



UNC
SCHOOL OF LAW

University of North Carolina School of Law
Carolina Law Scholarship
Repository

Faculty Publications

Faculty Scholarship

2014

Insurance at the Energy-Water Nexus

Donald Thomas Hornstein

University of North Carolina School of Law, dhornste@email.unc.edu

Follow this and additional works at: http://scholarship.law.unc.edu/faculty_publications



Part of the [Law Commons](#)

Publication: *University of Richmond Law Review*

This Article is brought to you for free and open access by the Faculty Scholarship at Carolina Law Scholarship Repository. It has been accepted for inclusion in Faculty Publications by an authorized administrator of Carolina Law Scholarship Repository. For more information, please contact law_repository@unc.edu.

ESSAYS

INSURANCE AT THE ENERGY-WATER NEXUS

Donald T. Hornstein *

INTRODUCTION

As the outstanding contributions to this symposium demonstrate, the on-the-ground connections between water and energy are pervasive, multidimensional, and sobering. And, at the legal nexus between water and energy, the symposium's contributors generally hint at some mix of land-use controls, common-law liability, or regulation to help mediate the challenges. Yet precisely because the challenges are so sobering, perhaps an even broader range of social institutions and solutions ought to be considered. In this essay, I offer some observations of the role that insurance may play at the energy-water nexus.

In so doing, this essay reflects a vantage point familiar to those who follow the insurance-as-society¹ or insurance-as-governance² literatures. The premise of this body of work is that the institu-

* Aubrey L. Brooks Professor of Law, University of North Carolina School of Law. Even though my experience with insurance and weather comes partly from my role as an appointed public member of the North Carolina Wind Pool, a \$400 million insurance facility, the views expressed in this essay do not in any way reflect the views of the Wind Pool or even my own views when operating as a member of the Wind Pool's Board of Directors.

1. See, e.g., Deborah Stone, *Beyond Moral Hazard: Insurance as Moral Opportunity*, in *EMBRACING RISK: THE CHANGING CULTURE OF INSURANCE AND RESPONSIBILITY* 52, 54 (Tom Baker & Jonathan Simon eds., 2002) (describing insurance as a social system of linking oneself to the risks of harm faced by others); Jeffrey W. Stempel, *The Insurance Policy as Social Instrument and Social Institution*, 51 *WM. & MARY L. REV.* 1489, 1498–1500 (2010) (describing the widespread need for insurance as a precondition for engaging in a wide array of social and economic activities).

2. See, e.g., RICHARD V. ERICSON ET AL., *INSURANCE AS GOVERNANCE* 47–49 (2003) (describing insurance as, among other things, a system to classify, allocate, and manage risk).

tion of insurance operates to embed individuals into social pools of similarly situated insureds, thereby reinforcing various types of social norms, and to incentivize certain actions, thereby regulating the behavior of insureds. Under this conception, insurance slips the bridle of a mere bilateral contract between insured and insurer, and “functions like government by influencing policyholders’ conduct and protecting them against misfortune.”³

I. THE INSURANCE-ENERGY NEXUS: LIABILITY INSURANCE

For many, hydraulic fracturing (“fracking”) is near the epicenter of the energy-water debate. In part, this is due to the novel risks of water contamination by fracking fluids,⁴ to the contamination of water wells with methane,⁵ and to dangers to water supplies from fracking fluid waste treatment via underground injection wells or surface sewage treatment facilities.⁶ And, in part, the salience of fracking to the energy-water nexus comes from the speed with which hydraulic fracturing has spread across the United States, especially for the production of natural gas. Due to fracking, natural gas production in the United States has increased by 25% since 2008.⁷

To some extent, reliance on insurance-as-governance as to fracking stems from the scattered and fragile regulatory apparatus that has, in recent years, tried to keep up with developments on the ground. As Columbia law professors Thomas Merrill and Dean David Schizer conclude in their recent survey of the regulatory environment, “[g]iven the traditional primacy of states in oil and gas regulation, federal law has little to say about fracturing,”⁸ and, as to state and local government regulation, “[s]ince

3. Kenneth S. Abraham, *Four Conceptions of Insurance*, 161 U. PA. L. REV. 653, 684 (2013).

4. See Thomas W. Merrill & David M. Schizer, *The Shale Oil and Gas Revolution, Hydraulic Fracturing, and Water Contamination: A Regulatory Strategy*, 98 MINN. L. REV. 145, 180–92 (2013) (discussing migration of fracking fluid through subsurface creeks, surface spills, risks due to the surface storage of flow-back and produced water, risks to groundwater from leakage of frack fluids through cracked well casings, and blowouts).

5. *Id.* at 192–93.

6. *Id.* at 195–96.

7. *Id.* at 154 (citing 1 IHS GLOBAL INSIGHT, AMERICA’S NEW ENERGY FUTURE: THE UNCONVENTIONAL OIL AND GAS REVOLUTION AND THE US ECONOMY 3 (2012), available at http://www.energyxxi.org/sites/default/files/pdf/americas_new_energy_future-unconventional_oil_and_gas.pdf).

