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THE ENVIRONMENTAL LAW REPORTER®
August 2024
Volume 53 No. 8
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ENVIRONMENTAL LAW & POLICY ANNUAL REVIEW

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ARTICLES AND COMMENTS

HONORABLE MENTIONS

ENVIRONMENTAL LAW AND POLICY ANNUAL REVIEW

2023-2024

ELR

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ELR®—The Environmental Law Reporter® is an essential online research tool edited by attorneys that provides the most-often cited analysis of environmental, sustainability, natural resources, energy, toxic tort, and land use law and policy. *ELR* has three components:

• Our highly respected monthly journal, *ELR®—The Environmental Law Reporter®*, provides insightful features relevant to both legal practice and policy on today's most pressing environmental topics. The journal is available in print as well as online.

• *ELR UPDATE* provides expert summaries three times a month of the most important federal and state judicial and administrative developments as well as federal legislative and international news. Highlights from *ELR UPDATE* may also appear in our monthly journal, but all of the material can be found on our website.

• *ELR Online*, available at www.elr.info, is a one-stop environmental law and policy research site with access to 50 years of *ELR* articles and analysis; extensive links to statutes, regulations, and treaties; a comprehensive subject matter index to cases and articles; and many other tools.

Submissions . . .

ELR invites readers to submit articles and comments, which are shorter features, for publication. Manuscripts may be on any subject of environmental, sustainability, natural resources, energy, toxic tort, or land use law or policy. Citations should conform to *A Uniform System of Citation* (the "Bluebook") and should include *ELR* citations for materials that we have published. Manuscripts should be submitted by e-mail attachment to austin@eli.org. We prefer that the file be in Microsoft Word® format.

Opinions are those of the authors and not necessarily those of the Environmental Law Institute or of funding organizations.

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ELR Online multi-site no print: $3,850

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ELR—The Environmental Law Reporter®
(ISSN 0046-2284) is published monthly.

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Send address changes to:
Environmental Law Reporter®
1730 M Street, NW, Ste. 700
Washington, DC 20036
(202) 939-3800
Fax (202) 939-3868

Periodicals postage paid at Washington, D.C., and at additional mailing offices.

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ENVIRONMENTAL LAW AND POLICY ANNUAL REVIEW

Dear Readers:

The *Environmental Law and Policy Annual Review* (ELPAR) is published by the Environmental Law Institute's (ELI's) *Environmental Law Reporter* (*ELR*) in partnership with Vanderbilt University Law School. For seventeen years, ELPAR has provided a forum for presentation and discussion of the best environmental law and policy-relevant ideas from the legal academic literature. Published as an annual special issue of *ELR*, ELPAR is designed to fill the same important niche by helping to bridge the gap between academic scholarship and environmental policymaking.

ELI and Vanderbilt formed ELPAR to accomplish three principal goals. The first is to provide a vehicle for moving ideas from the academy to the policymaking realm. Academicians in the environmental law and policy arena generate hundreds of articles each year, many of which are written in a dense, footnote-heavy style that is inaccessible to policymakers with time constraints. ELPAR selects the leading examples from this large pool of articles and makes their ideas digestible by reprinting them in a short, readable form accompanied by expert, balanced commentary.

The second goal is to improve the quality of legal scholarship. Professors have strong institutional incentives to write theoretical work that ignores policy implications. ELPAR seeks to shift these incentives by recognizing scholars who write articles that not only advance legal theory, but also reach policy-relevant conclusions. By doing so, ELPAR seeks to induce them to generate new policy ideas and to improve theoretical scholarship by asking them to account for the hard choices and constraints faced by policymakers. And the third and most important goal is to provide a first-rate educational experience to law students interested in environmental law and policy.

To select candidate articles for inclusion, the ELPAR Editorial Board and Staff conducted a keyword search for "environment!" in an electronic database. The search was limited to articles published from August 1, 2022, through July 31, 2023, in the law reviews from the top 100 *U.S. News and World Report*-ranked law schools and the "environmental and land use law" and "energy and natural resources law" journals ranked by the Washington & Lee University School of Law. Journals that are solely published online were searched separately and must be free to access. Student scholarship and non-substantive content were excluded.

