walls to reduce the damages from sea level rise and adjusting agricultural infrastructure to shifting crop zones. Gary Yohe and Michael Schlesinger estimate the costs of sea level rise in the United States to be approximately thirty percent lower with private adaptation than without.⁵ Compensation, even if only partial, will weaken incentives for private and public sector investments in adaptation and thus substantially increase the costs of climate change.

A stronger justification for compensation would focus on fairness rather than efficiency. Daniel Farber makes persuasive arguments of this nature.⁶ However, it is possible that the redistribution that would occur under a liability regime would be undesirable. Rules for assessing damage based on lost property values would strongly favor the rich. For example, in the United States, the property value losses from sea level rise would likely be concentrated among wealthier households who own high-value coastal real estate. Firms may raise energy prices to pay for compensation, however, so the burden of

³ See Howard C. Kunreuther & Erwann O. Michel-Kerjan, *Climate Change, Insurability of Large-Scale Disasters, and the Emerging Liability Challenge*, 155 U. PA. L. REV. 1795, 1840 (2007) (“Today, some insurers feel that the risks from hurricanes and other weather-related events in certain areas are uninsurable by the private sector alone due to the large catastrophic losses of recent years and the impact of global warming on weather patterns.”).

⁴ For example, the reciprocal nature of externalities is a major theme in R.H. Coase’s famous article. See R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 40 (1960) (“The belief that it is desirable . . . to compensate those who suffer damage . . . is undoubtedly the result of not comparing the total product obtainable with alternative social arrangements.”).

⁵ See Gary W. Yohe & Michael E. Schlesinger, *Sea-Level Change: The Expected Economic Cost of Protection or Abandonment in the United States*, 38 CLIMATIC CHANGE 447, 465-66 tbls.II & III (1998) (estimating transient costs for a 50 cm sea level rise in 2100 to be \$158.30 million with perfect foresight and \$221.81 million without foresight).

⁶ See Daniel A. Farber, *Basic Compensation for Victims of Climate Change*, 155 U. PA. L. REV. 1605, 1641-47 (2007) (discussing application of the goals of the tort system to climate change).

compensating those harmed by climate change is likely to be regressive.⁷ Thus, litigation could create a net transfer to wealthy households.

II. GREENHOUSE GAS REDUCTION

Another justification for liability is that it might bring about GHG reductions. One way to achieve this goal would be to abandon compensation for victims and require defendants to invest in projects that create environmental improvements. Remedies might be similar to Supplemental Environmental Projects, which are used intensively in enforcing American federal environmental laws and require violators to improve the natural resources harmed by their violations.⁸ For climate change, spending might include carbon sequestration projects, such as reforestation.

One question about this design is whether it increases spending on these public goods or just crowds out government financing. Examining the effects of the tobacco settlement, Monica Singhal found that states' propensity to spend on tobacco control programs from the settlement was low—only twenty cents on the dollar, with the remainder treated as ordinary government revenue. However, their propensity to spend on these programs out of other revenue was zero, so the settlement has affected spending to some degree.⁹

Another strategy is to use liability to generate desirable effects on ex ante pollution decisions. If defendants must pay damages that depend on GHG releases, liability would create an incentive to reduce emissions, at least for damages that are prospective at the time of the settlement. Along these lines, Joni Hersch and Kip Viscusi point to the effective tax created by the tobacco settlement.¹⁰ Kirsten Engel

⁷ See Ian W.H. Parry et al., *The Incidence of Pollution Control Policies*, in INTERNATIONAL YEARBOOK OF ENVIRONMENTAL AND RESOURCE ECONOMICS 2006/2007, at 1, 12-14 (Tom Tietenberg & Henk Folmer eds., 2006) (noting that most studies have found raising the consumer cost of energy to be regressive).

⁸ In fiscal year 2006, spending on Supplemental Environmental Projects totaled approximately \$78 million. OFFICE OF ENFORCEMENT & COMPLIANCE ASSURANCE, U.S. ENVTL. PROT. AGENCY, EPA FY2006 COMPLIANCE & ENFORCEMENT ANNUAL RESULTS 11 (2006), available at <http://www.epa.gov/compliance/resources/reports/endofyear/eoy2006/fy2006results.pdf>.

⁹ Monica Singhal, *Special Interest Groups and the Allocation of Public Funds* 3 (Nat'l Bureau of Econ. Research, Working Paper No. 12037, 2006), available at <http://www.nber.org/papers/w12037>.