8. *Id.* at 200. In addition, Merrill and Schizer note that fracking-related wastes enjoy exemptions from the federal Resource Conservation and Recovery Act, the Safe Drinking

fracturing [is] . . . [a] relatively new practice[], it is not surprising that regulatory regimes governing [it] are not fully developed.”⁹

Precisely because of the still-emerging, chaotic regulatory environment, not to mention such common regulatory pathologies as incomplete information and capture, law professors David Dana and Hannah Wiseman take a page from the insurance-as-governance playbook and call for increased use of insurance as a “market-based” approach to hydraulic fracturing.¹⁰ They argue that:

[Where regulatory regimes] are constrained by possible “capture” and insufficient enforcement resources, insurance can help fill in the monitoring and enforcement gap by bringing to bear another regulatory force—private insurance companies—that cannot be captured in the way legislators or agencies can be and that are not constrained by the pathologies of the budgetary appropriations processes.¹¹

To guard against adverse selection in their proposed regime—the danger that only high-risk fracking companies would obtain the requisite liability/remediation insurance—Dana and Wiseman propose that government compel all companies with fracking-related operations to purchase the insurance.¹²

How should one approach the Dana/Wiseman proposal? To begin, one needs to consider the risks of moral hazard in any insurance-as-regulation regime—the danger that insureds will actually *increase* risky behavior precisely because they have insurance.¹³ There are a variety of design features that insurers use to counteract moral hazard: deductibles and co-payments so that insureds have first-dollar “skin in the game,” exclusions of particularly risky or intentional behavior, and overall maximum dollar

Water Act, and the Emergency Planning and Community Right-to-Know Act. *Id.* at 200–01.

9. *Id.* at 197.

10. See David A. Dana & Hannah J. Wiseman, *A Market Approach to Regulating the Energy Revolution: Assurance Bonds, Insurance, and the Certain and Uncertain Risks of Hydraulic Fracturing*, 99 IOWA L. REV. (forthcoming 2014) (manuscript at 3, 10), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2353061.

11. *Id.* at 21.

12. *Id.* at 35.

13. See, e.g., Tom Baker, *On the Genealogy of Moral Hazard*, 75 TEX. L. REV. 237, 241–44 (1996) (discussing the development of the “moral hazard” concept); Steven Shavell, *On Moral Hazard and Insurance*, 93 Q.J. ECON. 541, 541–42 (1979) (discussing the tendency of insurance protection to change a person’s motive to prevent loss); cf. Kenneth J. Arrow, *Uncertainty and the Welfare Economics of Medical Care*, 53 AM. ECON. REV. 941, 961 (1963) (discussing the effects of medical insurance on incentives).

limits on an insurer's duty to indemnify. Properly designed, the goal is for insurance to institutionalize loss prevention by insureds by incentivizing risk-reduction behavior via premium price differentiation and the ability to demand written representations by insureds of risk-reduction commitments and procedures. Based on design features such as these, Dana and Wiseman state: "Insurers' are thus 'strategically well placed to gather information and engage in risk management, and reflect these costs through premium differentiation."¹⁴

But this is not to say that liability insurance always delivers risk reduction in practice. In a recent study on the risk-reduction achievements of directors' & officers' ("D&O") liability insurance, Tom Baker and Sean Griffith are decidedly lukewarm, if not outright critical:

Do insurers offer loss prevention services to their corporate insureds? And, relatedly, do insurers monitor the corporate governance of their insureds? We found that the answer to both of these questions was: they do not. The participants in our study unanimously reported that D&O insurers do not offer real loss prevention services or otherwise monitor corporate governance.¹⁵

On the other hand, Dana and Wiseman report on a much more hopeful study, by Haitao Yin, Howard Kunreuther, and Matthew White, finding a "dramatic decline in leaks from underground fuel tanks . . . when gas stations were required to carry private clean-up and liability insurance."¹⁶ That study found that "the price structure for market-based insurance gives [gas] tank owners economic incentives to invest in equipment that reduces the chance of accidental fuel tank leaks."¹⁷ The results of these two studies are not necessarily in conflict, as the D&O study focused on the effects of insurance-induced monitoring while the gas station study focused on the effects of insurance price differentiation.¹⁸

14. Dana & Wiseman, *supra* note 10, at 37 (quoting BENJAMIN J. RICHARDSON, ENVIRONMENTAL REGULATION THROUGH FINANCIAL ORGANISATIONS: COMPARATIVE PERSPECTIVES ON THE INDUSTRIALISED NATIONS 363 (2002)).

15. Tom Baker & Sean J. Griffith, *The Missing Monitor in Corporate Governance: The Directors' & Officers' Liability Insurer*, 95 GEO. L.J. 1795, 1798–99 (2007).

16. Dana & Wiseman, *supra* note 10, at 38 (citing Haitao Yin et al., *Does Private Insurance Reduce Environmental Accidents?*, REGULATION, Summer 2012, at 36, 37, available at <http://object.cato.org/sites/cato.org/files/serials/files/regulation/2012/8/v35n2-5.pdf>).

17. Haitao Yin et al., *supra* note 16, at 37.

18. Yet Baker and Griffith also reported in another article on the risk-reduction bene-

Thus, perhaps the best one can say as to hydraulic fracturing, at least as a matter of theory, is that it is possible, even if not assured, that a system of mandatory liability insurance may add value to the regulatory regimes that are emerging at the energy-water nexus. That said, as a matter of practice, the current role of liability insurance in hydraulic fracturing is highly uncertain. To begin, unlike the recommendation made by Dana and Wiseman, only one state currently mandates the purchase of liability insurance for those engaged in fracking.¹⁹ And the extent of voluntary insurance penetration among drillers is not entirely clear. The Center for Insurance Policy and Research, of the National Association of Insurance Commissioners, reports that, “[m]ost drilling companies carry commercial general liability insurance (CGL), which protects them against third-party bodily injury and property damage claims.”²⁰ Yet, even aside from questions of coverage in the standard CGL policy, at least one industry risk-management newsletter refers to “hundreds of small companies active in shale gas production with typically minimal pollution liability coverage” and the use of “site-specific LLC/LLP corporations that are dissolved after operations are completed.”²¹ On the supply side, at least one major insurer, Nationwide Insurance Company, announced in 2012, “[a]fter months of research and discussion, we have determined that the exposures presented by hydraulic fracturing are too great to ignore. . . . [and] are now prohibited for [Nationwide CGL and other Nationwide policies].”²² And, although not directly affecting the availability of primary coverage,

fits of D&O price differentiation and found that, although D&O insurers did attempt to price on the basis of risk, “the highly discretionary nature of the D&O insurance underwriting process and the competitive pressures of the insurance underwriting cycle limit the ability of corporate and securities law deterrence objectives to be fully reflected in the pricing of D&O insurance.” Baker & Griffith, *supra* note 15, at 1798 (citing Tom Baker & Sean J. Griffith, *Predicting Corporate Governance Risk: Evidence from the Directors’ & Officers’ Liability Insurance Market*, 74 U. CHI. L. REV. 487, 487–89 (2007)).

