

# **AFTER *AEP*: THE CLIMATE CHANGE TORT AND THE SOCIAL COST OF CARBON**

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## **I. INTRODUCTION: *AEP*, CLIMATE CHANGE TORTS, AND THE SCC METRIC**

This paper proposes that climate change tort plaintiffs should be allowed to demonstrate harm caused by carbon dioxide emissions by relying on the social cost of carbon (“SCC”) metric. In the wake of last summer’s *American Electric Power Company v. Connecticut* (“*AEP*”) decision,<sup>1</sup> the Supreme Court’s displacement holding has been discussed at length. These commentators, however, have largely ignored the Court’s initial jurisdictional holding. This first holding leaves the door open to climate change plaintiffs alleging state tort claims and suggests that they may survive threshold review and proceed to adjudication on the merits. In other words, the climate change tort remains alive and well in state courts, if only a plaintiff can craft a successful tort suit that makes a colorable damages claim.

Tort law is a natural avenue for plaintiffs seeking compensation for the inequities created by climate change; unlike statutory law, tort law is traditionally concerned in part with compensating individual victims for their losses.<sup>2</sup> This is the first paper to analyze the applicability of the SCC metric in the context of climate change torts. Federal agencies are now required to select from a range of SCC figures when calculating the costs and benefits of government action, and plaintiffs should be allowed to utilize this metric to compute damages and satisfy the common law harm requirement in a climate change tort action. Reliance on the SCC metric will produce damage calculations that are consistent, comparable, and predictable across the country, and it will ensure that tort law remains an important component of the future regulation of greenhouse gasses.

This paper examines the *AEP* decision and concludes that the Court’s jurisdictional holding will allow climate change plaintiffs to continue to bring tort claims in state court. From there, this paper discusses the fundamental requirements of a damages claim and highlights the paradox of a climate change tort action. Finally, this paper analyzes the federal SCC metric and concludes that plaintiffs should be able to rely on the metric to prove damages in a climate change tort action.

## **II. *AEP* AND STATE CLIMATE TORTS**

Frustrated by a lack of legislative and executive action to address climate change, some aspiring reformers have turned to the courts. These litigation efforts have enjoyed mixed success.<sup>3</sup> The overwhelming majority of climate change cases involve a statutory cause of action brought by a nongovernmental environmental organization against a government entity.<sup>4</sup> A handful of plaintiffs, however, have brought climate change tort claims. Just six percent of climate change claims are derived from the common law;<sup>5</sup> since 2004, there have been at least five climate change tort suits filed in federal court.<sup>6</sup> Only the *AEP* decision has reached the Supreme Court. While the preceding climate change tort cases suggest a path forward for demonstrating harm, it is *AEP* that definitively allows climate change plaintiffs to seek adjudication of their state tort claims.

In 2004, two sets of plaintiffs pressed identical claims against six electric power companies. Defendants had substantially contributed to global warming by emitting a collective annual total of 650 million tons of carbon dioxide and had interfered with public rights in violation of both federal and state public nuisance laws.<sup>7</sup> The defendants had been carefully chosen – together, they were alleged to contribute twenty-five percent of emissions from the domestic power sector, ten percent of emissions from all domestic human activities, and a full 2.5 percent of all anthropogenic emissions worldwide.<sup>8</sup> The U.S. District Court for the Southern District of New York consolidated and dismissed the cases on the grounds that they posed a non-justiciable political question.<sup>9</sup> On appeal, the Second Circuit reversed the district court and held that both the States and the private land trusts had standing to sue because their property was being harmed by climate change. This broad rule of law stood in stark contrast to previous circuit court decisions and might have allowed a stream of private landowners to file similar claims. To resolve the circuit split, the Supreme Court granted certiorari in December 2010.<sup>10</sup>

By a split vote of 4-4, the Court first upheld the Second Circuit’s exercise of jurisdiction (the “jurisdictional holding”).<sup>11</sup> This is the key holding for climate change plaintiffs alleging tort claims. The Court then proceeded to rule on the merits of plaintiffs’ federal claims, unanimously holding that any federal common law claim related to greenhouse gas emissions had been displaced by the Clean Air Act and by the EPA’s duty to regulate such emissions after *Massachusetts v. EPA* (the “displacement holding”).<sup>12</sup> Having disposed of the federal public nuisance claims, the Court remanded the state public nuisance claims for consideration by the lower court.