¹⁰ See Joni Hersch & W. Kip Viscusi, *Allocating Responsibility for the Failure of Global Warming Policies*, 155 U. PA. L. REV. 1657, 1693 & n.58 (2007) (noting that the tobacco

makes the connection to ex ante policy even more explicit by suggesting that the remedy should compel polluters to participate in tradable GHG permit markets.¹¹ Another approach would be more similar to command-and-control ex ante regulation. Remedies might require changes in production techniques, such as a shift to lower-carbon electricity generation, or changes in product characteristics, such as an increase in the fuel efficiency of motor vehicles.

The problems with these approaches have been discussed by several authors, so I mention briefly only two that seem of particular concern. First, litigation seems poorly equipped to handle leakage—the possibility that greenhouse-gas-intensive activities will relocate to jurisdictions with less restrictive controls. Leakage is a difficult problem for conventional tax and permit programs, but the government may be able to make adjustments (for example, an “embedded carbon” tariff on imports) to address industrial mobility. Given the necessarily limited number of defendants in any lawsuit, however, it will be even more difficult to avoid substantial leakage with legal remedies.

Second, the accumulative nature of GHGs means that controls are effective only if they remain in place over long time horizons. The need for long-term, time-consistent policies is a challenge for all responses, but seems especially difficult for restrictions that result from a one-time legal settlement. In particular, it will be difficult for legal remedies to update the baselines used to gauge compliance, as may be necessary because of unforeseeable changes over time in economic conditions or technology. Ongoing enforcement and updating is more compatible with a regulatory approach.

III. EFFECTS ON PUBLIC POLICY FORMATION

Given the likely inefficiency of liability, perhaps it is best thought of as an indirect mechanism: liability may improve the political feasibility of ex ante public policies arrived at through legislation and regulation. The process of creating public policy may be viewed as a Nash bargaining game, in which the outcome of a negotiation be-

settlement was structured in such a way that it operated like a \$0.40 per pack tax on cigarettes (citing W. KIP VISCUSI, *SMOKE FILLED ROOMS: A POSTMORTEM ON THE TOBACCO DEAL* 4, 41 (2002)).

¹¹ See Kirsten H. Engel, *Harmonizing Regulatory and Litigation Approaches to Climate Change Mitigation: Incorporating Tradable Emissions Offsets into Common Law Remedies*, 155 U. PA. L. REV. 1563, 1596 (2007) (“[T]he 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.”).

tween parties depends on the “threat points” that represent the outcome should they fail to reach agreement. In this game, parties with interests in GHG control negotiate with those who expect to bear costs. The status quo gives a strong threat point to parties that favor limited climate change policy because they can expect to bear few costs. If the status quo included the possibility of climate change liability, and ex ante public policy might substitute for that liability, then their opposition to such public policy would subside.

Most analyses conclude that the United States currently spends too little money on climate change mitigation.¹² Thus, a shift in threat points to support a more aggressive climate policy would likely be efficiency improving. If so, features of the threat point that would otherwise reduce its efficiency actually become desirable. It could be helpful that climate change litigation threatens to have high transaction costs, such as the high legal fees that could result from the legal complexities discussed in this Symposium. Similarly, if defendants are risk averse, uncertainty about the outcomes of the litigation and the possible difficulty obtaining insurance coverage for these risks discussed by Kunreuther and Michel-Kerjan might also be efficiency enhancing, although the risks’ direct effects would be costly.¹³

A shift in threat points might affect not just the likelihood that some climate change policy is implemented, but also the form that the policy takes. Predicting the nature of these effects would require a detailed model of both the public policy bargaining game and the climate change liability that different parties could face. For example, if political considerations affect the industries subject to lawsuits, they could alter the form of any public policies negotiated in the shadow of this threat. A formal model of the negotiation process would potentially be illuminating for these issues.

Even without a formal model, one can speculate that the threat of climate change litigation may alter the political environment to per-

¹² For a summary of these analyses, see David L. Kelly & Charles D. Kolstad, *Integrated Assessment Models for Climate Change Control*, in INTERNATIONAL YEARBOOK OF ENVIRONMENTAL AND RESOURCE ECONOMICS 1999/2000, at 171, 186-88 (Henk Folmer & Tom Tietenberg eds., 1999). More recently, prominent assessments have included NICHOLAS STERN, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE (2007), and William D. Nordhaus, *Global Warming Economics*, 294 SCIENCE 1283 (2001). A prepublication version of the *Stern Review* is available at http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm.