19. Dana & Wiseman, *supra* note 10, at 56 (citations omitted) (“However, only one state (Maryland) and no major unconventional oil and gas state has yet enacted a mandatory insurance requirement.”).

20. Ctr. for Ins. Policy & Research, *Hydraulic Fracturing*, NAT’L ASS’N OF INS. COMMISSIONERS, http://www.naic.org/cipr_topics/topic_hydraulic_fracturing.htm (last updated Jan. 15, 2014).

21. Bhavini Kamarshi et al., *Fracking: Considerations for Risk Management and Financing*, MILLIMAN (June 21, 2012), <http://www.milliman.com/insight/insurance/Fracking-Considerations-for-risk-management-and-financing/>.

22. Mary Esch, *Nationwide Insurance: Fracking Damage Won’t Be Covered*, HUFFINGTON POST (July 12, 2012, 7:04 PM), http://www.huffingtonpost.com/2012/07/13/nationwide-insurance-fracking_n_1669775.html.

“[s]ome major global reinsurers . . . remain unwilling to take on fracking and well drilling risks in shale plays until operating, regulatory, and legal liability issues become clearer.”²³

Yet even assuming that the basic CGL policy is available and purchased by companies involved in fracking, it is hardly clear that the basic coverage suffices to support strong risk-management practices by drillers. Largely, this is because the basic CGL policy contains a “pollution exclusion” clause.²⁴ And, as one insurance-industry white paper states: “Pollution and contamination exclusions afford a strong basis to preclude coverage for claimed environmental damage related to fracking since exclusions are unambiguous and enforceable in most circumstances.”²⁵

An endorsement that adds liability coverage for fracking operations, known as Environmental Impairment Liability (“EIL”) coverage, is sometimes available.²⁶ But as another insurance-industry consultant states: “While a dozen or more large insurers will write EIL coverage for energy companies generally, only five or six will write . . . for well owners or contractors with significant fracking operations.”²⁷ Although by one estimate 30% to 40% of the industry purchases EIL policies,²⁸ “many decide against spending the money and rely instead on [CGL] policies.”²⁹ Needless to say, a market-based regime based on liability insurance in the fracking industry is only as effective as the market penetration of meaningful liability insurance in the first place.

Before leaving the topic of liability insurance, however, consid-

23. Peter Behr, *Hydraulic Fracturing: Insurance Issues Loom over Shale Gas Development*, E&E NEWS: ENERGYWIRE (Aug. 1, 2013), <http://www.eenews.net/stories/1059985449>.

24. See JONATHAN L.S. HODES, POLLUTION EXCLUSION CLAUSES IN THE CGL POLICY: CURRENT ISSUES IN COVERAGE LITIGATION 1 (2009), available at <http://www.cwilson.com/publications/insurance/pollution-exclusion-clauses.pdf>.

25. NELSON LEVINE DE LUCA & HAMILTON, THE FUSS OVER FRACKING: AN EXAMINATION OF THE INSURANCE ISSUES ASSOCIATED WITH HYDRO-FRACKING 22 (2013), <http://www.nldhlaw.com/content/uploads/2013/08/The-Fuss-Over-Fracking.pdf>.

26. Braden Reddall & Ben Berkowitz, *Analysis: Insurers Find It Tough to Price Fracking Risk*, REUTERS (May 11, 2012, 3:08 PM), <http://www.reuters.com/article/2012/05/11/us-fracking-insurance-idUSBRE84A13R20120511>.

27. Douglas McLeod, *Insurance Coverage Options for Fracking Risks Are Limited*, BUS. INS., (Feb. 24, 2013, 6:00 PM), <http://www.businessinsurance.com/article/20130224/NEWS07/302249991?tags=69|310|76|303>.

28. *Id.*

29. *Id.* (quoting Mike Schneider, president of Cravens Warren & Co., an insurance-industry advising firm).

er briefly the converse of an insurance-as-regulation approach—the extent to which the *absence* of liability insurance might send a proper market signal that improves the energy-water nexus. In doing so, consider the much wider connection between energy and water: that emissions of greenhouse gases from fossil-fuel-powered electricity plants affect the climate with profound water-related consequences.³⁰ Alleging just such a connection, the Inupiat Native Alaskans in the village of Kivalina sued the AES Corporation (“AES”), a Virginia-based energy company, alleging that emissions from AES’s fossil-fuel-based plants had contributed to climate change that melted the sea ice adjacent to their coastal Alaskan town, leaving it vulnerable to significant erosion from ocean storm surges.³¹ As a matter of substantive environmental law, the case has caused its own surge of commentary.³² But, much less noticed is the insurance-law dispute that arose in the shadow of this litigation.

Upon being sued, AES asked its Virginia-based liability insurer, Steadfast Insurance Co., to provide a defense.³³ After first filing a reservation of rights, Steadfast provided a defense, but then brought a declaratory judgment action claiming that “it did not owe AES a defense or indemnity coverage” under the policy.³⁴ Among the reasons given by the insurer was that the CGL policies only covered “occurrences,” defined as involving, “an accident, including continuous or repeated exposure to substantially the same general harmful condition.”³⁵ The insurer argued that a

30. See, e.g., Lenny Bernstein et al., *Synthesis Report*, in CLIMATE CHANGE 2007: CONTRIBUTION OF WORKING GROUPS I, II, AND III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 49, 50 (2007).