The Vanderbilt students then screened articles for consistency with the ELPAR selection criteria. They included only those articles that met the threshold criteria of addressing an issue of environmental quality and offering a law or policy-relevant solution. Next, they considered the articles' feasibility, impact, creativity, and persuasiveness.

Through discussion and consultation, the students ultimately chose 20 articles for review by ELPAR's Advisory Committee members, who provided invaluable insights on article selection. Vanderbilt University Law School Prof. Michael Vandenbergh, ELI Senior Attorney Linda Breggin, and *ELR* Editor-in-Chief Jay Austin also assisted in the final selection process. Four articles were selected, and three received honorable mentions.

On April 5, 2024, ELI and Vanderbilt cosponsored a hybrid conference where authors of the articles presented their ideas to an audience of business, government (federal, state, and local), think-tank, media, and nonprofit participants and practicing experts in both the private and public sectors provided comments. The featured articles were *Climate Choice Architecture*; *Deals in the Heartland: Renewable Energy Projects, Local Resistance, and How Law Can Help*; and *The Negotiable Implementation of Environmental Law*. The conference was structured to encourage dialogue among presenters and attendees. In addition, on February 6, 2024, ELI and Vanderbilt cosponsored a webinar featuring the article *Designing Effective Border Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*.

The students worked with the authors to shorten the original articles and to highlight the policy issues presented, as well as to edit the transcripts of the expert comments delivered at the conference. These edited articles and comments are published here as ELPAR, which is also the August issue of *ELR*. Also included is a comment on environmental legal scholarship, which is based on the data collected through the ELPAR review process. We are once again pleased to present the results of this year's efforts.

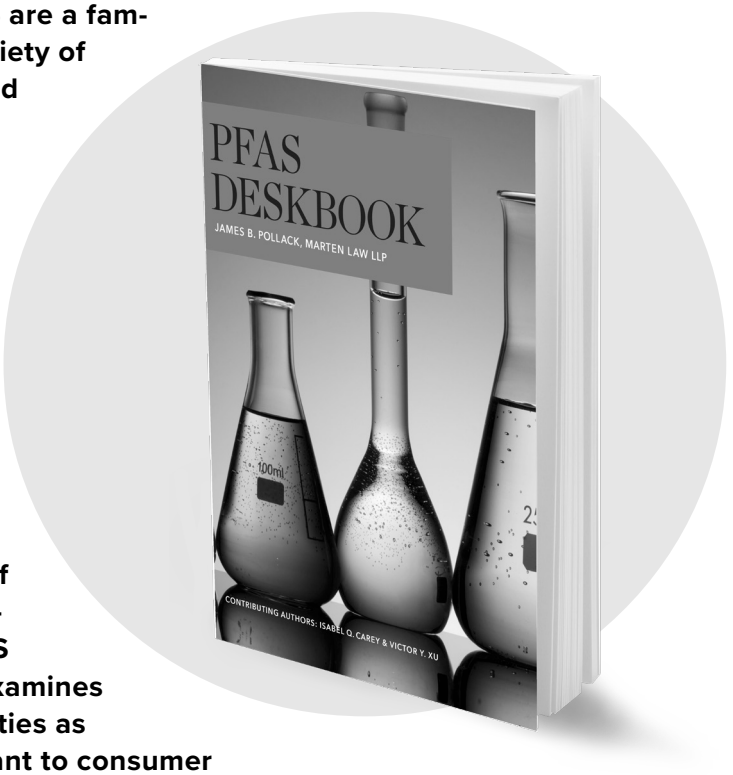
Linda K. Breggin, Senior Attorney, Environmental Law Institute;
Lecturer in Law, Vanderbilt University Law School

Jay E. Austin, Editor-in-Chief, *Environmental Law Reporter*

Michael P. Vandenbergh, David Daniels Allen Distinguished Chair of Law,
Vanderbilt University Law School

PFAS DESKBOOK

From cookware to dental floss to stain-resistant fabrics, PFAS, or per- and polyfluoroalkyl substances, pervade modern life. PFAS are a family of thousands of synthetic chemicals that have a variety of unique qualities that make them useful in industrial and consumer product applications. Unfortunately, there is a growing scientific recognition that many PFAS come with a cost to public health and the environment. While federal and state action is just beginning for PFAS and the regulatory landscape is changing quickly, the toxicity of many PFAS has been well-established.