¹³ See Kunreuther & Michel-Kerjan, *supra* note 3, at 1841 (observing that “insurers will be more concerned with providing (Directors and Officers’) liability coverage to firms that they believe are not behaving responsibly” with respect to GHG emissions).

mit a more efficient regulatory instrument to be chosen. The economics literature suggests large differences in the efficiency of alternative policy instruments for climate change. As is well known, incentive-based policies such as pollution taxes and tradable pollution permits are more cost effective than traditional command-and-control policies. Within the class of incentive-based policies, programs have much lower costs if they raise revenue and the government uses this revenue to lower distortionary taxes, such as taxes on labor and capital income. Ian Parry and his coauthors show that failing to take advantage of this “revenue recycling” can dramatically reduce the net benefits of a policy.¹⁴ Revenue-raising instruments include taxes and tradable permits that are auctioned; many tradable permit programs, such as the popular cap-and-trade programs, do not fall into this category. In addition, economists argue that environmental taxes are more efficient than other policy instruments for climate change policy.¹⁵ The argument is that policies, such as taxes, that target the marginal cost of GHG abatement represent the best response to uncertainty in the costs of GHG abatement.

Most current proposals for U.S. climate change policies do not use the more efficient instruments. Although incentive-based proposals have become common, these policies are most often cap-and-trade programs, which do not raise revenue and target quantities rather than marginal costs. One reason for the popularity of cap-and-trade approaches is that permits may be given out in a way that offsets the costs of the policy for some polluters or otherwise “buys off” the pol-

¹⁴ If the marginal environmental damage of one ton of carbon emitted is \$75, a policy with revenue recycling has twice the social benefit of a policy that does not recycle revenues. With lower levels of marginal environmental damage, the policy with revenue recycling may be beneficial, whereas the same policy without revenue recycling will cause a welfare loss. Ian W.H. Parry et al., *When Can Carbon Abatement Policies Increase Welfare? The Fundamental Role of Distorted Factor Markets*, 37 J. ENVTL. ECON. & MGMT. 52, 54 (1999). Revenue recycling is only possible with policies such as carbon taxes that raise revenue; however, carbon taxes do not imply revenue recycling because their revenues may be used in less efficient ways.

¹⁵ The difference is based on Martin Weitzman’s “prices versus quantities” analysis of government intervention under uncertainty. See Martin L. Weitzman, *Prices vs. Quantities*, 41 REV. ECON. STUD. 477, 485-87 (1974) (showing that, with uncertain costs, the choice between public policies that target price and those that target quantity depends on the slopes of marginal benefits and marginal costs). The marginal benefits of GHG abatement are likely to be nearly flat, whereas the marginal cost function has a steeper slope. William A. Pizer, *The Optimal Choice of Climate Change Policy in the Presence of Uncertainty*, 21 RESOURCE & ENERGY ECON. 255, 257 (1999). Under these conditions, it is more important for policies to target marginal costs than quantities. *Id.* (citing Weitzman, *supra*).

icy's opponents.¹⁶ However, the need to make these concessions may be weakened if some of these opponents will be liable for damages if the parties fail to agree on a public policy alternative. Any revenue-raising policy instrument might stand a better chance, with taxes at least a possibility among these instruments. Thus, liability might greatly increase the efficiency of climate change policy, even if used only as a threat.

In conclusion, liability is unlikely to be the most desirable response to climate change, either for the compensation it provides or for the GHG controls that might result from remedies. Liability is only a second-best response, which may be valuable if traditional public policies are infeasible or, better still, if liability can make these public policies more feasible and more efficient.

¹⁶ However, in an empirical study of pollution permit allocation, Paul Joskow and Richard Schmalensee conclude that the allocation of U.S. sulfur dioxide allowances did not in fact favor regions that expected high costs, but rather played into more general national politics. See Paul L. Joskow & Richard Schmalensee, *The Political Economy of Market-Based Environmental Policy: The U.S. Acid Rain Program*, 41 *J.L. & ECON.* 37, 79 (1998) (noting that "dirty" states—those with high sulfur dioxide emissions—"did relatively poorly" in the final allocation of emission credits, while states with "'clout' . . . tended to do well").