31. See *Native Village of Kivalina v. ExxonMobil Corp.*, 663 F. Supp. 2d 863, 868 (N.D. Cal. 2009).

32. See, e.g., Ashley E. Breakfield, Note, *Political Cases or Political Questions: The Justiciability of Public Nuisance Climate Change Legislation and the Impact on Native Village of Kivalina v. ExxonMobil*, 17 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 39, 61 (2011) (suggesting that the Ninth Circuit should reverse the district court’s decisions in *Kivalina*); Nicole Johnson, In Brief, *Native Village of Kivalina v. ExxonMobil Corp: Say Goodbye to Federal Public Nuisance Claims for Greenhouse Emissions*, 40 ECOLOGY L.Q. 557, 558 (2013) (arguing that federal common law public nuisance claims for greenhouse gas emissions are no longer a viable avenue for seeking relief); Samantha Lawson, Note, *The Conundrum of Climate Change Causation: Using Market Share Liability to Satisfy the Identification Requirement in Native Village of Kivalina v. ExxonMobil Co.*, 22 FORDHAM ENVTL. L. REV. 433, 492 (2011) (suggesting that market share liability is appropriate for satisfying the identification requirement of causation in *Kivalina*).

33. *AES Corp. v. Steadfast Ins. Co.*, 725 S.E.2d 532, 533 (Va. 2012).

34. *Id.*

35. *Id.* at 534 (internal quotation marks omitted).

power plant's burning of greenhouse-gas-emitting fossil fuels was not an "occurrence," and hence the insured's liability for any resulting damages was excluded from coverage.³⁶ The Supreme Court of Virginia agreed, and held that the standard CGL policy would not consider the intentional burning of fossil fuels to be an "accident" that constituted an "occurrence" for which CGL policies provide coverage.³⁷

As a matter of insurance-law doctrine, *AES v. Steadfast* is hardly assured of being followed. It is one thing to state that an insured intends to release greenhouse gases into the atmosphere, and even to attribute to the insured the knowledge that greenhouse gases play some role in global warming and climate change, but something else to attribute to a Virginia-based fossil-fuel-plant operator either the knowledge or intention to cause coastal erosion and flooding in a Native Alaskan village two-thousand miles away. Whatever may be the challenges of the underlying tort claims of plaintiffs bringing lawsuits against insured energy generators (particularly as to the proximate-cause element),³⁸ it has long been traditional insurance-law doctrine that the determination of whether a loss results from an "accident" is determined "from the point of view of the insured, whether the loss was unexpected, unusual and unforeseen."³⁹ Thus, as Douglas DeBaugh insightfully observes: "[T]he [*AES v. Steadfast*] court seems to make a critical (and perhaps liberal) inferential jump from an anticipated and probable increase in greenhouse gas in the atmosphere to . . . [an insured's expectation of] erosion experienced by [the] Kivalina plaintiffs."⁴⁰ Perhaps for this rea-

36. *See id.* at 533.

37. *Id.* at 538.

38. *See, e.g.*, 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, 601 (2011) (indicating that climate change plaintiffs may have difficulty meeting the proximate cause element). *But see* Ken Alex, *A Period of Consequences: Global Warming as Public Nuisance*, 26A STAN. ENVTL. L.J. 77, 94 n.88 (2007) (citing *Holmes v. Sec. Investor Prot. Corp.*, 503 U.S. 258, 268 (1992)) (suggesting that proximate cause reflects what justice demands).

39. *Siagha v. Nat'l Fire Ins. Co. of Pittsburgh*, 762 N.Y.S.2d 46, 47–48 (App. Div. 2003) (emphasis omitted) (citations omitted); *see, e.g.*, *Nat'l Union Fire Ins. Co. of Pittsburgh v. Terra Indus., Inc.*, 216 F. Supp. 2d 899, 919 (N.D. Iowa 2002) ("[W]here the insured neither intended nor expected . . . the damage, [there] was an 'occurrence.'"); *Gibson v. Farm Family Mut. Ins. Co.*, 673 A.2d 1350, 1353 (Me. 1996) (noting that an "occurrence" can follow even from an insured's intentional act because the subsequent consequence could be unintentional despite the act being intentional).

40. Douglas J. DeBaugh, Note, *Marching Toward a Day of Reckoning: Dissecting the Complex Intersection of Insurance Law and Climate Change Litigation Through AES Corp.*

son, Justice Mims states in his concurrence in *AES v. Steadfast*: “Our jurisprudence . . . is leading inexorably to a day of reckoning that may surprise many policy holders [in Virginia].”⁴¹

As a matter of the insurance-energy nexus and the concept of insurance-as-governance, the implications of *AES* are even more significant. If widely followed, *AES* would insulate the entire liability-insurance industry from any financial responsibility for the climate-changing behavior of its insureds. From the standpoint of insureds, the “naked” liability they would face could be enormous. Nicholas Stern, the British economist, predicts that extreme weather alone could cause losses approaching 0.5–1% of global GDP by 2050.⁴² Potential losses have been estimated in the \$850 billion to \$1.3 trillion range.⁴³ And from the standpoint of insurance-as-governance, without responsibility for these losses, liability insurers would have little reason institutionally to develop climate-risk-reduction incentives for insureds.

II. THE INSURANCE-ENERGY NEXUS: FIRST PARTY PROPERTY INSURANCE

In fact, the claim that private third-party liability insurers would play a leading role in climate-change policy has never been certain. On the one hand, as the world’s largest industry, with \$3.2 trillion in annual revenue,⁴⁴ the insurance industry has been described as the world’s foremost “global integrator” of climate-related impacts.⁴⁵ Yet, on the other hand, even before *AES v. Steadfast*, the actual exposure of liability insurers for the climate-change-causing conduct of their insureds has never been large.⁴⁶

v. *Steadfast Ins. Co.*, 91 N.C. L. REV. (ADDENDUM) 95, 112 (2013).

41. 725 S.E.2d at 538 (Mims, J., concurring).