The *PFAS Deskbook* offers readers a comprehensive, nonpartisan, objective overview of the PFAS journey from their inception to today. It begins with the historical and scientific background of PFAS to help readers better understand the pervasive nature of these so-called "forever chemicals." Subsequent chapters are then laid out to largely follow the path of PFAS chemicals as they move through the supply chain. It examines their creation, import, and initial use in industrial facilities as well as the statutory and regulatory frameworks relevant to consumer products. The Deskbook further explores the variety of federal and state statutes that can apply to contaminated soils, air, and water after PFAS have entered our environment, including PFAS contamination and cleanup, making the book a must-have resource for today's environmental practitioners.

About the Authors: Lead author James B. Pollack is an attorney at Marten Law LLC, one of the oldest, largest, and most diversified environmental law firms in the country, where he leads the firm's consumer products regulatory practice. James' work has largely focused on emerging contaminants like PFAS, as well as litigation related to the identification and cleanup of PFAS contamination in community water supplies. Contributing authors include Isabel Q. Carey and Victor Y. Xu, also with Marten Law.

ELI PRESS

ISBN: 978-1-58576-265-1 | 208 pages | Price $34.95
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ANALYSIS OF ENVIRONMENTAL LAW SCHOLARSHIP 2022-2023

by Linda K. Breggin, Kyle J. Blasinsky, Madeline Claire Thompson, and Michael P. Vandenbergh

Linda K. Breggin is a Senior Attorney with the Environmental Law Institute and Lecturer in Law at Vanderbilt University Law School. Kyle J. Blasinsky is a J.D. candidate and Ph.D. student in Law and Economics at Vanderbilt University Law School. Madeline Claire Thompson is a recent graduate of Vanderbilt University Law School. Michael P. Vandenbergh is the David Daniels Allen Distinguished Chair in Law, Co-Director of the Energy, Environment, and Land Use Program, and Director of the Climate Change Research Network at Vanderbilt University Law School.

The *Environmental Law and Policy Annual Review* (ELPAR) is published by the Environmental Law Institute's (ELI's) *Environmental Law Reporter* in partnership with Vanderbilt University Law School. ELPAR provides a forum for the presentation and discussion of some of the most creative and feasible environmental law and policy proposals from the legal academic literature each year. The articles that are considered include all environmental law articles published in select law journals during the previous academic year.[1] The law journal articles that are republished and discussed are selected by Vanderbilt University Law School students with input from their course instructors and an outside advisory committee of experts.

The purpose of this Comment is to highlight the results of the ELPAR article selection process and to report on the environmental legal scholarship for the 2022-2023 academic year, including the number of environmental law articles published in general-interest law reviews versus environment-focused law journals and the topics covered in these articles. We also present the top 20 articles that meet ELPAR's criteria of persuasiveness, impact, feasibility, and creativity. From the top 20 articles, we selected four articles to be republished in shortened form in this issue, including some with commentaries from leading practitioners and policymakers. This Comment provides an empirical snapshot of the environmental legal literature during the past academic year and provides information on the top articles chosen by ELPAR.

I. Methodology

A detailed description of ELPAR's methodology is posted on the ELI website.[2] In brief, the initial search for scholarship that qualifies for ELPAR review is limited to articles published from August 1 of the prior year to July 31 of the current year, roughly corresponding to the academic year. The search is conducted in general law reviews from the top 100 law schools, as ranked by *U.S. News and World Report* in its most recent report, counting only articles from the first 100 schools ranked for data purposes (i.e., if there is a tie and over 100 schools are considered to be in the top 100, among schools at the cutoff, those that come first alphabetically are counted). Additionally, journals listed in the "Environment and Land Use Law" and "Energy and Natural Resources Law" subject areas of the most recent journal rankings compiled by Washington & Lee University School of Law are searched,[3] with certain modifications.[4]

The ELPAR Editorial Board and staff start with a keyword search for "environment!" in an electronic legal scholarship database.[5] Articles without a connection to the

1. *See ELPAR Publications*, Env't L. Inst., https://www.eli.org/environmental-law-policy-annual-review/publications (last visited June 20, 2024) [hereinafter ELPAR Methodology] (click on the "Methodology" button near the top of the page).