Much of the commentary on the *AEP* decision has focused on the displacement holding. The jurisdictional holding has been viewed as something of an afterthought, and perhaps rightly so: although the state courthouse door remains wedged open to climate change plaintiffs alleging tort claims, these plaintiffs do not yet have a track record of success. Further, the Justices themselves seem to view the concept of climate torts with dismay. During oral argument, Justice Ginsburg expressed concern that the plaintiffs’ claims would require district court judges to transform into “a kind of super EPA.”<sup>13</sup> The language of the opinion also throws cold water on the idea of pursuing a state tort claim: referring to the regulation of greenhouse gasses, the Court stated that “[an] expert agency is surely better equipped to do the job than individual district judges issuing ad hoc, case-by-case injunctions. Federal judges lack the scientific, economic, and technological resources an agency can utilize in coping with issues of this order.”<sup>14</sup>

One possible conclusion to take away from *AEP*, then, is that only the displacement holding is important. Hari Osofsky argues that the displacement holding suggests that the Court is “pushing the litigation along a regulatory-focused course.”<sup>15</sup> But even the displacement holding does not suggest that the common law has been totally eclipsed by public law in the area of greenhouse gas regulation. In fact, in the case of subsequent agency inaction, the displacement holding suggests the opposite result. If the EPA chooses to abstain from regulating greenhouse gas emissions under the Clean Air Act, then state common law claims will be the only avenue left available to climate change plaintiffs. That avenue, in turn, remains open because of *AEP*’s initial jurisdictional holding. The longer that the EPA drags its feet, the more palatable a climate change tort becomes.

### III. CRAFTING THE HARM ELEMENT OF A CLIMATE CHANGE TORT

The *AEP* oral argument transcript suggests that the Justices are skeptical that tort law should play any role in the regulation of greenhouse gas emissions. Many in the legal academy share this skepticism.<sup>16</sup> It is shortsighted, however, to propose that the problems posed by climate change can be met simply by omnibus federal legislation or piecemeal regulation. Climate change torts, rooted in the common law, should serve as a viable alternative to public law in the short term and an effective complement to public law in the long term.

### **A. In Defense of the Climate Change Tort**

Tort law is centrally concerned both with the compensation of victims for losses and with the deterrence of potential tortfeasors.<sup>17</sup> Traditionally, however, tort law has neatly identified tortfeasors and causally connected them to victims. The disaggregated nature of climate change thus poses a dilemma: any entity can pollute today and avoid the full cost until some later date. Douglas Kysar notes that tort law “seems fundamentally ill-equipped to address the causes and impacts of climate change: diffuse and disparate in origin, lagged and latticed in effect, anthropogenic greenhouse gas emissions represents the paradigmatic anti-tort.”<sup>18</sup> Maxine Burkett identifies the paradox of tort law and climate change, suggesting that tort law could add an element of justice to climate change regulation by providing compensation to victims lost in the public law shuffle, but noting that tort law may not yet be equipped to meet such a challenge.<sup>19</sup>

Climate change torts should not be viewed as a sufficient substitute for a public law regulating greenhouse gas emissions. Properly conceptualized, tort law should be able to compensate victims of climate change while serving as a complement to a regulatory regime. Stephen Johnson notes that common law remedies serve as “an essential complement to public law for effective programs to minimize harms to the environment and human health,” arguing that the common law often remedies public law failures.<sup>20</sup> We can expect that any federal legislation enacted to regulate greenhouse gasses will contain some reference to the common law, given that most major environmental statutes have preserved common law remedies as a backstop to regulation.<sup>21</sup> Too often, critics misconstrue the role of tort law as an alternative to public law. Instead, state tort law will help to fill in the compensatory cracks papered over by a federal regulatory regime addressing climate change.