42. See DeBaugh, *supra* note 40, at 98 (citing NICHOLAS STERN, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE viii (2006)).

43. *Id.* at 98 (citing Anastasia Telesetsky, *Insurance as a Mitigation Mechanism: Managing International Greenhouse Gas Emissions Through Nationwide Mandatory Climate Change Catastrophe Insurance*, 27 PACE ENVTL. L. REV. 691, 696 (2010)).

44. See Evan Mills, *Insurance in a Climate of Change*, 309 SCI. 1040, 1040 (2005) (“As the world’s largest industry [[the insurance industry] would be the third largest country if its \$3.2 trillion in yearly revenues were compared with national gross domestic products (GDPs)] . . .”).

45. *Id.* (endnote omitted) (“The insurance sector is a lightning rod, serving as global integrator of impacts across all sectors of the economy, and messenger of these impacts through the terms and price signals it projects to its customers.”).

46. Cf. David Hunter & James Salzman, *Negligence in the Air: The Duty of Care in Climate Change Litigation*, 155 U. PA. L. REV. 1741, 1744 (2007) (“We are aware of four

Rather, many of the climate-related losses shouldered by insurers have come from first-party insurance, such as from homeowners' and other forms of property coverage.⁴⁷

That said, the actual exposure of first-party insurers to climate-related risks is at best described as a work in progress and at worst understood as a game of musical chairs in which property insurers make sure that they are *not* left standing when the music stops. Since 1968, private first-party homeowners insurance has included a standard exclusion for "any loss" from "flood, surface water, waves, tidal waves, overflow of a body of water, [and] spray from these, whether or not driven by wind."⁴⁸ Insurers have done this not only because flooding is a correlated risk, the costs of which are more difficult to spread among a pool of insureds than randomized individual risks, but also because of the adverse-selection risks of a market for flood insurance drawn primarily from those who feel themselves most likely to be flooded.⁴⁹ Instead, since 1968, the federal government has been forced to provide flood insurance through the National Flood Insurance Program ("NFIP"), a role it undertook partly as a way to reduce the federal government's growing outlays for disaster assistance.⁵⁰ Technically, that leaves the standard (private) homeowners policy to cover losses due to "wind," including wind-caused losses from extreme weather, but other provisions in most of these policies draw arcane distinctions about causation that lead to perennial "wind versus water" litigation in the wake of most extreme

[climate tort actions against private parties], but observers . . . expect the number to increase significantly.").

47. *E.g.*, Christina Ross, Evan Mills & Sean B. Hecht, *Limiting Liability in the Greenhouse: Insurance Risk-Management Strategies in the Context of Global Climate Change*, 26A STAN. ENVTL. L.J. 251, 277 (2007) ("[A] major portion of the \$20.8 billion in total insured commercial losses from Hurricane Katrina were due to business interruptions.").

48. *See, e.g.*, Leonard v. Nationwide Mut. Ins. Co., 438 F. Supp. 2d 684, 689 (S.D. Miss. 2006); *cf.* Jay S. Goldbaum, *Katrina and Beyond: Judicial Treatment of Boilerplate Language in Standardized Insurance Contracts*, 2007 MICH. ST. L. REV. 453, 476-77 (2007).

49. *See, e.g.*, Adam F. Scales, *A Nation of Policyholders: Governmental and Market Failure in Flood Insurance*, 26 MISS. C. L. REV. 3, 7 (2006) ("[Flood insurance] suffers from unusual demand- and supply-side constraints that make it a relatively difficult market for insurers, and they have responded rationally by avoiding it.").

50. *Id.* at 12 ("NFIP-backed insurance was conceived of as a way of inducing communities to adopt flood mitigation policies that the federal government . . . could not compel."); *see also* Sandra Leon & Sandy Lubin, *FEMA: Federal Disaster Relief*, 17 GEN. PRAC., SOLO & SMALL FIRM DIV. MAG. (American Bar Association), July-Aug. 2000, at 7 (communities that do not participate in NFIP are ineligible to participate in several of FEMA's disaster-assistance programs).

weather events, such as hurricanes, in which both wind and flooding occur.⁵¹

Even more to the point, in recent years private insurers have increasingly been abandoning coverage for wind losses just as they abandoned the market for flood insurance during the 1960s.⁵² Generally, they do this because state insurance regulators do not approve sufficient “rate” to make full coverage of wind losses profitable.⁵³ Those insurers who do not leave the market altogether, offer instead “hollowed out” coverage: reducing the areas where they remain willing to offer coverage, reducing the maximum amounts of coverage they are prepared to offer, and, as to whatever insurance that is placed, forcing insureds to bear more of the wind-related risks of storms through higher deductibles and co-insurance.⁵⁴ Increasingly, in place of private wind coverage, insureds rely on state-run wind pools; entities that bear a conceptual similarity to the governmental insurance offered for flood via the NFIP. Unlike the NFIP, however, state wind pools “typically reflect the structure of residual high-risk insurance entities in which the state conditions the right to sell insurance within the state with forced participation” in catastrophic wind coverage.⁵⁵ In short, except to the extent they are forced to participate in such wind pools, increasingly Nationwide is no longer on

51. See, e.g., Donald T. Hornstein, *The Balkanization of CAT Property Insurance: Financing and Fragmentation in Storm Risks*, 11 RUTGERS J.L. & PUB. POL’Y 9, 17–21 (2013) (describing litigation under so-called “anti-concurrent-cause” clauses).

52. *Id.* at 23.