2. *Id.*

3. *W&L Law Journal Rankings*, Wash. & Lee Sch. of L., https://management-tools4.wlu.edu/LawJournals/ (last visited June 20, 2024) (select a category in the "Subject" dropdown menu, then click "Submit").

4. *See* ELPAR Methodology, *supra* note 1.

5. ELPAR members conduct a search in the spring semester of articles published from August 1 through December 31 of the previous year. In the fall semester, members search each journal for articles published earlier that year, from January 1 through July 31. The exact date of access for each journal varies according to when each individual ELPAR member performed the searches on their assigned journals, but the spring searches were performed in the second and third weeks of January 2023, and the fall searches were performed in the last full week of August 2023. In order to collect articles from "embargoed" journals (which are only available on Westlaw after a delay) as well as articles from journals that are published after their official publication date, a Westlaw Alert is set up to provide notification when an

natural environment (e.g., "work environment" or "political environment") are removed, as are book reviews, eulogies, non-substantive symposia introductions, case studies, presentation transcripts, and editors' notes. Student scholarship is excluded if the piece is published as a note or comment by a student who is a member of the staff of the publishing journal. We recognize that all ranking systems have shortcomings and that only examining top journals imposes limitations on the value of our results. Nevertheless, this approach provides a useful glimpse of leading scholarship in the field.

For purposes of tracking trends in environmental scholarship, the next step is to cull the list generated from the initial search to ensure that the list contains only those articles that qualify as "environmental law articles." Determining whether an article qualifies as an environmental law article is more of an art than a science, and our conclusions should be interpreted with this caveat in mind. We have, however, attempted to use a rigorous, transparent process. Specifically, an article is considered an "environmental law article" if environmental law and policy are a substantial focus of the article. The article need not focus exclusively on environmental law, but environmental topics should be given more than incidental treatment and should be integral to the main thrust of the article. Many articles in the initial pool, for example, address subjects that influence environmental law, including administrative law topics (e.g., executive power and standing) and tort law topics (e.g., punitive damages). Although these articles may be considered for inclusion in ELPAR and may appear in our selection of top articles, they are not included for purposes of tracking environmental law scholarship since environmental law is not the main thrust of these articles.

Each article in the dataset is categorized by environmental topic to allow for tracking of scholarship by topic area. The 10 topic categories are adopted from the *Environmental Law Reporter* subject matter index and consist of air, climate change, energy, governance, land use, natural resources, toxic substances, waste, water, and wildlife.[6] ELPAR students assign each article a primary topic category and, if appropriate, a secondary category. ELPAR students also assign each article a sub-category if appropriate.[7]

The ELPAR Editorial Board and staff work in consultation with the course instructors, Prof. Michael P. Vandenbergh and ELI Senior Attorney Linda K. Breggin, to determine whether articles should be considered environmental law articles and how to categorize the article by environmental topic for purposes of tracking scholarship. The articles included in the total for each year are identified on a list posted on the Environmental Law Institute website.[8]

II. Data Analysis of Environmental Legal Scholarship

For the 2022-2023 ELPAR review period (August 1, 2022 through July 31, 2023), the ELPAR Editorial Board and staff identified 300 environmental articles published in top law reviews and environmental law journals. One hundred eighty-one were published in journals that focus on environmental law, and 119 were published in general law reviews.