Many academics have reacted to the climate change tort paradox by attempting to fit climate change claims into the existing tort framework. This is not an exercise in fitting round-shaped torts into square-shaped fact patterns; a handful of torts could conceivably be applied to climate change claims. Nuisance claims have dominated the litigation thus far.<sup>22</sup> A products liability claim has been suggested, but never litigated.<sup>23</sup> Negligence has also been proposed,<sup>24</sup> but only one litigant has attempted to bring a colorable claim.<sup>25</sup> Each of these existing theories of liability has strengths and weaknesses, and each of the elements of a tort claim has been addressed by a variety of authors.<sup>26</sup> The harm element of a traditional tort, however, has escaped serious analysis. This paper limits its analysis to the harm element of any future climate change tort. This paper does not adopt a position as to whether climate change plaintiffs should pursue existing tort remedies or propose new theories of liability; in either instance, harm must be demonstrated, and this paper proposes that plaintiffs should be allowed to rely on the social cost of carbon to demonstrate harm and establish damages.

### **B. The Harm Element**

Harm is one of the fundamental elements of any tort action, and every tort allegation must be accompanied by a showing of harm or injury. When crafting a tort claim, lawyers must first decide whether to seek compensatory damages or injunctive relief. Thus far, plaintiffs alleging climate change torts have split between the two methods of relief. Some have asked for compensation,<sup>27</sup> while others have made injunctive demands.<sup>28</sup> In the climate change context, requesting injunctive relief sidesteps problems related to placing a concrete dollar figure on environmental harms that have been suffered. This is the approach taken by the plaintiffs in *AEP*, where the plaintiffs asked that defendants be enjoined from emitting carbon dioxide above a judicially-created cap to be decreased on an annual basis.<sup>29</sup> Moving forward, climate change plaintiffs should pay heed to the warnings of *AEP* and request money damages. In the words of Jonathan Zasloff, injunctive relief in this context might function as a de facto “judicial carbon tax,” and many courts will be reluctant to grant it.<sup>30</sup> Money damages do not present this problem. Further, because money damages provide financial relief, they also preserve the compensatory nature of the climate change tort.

Crafting the harm element of a climate change tort, however, is more complicated than simply choosing between injunctive relief and compensatory damages. Plaintiffs must also meet the standard for demonstrating harm. Traditional tort law requires a plaintiff to have presently realized an actual loss or damage.<sup>31</sup> For injuries that develop over a period of time, such as toxic torts or medical problems, tort law must choose a point at which to intercede and impose liability, and the law has historically chosen the point at which an injury actually occurs.<sup>32</sup> This is a stumbling block for climate change plaintiffs, who often seek compensation for injuries that have not yet been fully realized. Alternatively, plaintiffs could seek to have a different standard applied. The harm standard has been occasionally relaxed in toxic tort cases because of the unusually long latency period of some toxins.<sup>33</sup> Similarly, in “enhanced risk” cases, plaintiffs must demonstrate only that they are more likely than not to develop a latent disease for which toxic exposure has increased their risk.<sup>34</sup> Some courts have allowed recovery for the costs of medical monitoring to detect the onset of disease after toxic exposure.<sup>35</sup> But courts generally reject these alternative standards, refusing to compensate plaintiffs for future harms not yet suffered.

Tort law, in short, is not known for its flexibility. Mere risk is not generally compensable. Because courts have been reluctant to recognize these alternatives, the strategic climate change plaintiff should avoid novel standards and instead identify a concrete injury that has already been realized. Coastal erosion or a loss of beachfront property caused by rising sea levels can serve as examples of harms suffered as a result of climate change. This strategy is bolstered if a plaintiff plans to rely on the social cost of carbon metric to calculate damages.