53. See *id.* at 26. For example, “[in] 2008, coastal homeowners’ coverage in North Carolina became a public policy issue when Farmers Insurance decided to withdraw from property insurance statewide rather than participate in what it believed to be a system of actuarially unfair rates.” *Id.* at 26 n.92; see Brian H. Kern, *Farmers Insurance to Pull Out of North Carolina Homeowners’ Market*, INS. J. (Aug. 14, 2008), <http://www.insurancejournal.com/news/southeast/2008/08/14/92787.htm>. Similarly, in 2011, the North Carolina Farm Bureau Insurance Co. significantly reduced its dwelling policy coverage at the coast, again because of what it believed to be insufficient rates. See Michael Adams, *North Carolina Farm Bureau to Raise Homeowners’ Rates, Drop Policies*, INS. J. (Feb. 27, 2012), <http://www.insurancejournal.com/news/southeast/2012/02/27/237291.htm>.

54. See J. ROBERT HUNTER, CONSUMER FED’N OF AM., *THE INSURANCE INDUSTRY’S INCREDIBLE DISAPPEARING WEATHER CATASTROPHE RISK: HOW INSURERS HAVE SHIFTED RISK AND COSTS ASSOCIATED WITH WEATHER CATASTROPHES TO CONSUMERS AND TAXPAYERS* 4–5 (Feb. 17, 2012), available at <http://www.consumerfed.org/pdfs/InsuranceRegulationHurricaneRiskDisappearingCoverageStudy2-12.pdf>; see also Hornstein, *supra* note 51, at 26 n.92. For example, Allstate, which dropped approximately 320,000 policies in Florida since 2004, is no longer offering any private homeowners coverage in the state. *Id.* When four hurricanes hit Florida in 2004, even those who *had* insurance bore between 15% and 20% of the financial losses. *Id.* at 26.

55. Hornstein, *supra* note 51, at 51.

your side, Allstate has withdrawn its good hands, and State Farm, unlike a good neighbor, is not there.

The result is that, although the first-party (property) insurance industry regularly refers to the growing cost of covering weather-related catastrophes, it has taken measures to shift that loss to others.⁵⁶ Thus, the NFIP, which until recently often offered coverage at subsidized, below-cost rates, has since 2006 been forced to borrow over \$30 billion from the U.S. Treasury to cover costs.⁵⁷ Since 1989, Congress has been forced to enact over \$410 billion in catastrophe-related emergency supplemental appropriations.⁵⁸ Aggregating what it terms “climate disruption costs,” the Natural Resources Defense Council recently concluded that United States taxpayers outspend private insurers three-to-one to cover such costs.⁵⁹

Ironically, it is against this background of fading insurance coverage, at least as to private catastrophe coverage, that we may be on the verge of a natural experiment of the insurance-as-governance hypothesis. This is because Congress, in summer 2012, enacted the Biggert-Waters Flood Insurance Reform Act of 2012 (“Biggert-Waters”),⁶⁰ the most significant revision of the NFIP in a generation.⁶¹ Supported by a mix of balanced-budget-minded conservatives and environmentally-minded progressives, Biggert-Waters sought to eliminate price subsidies for flood insurance.⁶² It did this by requiring actuarially fair rates for all newly purchased properties⁶³ and by phasing out subsidies for second homes, business properties, severe repetitive-loss proper-

56. See, e.g., HUNTER, *supra* note 54, at 1.

57. See DANIEL LASHOF & ANDY STEVENSON, NATURAL RES. DEF. COUNCIL, NRDC ISSUE PAPER IP:13-05A, WHO PAYS FOR CLIMATE CHANGE? 8 (2013), available at <http://www.nrdc.org/globalwarming/files/taxpayer-climate-costs-IP.pdf>.

58. *Id.* at 6 (footnote omitted) (“Since 1989, Congress has passed emergency supplemental appropriations totaling in excess of \$410 billion in 2012 dollars, with more than \$140 billion authorized over the past 10 years alone, largely due to the 2005 hurricane season (\$55.9 billion) and Hurricane Sandy (\$50.7 billion).”).

59. *Id.* at 3 (noting that of the \$139 billion in climate-related damages in the United States in 2012, private insurers covered only about 25% (\$33 billion) of these costs).

60. Biggert-Waters Flood Insurance Reform Act of 2012, Pub. L. No. 112-141, 126 Stat. 916 (codified as amended at 42 U.S.C. §§ 4001–4129 (2006 & Supp. V 2012)).

61. See, e.g., Eli Lehrer, *Strange Bedfellows: SmarterSafer.org and the Biggert-Waters Act of 2012*, 23 DUKE ENVTL. L. & POL’Y F. 351, 352 (2013) (footnote omitted) (“The Biggert-Waters Act may well be the largest revamping of the flood insurance program since its origin in 1968.”).

62. *Id.* at 351, 353.

63. § 100205(a)(1)(B), 126 Stat. at 917 (to be codified at 42 U.S.C. § 4014(g)).

ties, and homes substantially rebuilt after losses.⁶⁴ Rates for primary residences that had been based on risks of flooding from maps prepared by the Federal Emergency Management Agency (“FEMA”), and that had previously been “grandfathered” even when FEMA’s newer maps revealed increased flooding risks, were to increase by 20% annually until their rates reflected the actuarial risk.⁶⁵ And FEMA was allocated \$400 million annually to increase its flood-mapping capacity, with Biggert-Waters requiring FEMA to produce or revise flood maps, using the “most accurate topography and elevation data” for all areas within 100-year and 500-year floodplains.⁶⁶

In the fifteen months following its enactment in July 2012, Biggert-Waters became strong evidence of the insurance-as-governance hypothesis, and of the idea that, to use the phrase coined by Professor Adam Scales, the United States electorate had become “a nation of policyholders” as much as it was a nation of citizens.⁶⁷ On October 29, 2012, the East Coast was hit by Superstorm Sandy, the strongest storm of the 2012 hurricane season and the second-worst storm, in terms of financial loss, in American history.⁶⁸ FEMA, unable to cover flood losses with its then-underfinanced NFIP revenue base, was forced to request over \$50 billion in supplemental appropriations from Congress; a request that prompted resistance from budget-minded conservatives and renewed agreement that Congress had wisely passed Biggert-Waters to shore up NFIP finances.⁶⁹ Yet, especially in the

64. § 100205(a)(1)(A), 126 Stat. at 917 (to be codified at 42 U.S.C. § 4014(a)(2)) (elimination of special subsidies); *see also* § 100205(c)(3), 126 Stat. at 918–19 (to be codified at 42 U.S.C. § 4015(e)(2)) (specified rate-increase provisions).