Aggregate data on the articles' primary topics are displayed in Figure 1 below. Of the 300 environmental articles published during the 2022-2023 review period, there are 132 governance articles (44.0%), 32 climate change articles (10.7%), 30 energy articles (10.0%), 26 land use articles (8.7%), 25 water articles (8.3%), 14 natural resource articles (4.7%), 13 wildlife articles (4.3%), 13 toxic substances articles (4.3%), 10 waste articles (3.3%), and five air articles (1.7%). ELPAR members additionally identified secondary topics in 176 articles; these data can be seen in Figure 2 below. Among the articles identified as having a secondary topic, the secondary topic is governance in 76 articles, climate change in 40 articles, land use in 15 articles, natural resources in 11 articles, water in eight articles, energy in seven articles, wildlife in six articles, air in five articles, waste in five articles, and toxic substances in three articles. Governance is the most common topic, followed by climate change and land use. Figure 3 shows the breakdown of articles with governance as a primary or secondary topic further categorized by their governance subtopic, demonstrating the wide variety of governance subject areas observed.

III. Top 20 Articles Analysis

The top 20 articles chosen from the pool of eligible environmental law and policy-related articles published during the 2022-2023 academic year are listed in Table 1. Of the top 20 articles outlined below, seven proposed that federal agencies promulgate new or updated regulations, four proposed updates to federal laws, four proposed state or local policy approaches, three proposed changes in the judicial system or new interpretations of existing law, and two proposed private environmental governance solutions. Many proposals incor-

article meeting ELPAR's search criteria is uploaded to Westlaw after ELPAR members conducted initial searches. A Westlaw Alert was set up for the spring search on January 11, 2023, and ran until August 22, 2023. An alert was set up for the fall search on August 23, 2023, and ran until August 31, 2023. Articles caught by the Westlaw Alert system were subsequently considered for selection by ELPAR and added to the data analysis. Law reviews of schools added to the *U.S. News and World Report* top 100 during the spring search are searched for the entire year the following fall, and journals from schools removed from the top 100 after the spring search are removed and not considered.

6. *Subject Matter Index (Articles)*, ELR, https://www.elr.info/subject-matter-index/articles (last visited June 20, 2024).

7. The *ELR* subject matter index includes subtopics for each topic. For example, subtopics for the governance topic consist of administrative law, agencies, bankruptcy, constitutional law, courts, enforcement and compliance, environmental justice, environmental law and policy/governance, infrastructure, institutional controls, insurance, international, liability, private governance, public participation, risk assessment, states, sustainability, tax, trade, tribes, and U.S. government. For a list of all the subtopics in each topic, see *id.* (click on one of the listed topics to view related sub-topics therein).

8. *See ELPAR Publications*, Env't L. Inst., https://www.eli.org/environmental-law-policy-annual-review/publications (last visited June 20, 2024) (click on the "Environmental Law and Policy Annual Review Complete List of Reviewed Articles 2022-2023" button near the top of the page).

porated federal, state and local, and private-sector actions as a means of addressing environmental issues.

Primary topics identified in the top 20 articles are as follows: seven climate change articles, five governance articles, two water articles, two natural resources articles, two land use articles, one energy article, and one toxic substances article. Secondary topics were also identified for several articles; these include 11 governance and two natural resources articles.

This year's pool of top articles came from both general and environmental law journals. Sixteen of the top 20 articles were published in general-subject law journals, while four were published in environmental law reviews. The lead authors of the top articles came from a wide range of law schools and academic backgrounds.

Table 1 below lists every article included in the top 20 along with a brief description of each article's main takeaway or "big idea." The descriptions of the big ideas were drafted by the ELPAR Editorial Board and staff and reflect the key points they thought made an important contribution to the environmental law and policy literature. Links are provided to free-to-access versions of the full articles, and most of the articles include a brief abstract summarizing the piece.