#### **IV. USING THE SOCIAL COST OF CARBON TO CALCULATE DAMAGES**

When attempting to calculate damages, climate change torts present problems of consistency. Courts may be reluctant to allow damage awards that differ dramatically on a case-by-case basis. Competing estimates as to the harms caused by carbon dioxide emissions will make comparison difficult. Climate change torts will also present problems of predictability: potential plaintiffs will be unable to accurately project the value of litigation, and potential defendants will be unable to gauge the cost of their actions. Finally, climate change torts will present problems of deterrence. Without any accurate assessment of the consequences of their actions, potential polluters will not be adequately deterred from harmful conduct.

This paper proposes that the social cost of carbon (“SCC”) metric can accurately gauge damages and should satisfy the harm element of a traditional tort. The SCC metric, as determined by an interagency working group in 2010,<sup>36</sup> estimates the present value of future damages caused by one metric ton of greenhouse gas emissions; currently, the SCC uses \$21 per metric ton as the central figure of analysis. In other words, the SCC assigns a dollar figure to every metric ton of carbon dioxide that is emitted in the United States each year. If a person emits one metric ton of carbon dioxide, then that person has externalized \$21 of future damages to be suffered by somebody else. A plaintiff who is allowed to rely on the SCC metric to project damages will not run afoul of the problems of consistency, dependability and deterrence that otherwise plague climate change torts. A calculation that uses the SCC metric focuses on the front-end emissions of the polluter. The total amount recovered in a climate change tort action is thus conditioned on the actions of the polluter, and not on the damages inflicted on the plaintiff. In order to be useful, however, the federal SCC metric and its criticisms must be discussed in detail.

#### **A. The SCC as Calculated By an Interagency Working Group**

The SCC figure has been haphazardly included in cost-benefit analysis (“CBA”) since 1981, when Executive Order 12291 first required the White House Office of Management and Budget (“OMB”) to review proposed federal regulations constituting “significant rules.”<sup>37</sup> Unfortunately, federal agencies applied disparate standards, or no standards at all.<sup>38</sup> An interagency working group (“Working Group”) was created in 2009 to determine a uniform set of SCC values that could be applied by government agencies conducting CBA. Twelve government agencies, including the EPA, OMB and Treasury, were involved. The Working Group released a preliminary assessment of SCC values based on existing estimates published by outside entities.<sup>39</sup> The estimate of global SCC values ranged from \$5 per ton to \$55 per ton.<sup>40</sup> Subsequently, the Working Group set out to create its own assessment. While the process by which the Working Group convened and conducted its business has been criticized as opaque,<sup>41</sup> the final product makes clear the assumptions and uncertainties upon which the Working Group was forced to rely. The Working Group relied on three integrated climate assessment models that explicitly link physical climate impacts to future economic damages within the model.<sup>42</sup> Each model projects future emissions and then converts these emissions into atmospheric concentrations. These concentrations are converted into temperature changes, and subsequently into economic damages. The models themselves are complex, and each relies on a diverse set of assumptions, but no other climate model links climate changes to economic changes.<sup>43</sup> Each model is run to obtain a set of mean SCC values, and then the model is rerun with one additional ton of carbon dioxide to determine the marginal effect on global GDP of the additional ton. This marginal figure is the published SCC value for each category.

Applying discount rates of 5%, 3% and 2.5%,<sup>44</sup> the Working Group produced SCC values of \$5, \$21, and \$35 per ton of carbon dioxide emissions.<sup>45</sup> Again, the \$21 figure is the central figure of the analysis, because a 3% discount rate was applied.<sup>46</sup> A fourth value, \$65 per ton, was also included to represent a future scenario in which higher-than-expected impacts from temperature change lengthen the tail in the SCC distribution.<sup>47</sup> These values are not static; they grow over time. The central SCC value rises to \$26 per ton in 2020, \$32.80 per ton in 2030, \$39.20 per ton in 2040, and \$44.90 per ton in 2050.<sup>48</sup> When government agencies now engage in CBA, they will include an estimate of costs resulting from carbon dioxide emissions that is consistent and predictable across

different agencies. This will result in better administrative rule making. Before rushing to apply the SCC to climate change torts, however, criticisms of the SCC should be considered.