65. § 100207, 126 Stat. at 919 (to be codified at 42 U.S.C. § 4015(h)) (“Any increase in the risk premium rate charged for flood insurance on any property that is covered by a flood insurance policy on the effective date of such an update that is a result of such updating shall be phased in over a 5-year period, at the rate of 20 percent for each year following such effective date.”).

66. § 100216(b), 126 Stat. at 927–28 (to be codified at 42 U.S.C. § 4101(a)–(b)) (mandating ongoing program between Administrator and a Technical Mapping Advisory Council to review, update, and maintain NFIP rate maps with respect to the 100-year floodplain, the 500-year floodplain, areas of residual risk, areas that could be inundated in case of failed flood control structures, and the level of protection provided by such structures); § 100216(f), 126 Stat. at 930 (to be codified at 42 U.S.C. § 4101b(f)) (allocating \$400 million annually between 2013 and 2017 to support FEMA’s flood-mapping capacity).

67. *See* Scales, *supra* note 49, at 47.

68. *See* David Porter, *Hurricane Sandy Was Second-Costliest in U.S. History, Report Shows*, HUFFINGTON POST GREEN (Feb. 12, 2013, 10:32 AM), http://www.huffingtonpost.com/2013/02/12/hurricane-sandy-second-costliest_n_2669686.html.

69. *See, e.g.*, Raymond Hernandez, *Hurricane Relief Bill Clears Hurdle in the Senate*,

immediate rebuilding aftermath of Superstorm Sandy, the financial impact of the Biggert-Waters rate increases began to attract significant attention in the press. In mid-December 2012, FEMA released new flood maps (the first change to New Jersey flood maps in a generation)⁷⁰ that caused highly publicized sticker shock by already devastated Superstorm Sandy victims looking to rebuild their homes. No longer protected (“grandfathered”) by low rates set under previous maps,⁷¹ some homeowners faced the prospect of a ten-fold increase in annual premiums in order to purchase the maximum NFIP coverage of \$250,000 for structures.⁷² There began what the press described as a “revolution” by policyholders against the new Biggert-Waters rates.⁷³

Perhaps because most Biggert-Waters rate increases were not scheduled to take effect until October 2013, there was no acute political reaction to FEMA’s newly released flood maps and the agency’s corresponding new schedule of rate increases. In January 2013, New Jersey Governor Chris Christie announced that he would not challenge the new maps and the higher rates they presaged.⁷⁴ But as more policyholders began to appreciate the significance of the rate increases, political opposition began to grow. An organization called “StopFEMANow” was created as a Facebook Page by George Kasimos, a New Jersey resident affected by Superstorm Sandy, and, in September 2013, on the eve of the new NFIP rate increases, it successfully organized protests by hundreds of outraged policyholders in fifteen locations across ten states.⁷⁵ Indeed, a speech given on behalf of this grass-roots organization reflects perfectly the insurance-as-governance claim

N.Y. TIMES, Dec. 22, 2012, at A23.

70. See, e.g., Gina Columbus, *N.J. Officials Assess New Flood Maps in Sandy’s Wake*, USA TODAY (Dec. 16, 2012, 8:28 PM), <http://www.usatoday.com/story/news/nation/2012/12/16/new-nj-flood-maps/1773733/>; Stephen Stirling, *Jersey Shore Revolution Begins, as FEMA Releases New Flood Maps*, NJ.COM (Dec. 16, 2012, 8:10 AM), http://www.nj.com/news/index.ssf/2012/12/jersey_shore_revolution_begins.html.

71. See *supra* notes 65–66 and accompanying text.

72. See, e.g., Les Christie, *Flood Insurance Costs Soaring for Thousands of Homeowners*, CNN MONEY (Oct. 21, 2013, 4:57 AM), http://money.cnn.com/2013/10/21/real_estate/flood-insurance/.

73. See, e.g., Stirling, *supra* note 70.

74. See Edward Van Embden, *New Jersey to Adopt FEMA’s Flood Elevation Maps, Christie Says*, TOMS RIVER PATCH (New Jersey) (Jan. 25, 2013, 12:55 AM), <http://tomsriver.patch.com/groups/politics-and-elections/p/new-jersey-to-adopt-fema-s-flood-elevation-maps-christie-says>.

75. See Tracey Samuelson, *Stop FEMA Now Hopes to Take Flood Reform Movement National*, NEWSWORKS (Sept. 29, 2013), <http://www.newsworks.org/index.php/local/new-jersey/60340-stop-fema-now>.

that insurance is increasingly treated as government itself. It begins with “We the people,” and then makes its central claim, that “[t]he American dream is becoming our nightmare as our rights to life, liberty, and the pursuit of happiness are now in jeopardy by our own government’s ludicrous demands of increases in flood insurance premiums of 500% or more.”⁷⁶ By May 2013, Governor Christie caught this shift in the political winds and announced his opposition to the NFIP rate increases,⁷⁷ as did Congresswoman Maxine Waters, the co-author of the Biggert-Waters legislation.⁷⁸ In October 2013, legislation to delay the FEMA rate increases for four years was introduced in the Senate by Mary Landrieu (Democrat, Louisiana)⁷⁹ and, not to be undone, in the House of Representatives by her expected opponent in the 2016 election, Representative Bill Cassidy (Republican, Baton Rouge).⁸⁰ In late December 2013, the Tampa Bay Times called the impending NFIP rate increases one of the “top stories of the year.”⁸¹

As this essay goes to press, it seems as if most of the Biggert-Waters rate increases will proceed as scheduled. Neither the Landrieu nor the Cassidy bill has been passed by Congress.⁸² On January 16, 2014, Congress enacted an omnibus \$1.1 trillion budget bill that would leave almost all Biggert-Waters rate increases untouched, save for an eight-month delay in increased rates for previously-grandfathered, current homeowners whose

76. Michael P. Coyne, Stop FEMA Now, Speech, available at <http://www.stopfemanow.com/about/> (follow “speech from Michael P. Coyne” hyperlink).