Most of the critics of the Working Group's SCC analysis agree that the underlying assumptions and models are imperfect. Jonathan Masur and Eric Posner have dissected the Working Group's rule in detail.<sup>49</sup> They challenge many of the Working Group's assumptions, notably including the assumption that worldwide carbon intensity will decline through 2050.<sup>50</sup> While it is generally true that carbon intensity is declining in industrialized countries via efficiency gains, it is possible that carbon intensity in developing countries will temporarily increase as countries like China and India first industrialize before becoming more efficient. Masur and Posner also point out the various inconsistencies between the Working Group's three climate assessment models, cautioning that only one of the three models has a publicly released data set.<sup>51</sup> Masur and Posner suggest that many of the ultimate decisions to favor one model or data set over another were made as political solutions "designed to appease all sides."<sup>52</sup> Other critics have simply computed their own SCC metric. Frank Ackerman and Elizabeth Stanton project the SCC to be between \$28 and \$893 in 2010, rising as high as \$1,550 in 2050.<sup>53</sup> Previous attempts to determine a social cost of carbon have also yielded higher figures.<sup>54</sup>

Ultimately, any attempt to project future damages will involve uncertainty. Lines must be drawn in the sand, and policymakers will quibble over moving the line in one direction or another. The criticisms of the Working Group's SCC figures are meritorious - it is likely that a central value of \$21 per ton is too low. But the strongest argument in favor of the SCC does not hinge on whether anyone can pose omniscient calculations about the future; instead, the mere existence of the SCC metric, created by an intergovernmental panel, poses an opportunity for advocates of climate change reform. These reformers are missing a major opportunity if they seek only to challenge the Working Group's SCC analysis instead of capitalizing on the opportunities presented by such a metric.

### **C. In Defense of the SCC**

To date, no one has recognized the potential utility of the SCC metric to project damages in climate change tort litigation. Instead, analysis of the SCC has centered on its utility in crafting climate policy via regulation or legislation.<sup>55</sup> These analyses are not wrong. The SCC metric is critical in the short and medium term as agencies undergo CBA analysis and policymakers consider regulating greenhouse gas emissions. Nor are the critics of the Working Group's SCC methodology incorrect. If the SCC is important for policy, then it is important that the range of figures be as accurate as possible.

But the significance of the Working Group's SCC metric is not limited to these endeavors. Its full import can be understood only by referring back to the *AEP* decision. At oral argument, Justice Ginsburg voiced her concern that climate change torts might force judges to tackle such complex environmental matters that they would become a "super EPA."<sup>56</sup> This concern showed up in the opinion, which suggested that judges lacked the scientific acumen to parse the complexities of climate change.<sup>57</sup> Employing the Working Group's SCC metric, however, should alleviate these concerns. At the outset, climate change plaintiffs will be forced to adhere to the traditional tort standard of harm by pointing to an actual injury that is presently realized. This will not be uncharted territory for judges. From there, if plaintiffs across multiple lawsuits choose to rely on

the social cost of carbon when computing damages stemming from carbon dioxide emissions, then judges will not be forced to impersonate the EPA. Concerns of judicial overreach are eliminated from the harm element if plaintiffs are allowed to rely on the SCC metric. Further, the SCC metric provides a range of damages from which a court could choose, injecting an element of flexibility into the proceedings.

Such reliance would have other beneficial effects. Damage awards would become consistent across different lawsuits because of the reliance on a single metric. A metric ton of carbon dioxide would not be penalized at a higher rate in Texas than in Florida. Any perceived drop-off in actual value of damages would be offset by the increased likelihood of success on the merits; in other words, while an additional metric ton of carbon dioxide might cause more actual damage to the Florida coastline compared to Tennessee farmland, the only alternative available to a Florida plaintiff would be to attempt a difficult demonstration of damages that had uncertain prospects of success. Using the SCC metric is not a cure-all for the damages posed by climate change, but it will provide some measure of relief to victims, even if that relief is not always perfect. The upside will be consistent damage recoveries across the country. This will allow climate change plaintiffs to predict the value of litigation; instead of dimly grasping for a dollar figure that might be acceptable to the court, a plaintiff can project damages based on the total amount of carbon dioxide actually emitted.

#### IV. CONCLUSION

When the Supreme Court issued its 1972 decision in *Sierra Club v. Morton*,<sup>58</sup> Justice Blackmun stood at the bench and declared, “[O]ur emerging problems of the environment and ecological unbalance are worrisome problems indeed, and I am distressed that our law is so inflexible that we find ourselves helpless procedurally to meet these new problems.”<sup>59</sup> Almost forty years later, Justice Blackmun’s observation has proved prescient. The emerging problem of climate change is being ignored by a political system mired in gridlock and a rigid legal system yet to rise to the challenge. Remedying the full costs of climate change in the United States will require more than a new regulatory agency or a cap-and-trade scheme; it should also involve climate change torts that compensate victims for losses and deter polluters from excessive emissions. The jurisdictional holding of *AEP* preserves access to state courts for climate change tort plaintiffs, and they should continue to push for adjudication on their claims. Reliance on the SCC metric should permit these plaintiffs to demonstrate harm in climate change tort cases.

#### Endnotes:

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<sup>1</sup> American Electric Power Co. v. Connecticut, 131 S. Ct. 2527, No. 10-174 (June 20, 2011).

<sup>2</sup> See, e.g., GUIDO CALABRESI, THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS 26 (1970) (describing “fairness” in the distribution of accident costs as one of the fundamental goals of tort law); W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS 6 (5th ed. 1984) (describing the law of torts as “concerned with the allocation of losses arising out of human activities; and since these cover a wide scope, so does this branch of law”).

<sup>3</sup> David Markell and J.B. Ruhl, *An Empirical Survey of Climate Change Litigation in the United States*, 40 ENVTL. L. REPORTER 10644, 10647 (2010). The authors found that plaintiffs enjoyed a success rate of roughly 50%.

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<sup>4</sup> *Id.* at 10649 (2010).

<sup>5</sup> *Id.* at 10653 fig. 5.

<sup>6</sup> American Electric Power Co. v. Connecticut, 131 S. Ct. 2527, No. 10-174 (June 20, 2011); Korsinsky v. EPA, 2005 U.S. Dist. LEXIS 21778 (S.D.N.Y. 2005); Native Village of Kivalina v. ExxonMobil Corp., 663 F. Supp. 2d 863 (N.D. Cal. 2009); California v. General Motors Corp., No. 06-05755, 2007 WL 2726871 (N.D. Cal. Sept. 17, 2007); Comer v. Murphy Oil USA, Inc., 607 F.3d 1049 (5th Cir. 2010).

<sup>7</sup> 406 F. Supp. 2d 265 (S.D.N.Y. 2005).

<sup>8</sup> 131 S. Ct. 2527 at 2534.

<sup>9</sup> 406 F. Supp. 2d at 274.

<sup>10</sup> 131 S. Ct. 813, No. 10-174 (Dec. 6, 2010).

<sup>11</sup> Justice Sotomayor did not participate in the decision because she had previously participated in the Second Circuit's decision.

<sup>12</sup> 549 U.S. 497 (2007).

<sup>13</sup> Full transcript available at [http://www.supremecourt.gov/oral\\_arguments/argument\\_transcripts/10-174.pdf](http://www.supremecourt.gov/oral_arguments/argument_transcripts/10-174.pdf)

(last visited Nov. 17, 2011).

<sup>14</sup> 131 S. Ct. at 2539-40.

<sup>15</sup> Hari M. Osofsky, AEP v. Connecticut's *Implications for the Future of Climate Change*, 121 YALE L.J. ONLINE 101, 103 (2011).

<sup>16</sup> See, e.g., Aura Weinbaum, *Unjust Enrichment: An Alternative to Tort Law and Human Rights in the Climate Change Context?*, 20 PAC. RIM L. & POL'Y J. 429, 442 (2011) (describing tort-based climate change claims as "purely speculative").

<sup>17</sup> *Supra* note 2.