77. See Scott Gurian, *Explainer: Putting Biggert-Waters Flood Insurance Reform Act in Perspective*, NJSPOTLIGHT (Nov. 12, 2013), <http://www.njspotlight.com/stories/13/11/11/explainer-putting-biggert-waters-flood-insurance-reform-act-in-perspective/> (“Governor Chris Christie . . . wrote to Congress last May, [expressing that] ‘foisting the additional burden of a flood-insurance rate increase on home and business owners as currently proposed would be financially devastating.’”).

78. *Id.* (“Congresswoman Maxine Waters—who coauthored the original Act—now says she’s outraged by the insurance premium increases many homeowners are facing, and that she never intended for that to occur.”).

79. See Landrieu, *Bipartisan Coalition to Introduce Flood Insurance Reform Bill*, MARY LANDRIEU (Oct. 25, 2013), http://www.landrieu.senate.gov/?p=press_release&id=4023.

80. See Jordan Blum, *Cassidy Files Flood Insurance Bill*, THE ADVOCATE (Jan. 6, 2014), <http://theadvocate.com/home/7820103-125/cassidy-files-flood-insurance-bill>.

81. *2013: Top Stories of the Year*, TAMPA BAY TIMES (Dec. 27, 2013, 11:21 PM), <http://www.tampabay.com/news/2013/2158824>.

82. Flood Insurance Relief and Transparency Act of 2013, H.R. 3693, 113th Cong. (2013); S. 996, 113th Cong. (2013). On January 30, 2014, the Senate passed the Landrieu bill by a vote of 67 to 32. Press Release, Senator Mary Landrieu, Senate Passes Comprehensive Bill Delaying Flood Insurance Rate Hikes (Jan. 30, 2014), available at http://www.landrieu.senate.gov/?p=press_release&id=4201.

rates would otherwise increase due to the greater flooding risks revealed by FEMA's new flood maps.⁸³ There are announcements by members of Congress in both parties that additional legislation will be introduced seeking broader, and deeper, rollbacks of Biggert-Waters rate increases,⁸⁴ but House Speaker John Boehner has gone on record stating that the House will "not take up" legislation that would delay the Biggert-Waters rate reforms.⁸⁵

CONCLUSION

The central point of this essay is that insurance has a role to play, both as an institution and as a policy instrument, in debates about the energy-water nexus. There is no more important debate on this topic than the overarching one about the connections between our continued dependence on fossil fuels and the climate-change consequences it causes. Recently, commentators have be-moaned both a lack of political attention to climate change⁸⁶ and a lack of serious press coverage of the issue.⁸⁷ What this commentary misses, however, is that a significant part of popular debate on this issue is now taking place in the arena of insurance law and policy. It is still too early to predict whether political and

83. See Andrew G. Simpson, *Congressional Spending Plan Would Curb Some Flood Insurance Rates*, INS. J. (Jan. 15, 2014), <http://www.insurancejournal.com/news/national/2014/01/15/317118.htm> (stating that the budget language will block FEMA from spending funds for the remainder of the fiscal year, through September 30, 2014, to enforce higher premiums on currently "grandfathered" properties that otherwise would have seen their rates increase under Section 207 of the Biggert-Waters Act).

84. See, e.g., Kimberly Railey, *Congress Scrambles as Coastal Residents Rail at Insurance Rates*, BOSTON GLOBE (Jan. 19, 2014), <http://www.bostonglobe.com/news/nation/2014/01/19/massachusetts-lawmakers-seek-boost-taxpayer-subsidies-for-coastal-flood-insurance/UpPekn4O8DBJq8ZWvPXNNL/story.html> ("Members of Congress from coastal states including Massachusetts are banding together across party lines to respond to a rising tide of constituent complaints and reverse increases in federal flood insurance premiums mandated by a bill passed in 2012. . . . The Senate could vote this month on a measure to restore the full subsidies and delay the increases for another four years.").

85. See Bruce Alpert, *House Speaker Boehner Says House Won't Take Up Bill on 4-Year Delay in Flood Insurance Increases, But More Modest Change Possible*, NOLA.COM (Jan. 16, 2014), http://www.nola.com/politics/index.ssf/2014/01/speaker_boehner_says_house_won.html.

86. See, e.g., Dana R. Fisher et al., *Mapping the Ideological Networks of American Climate Politics*, 116 CLIMATIC CHANGE 523, 524–25 (2013).

87. See, e.g., Margaret Sullivan, *After Changes, How Green is the Times?*, N.Y. TIMES, Nov. 24, 2013, at SR12; Laura Santhanam, *Study: How Broadcast News Covered Climate Change in the Last Five Years*, MEDIA MATTERS FOR AMERICA (Jan. 16, 2014), <http://media.matters.org/research/2014/01/16/study-how-broadcast-news-covered-climate-change/197612>.

market feedback from the insurance debate will directly affect policy discussions about alternative energy sources, improved energy efficiency, the unequal distribution of risks caused by climate change, and a host of other topics. But one thing is quite clear. Currently, one aspect of the climate that people and politicians *are* intensely discussing involves the immediate and highly salient costs, both to individual incomes and national budgets, of doing nothing to ameliorate the growing costs of climate-related catastrophes. In fact, precisely as the insurance-as-governance literature would predict, the debate over insurance is on the front lines in the national discussion about climate and the energy-water nexus.