<sup>18</sup> See, e.g., Douglas Kysar, *What Climate Change Can Do About Tort Law*, 41 ENVTL. L. 1, 3-4 (2011).

<sup>19</sup> Maxine Burkett, *Climate Justice and the Elusive Climate Tort*, 121 YALE L.J. ONLINE 115, 118 (2011).

<sup>20</sup> Stephen M. Johnson, *From Climate Change and Hurricanes to Ecological Nuisances: Common Law Remedies for Public Law Failures?*, 27 GA. ST. U. L. REV. 565, 565 (2011).

<sup>21</sup> See, e.g., 33 U.S.C. §§ 1365(e), 1370 (2006); 42 U.S.C. §§ 6929, 6972(f) (2006); 42 U.S.C. § 9614 (2006).

<sup>22</sup> Each case has included at least one nuisance claim. See *supra* note 6.

<sup>23</sup> David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1, 4 (2003).

<sup>24</sup> David Hunter and James Salzman, *Negligence in the Air: The Duty of Care in Climate Change Litigation*, 155 U. PA. L. REV. 1741, 1752 (2007).

<sup>25</sup> Korsinsky v. EPA, 2005 U.S. Dist. LEXIS 21778 (S.D.N.Y. 2005).

<sup>26</sup> For a concise summary of the multiplicity of legal issues posed by a climate change tort, see Michael B. Gerrard, *What Litigation of a Climate Nuisance Suit Might Look Like*, 121 YALE L.J. ONLINE 135 (2011). On duty and breach,



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see, e.g., Hunter and Salzman, *supra* note 49. On causation, see, e.g., Samantha Lawson, *The Conundrum of Climate Change Causation: Using Market Share Liability to Satisfy the Market Share Identification Requirement in Native Village of Kivalina v. ExxonMobil Co.*, 22 FORDHAM ENVTL. L. REV. 433 (2011); Lauren Case, *Climate Change: A New Realm of Tort Litigation, and How to Recover When the Litigation Heats Up*, 51 SANTA CLARA L. REV. 265 (2011).

<sup>27</sup> For example, the plaintiffs in *Murphy Oil* sought money damages. See *supra* note 6.

<sup>28</sup> For example, the plaintiffs in *American Electric* requested injunctive relief. See *supra* note 6.

<sup>29</sup> *Infra* note 30.

<sup>30</sup> Jonathan Zasloff, *The Judicial Carbon Tax: Reconstructing Public Nuisance and Climate Change*, 55 UCLA L. REV. 1827, 1830 (2008).

<sup>31</sup> KEETON ET AL., *supra* note 2, at 165.

<sup>32</sup> For an excellent discussion of this theme, as well as an examination of the enhanced risk doctrine, see *Ayers v. Township of Jackson*, 525 A.2d 287, 298 (N.J. 1987).

<sup>33</sup> Troyen A. Brennan, *Environmental Torts*, 46 VAND. L. REV. 1, 1-2 (1993)

<sup>34</sup> Andrew R. Klein, *A Model for Enhanced Risk Recovery in Tort*, 56 WASH. & LEE L. REV. 1173, 1179 (1999).

<sup>35</sup> See, e.g., *Donovan v. Philip Morris USA, Inc.*, 914 N.E.2d 891 (Mass. 2009).

<sup>36</sup> INTERAGENCY WORKING GROUP ON SOCIAL COST OF CARBON, APPENDIX 15A, SOCIAL COST OF CARBON FOR REGULATORY IMPACT UNDER EXECUTIVE ORDER 12,866, in U.S. DEPARTMENT OF ENERGY, FINAL RULE TECHNICAL SUPPORT DOCUMENT (TSD): ENERGY EFFICIENCY PROGRAM FOR COMMERCIAL AND INDUSTRIAL EQUIPMENT: SMALL ELECTRIC MOTORS (2010), available at [http://www1.eere.energy.gov/buildings/appliance\\_standards/commercial/pdfs/smallmotors\\_tsd/sem\\_finalrule\\_appendix\\_15a.pdf](http://www1.eere.energy.gov/buildings/appliance_standards/commercial/pdfs/smallmotors_tsd/sem_finalrule_appendix_15a.pdf) [henceforth “Working Group Report”].

<sup>37</sup> Exec. Order No. 12,291, 3 C.F.R. 127 (1982); see also Exec. Order No. 12,866, 3 C.F.R. 638 (1994).

<sup>38</sup> The Department of Transportation assigned a “domestic” SCC value of \$2 per ton and a “global” value of \$33 per ton in 2011 CAFE rule. Previously, DOT has assumed a domestic SCC value of \$7 per ton. The Department of Energy assigned a range of SCC values from \$0-\$20 per ton in a 2008 regulation of air conditioners, but then failed to include the estimate in its cost-benefit analysis. Such disjointed analysis was the norm.

<sup>39</sup> Working Group Report, *supra* note 36, at 4.

<sup>40</sup> All dollar figures in this article are in constant 2007 dollars.

<sup>41</sup> Douglas A. Kysar, *Politics By Other Means: A Comment on “Retaking Rationality Two Years Later”*, 48 HOUS. L. REV. 43, 57 (2011).

<sup>42</sup> Working Group Report, *supra* note 36, at 6. The Working Group relied on the DICE, PAGE and FUND models.

<sup>43</sup> *Id.*

<sup>44</sup> *Id.* at 18-24. The Working Group explained its reliance on these discount rates at length.

<sup>45</sup> *Id.* at 3.

<sup>46</sup> This is the traditional rate recommended for use by OMB.

<sup>47</sup> Working Group Report, *supra* note 36, at 3.

<sup>48</sup> *Id.* at 40-41.

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<sup>49</sup> Jonathan S. Masur and Eric A. Posner, *Climate Regulation and the Limits of Cost-Benefit Analysis*, 99 CAL. L. REV. 1557 (2011).

<sup>50</sup> *Id.* at 1582.

<sup>51</sup> *Id.* at 1583. The authors caution that it “seems likely that one of the three models is simply incorrect and is skewing the overall results improperly.”

<sup>52</sup> Ruth Greenspan Bell and Dianne Callan, *More than Meets the Eye: The Social Cost of Carbon in U.S. Climate Policy, in Plain English*, ENVIRONMENTAL LAW INSTITUTE 11, 25 (July 2011), available at <http://www.wri.org/publication/more-than-meets-the-eye-social-cost-of-carbon>.

<sup>53</sup> Frank Ackerman and Elizabeth Stanton, *Climate Risks and Carbon Prices: Revising the Social Cost of Carbon*, ECONOMICS FOR EQUITY AND THE ENVIRONMENT NETWORK (2011), available at [http://www.e3network.org/social\\_cost\\_carbon.html](http://www.e3network.org/social_cost_carbon.html).

<sup>54</sup> The Stern Review employed a lower discount rate and found the central SCC value to be \$85 per ton. See NICHOLAS STERN, THE ECONOMICS OF CLIMATE CHANGE XIV, 287 (2007). The United Kingdom relies on SCC projections ranging from \$41 to \$124 per metric ton. See R. Clarkson and K. Deyes, *Estimating the Social Cost of Carbon Emissions* 41 (Govt. Econ. Serv. Working Paper 140, Jan. 2002).

<sup>55</sup> See, e.g., David Pearce, *The Social Cost of Carbon and its Policy Implications*, 19 OXFORD REV. ECON. POL’Y 362 (2003); Jody Freeman and Andrew Guzman, *Climate Change and U.S. Interests*, 109 COLUM. L. REV. 1531, 1595 (2009); *supra* notes 49 and 52.

<sup>56</sup> *Supra* note 13.

<sup>57</sup> *Supra* note 14.

<sup>58</sup> 405 U.S. 727 (1972).

<sup>59</sup> See Robert V. Percival, *Environmental Law in the Supreme Court: Highlights from the Blackmun Papers*, 35 ENVTL. L. REP. 10637, 10657 (2005).