Figure 1. 2022-2023 Articles Categorized by Primary Topic

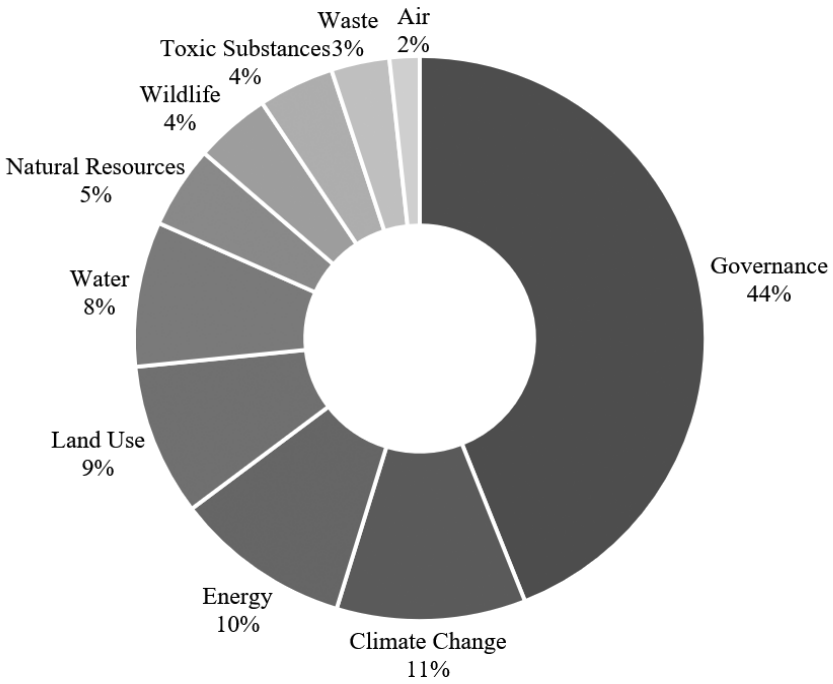

Figure 2. 2022-2023 Article Count by Primary and Secondary Topic

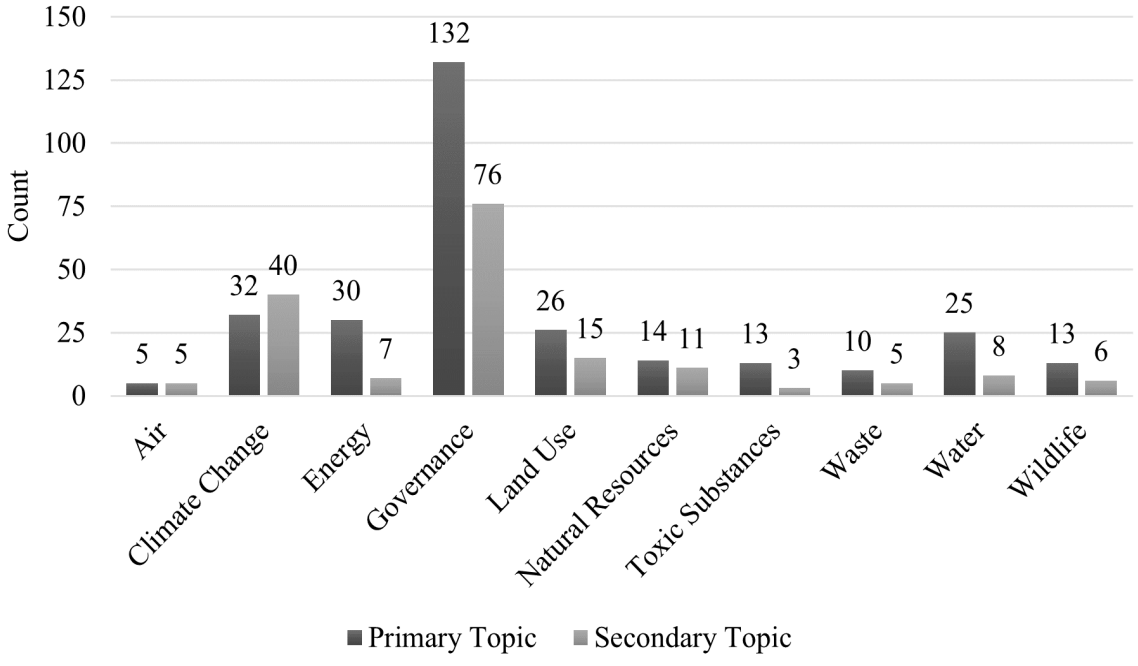

Figure 3. 2022-2023 Governance Articles Categorized by Sub-Topic

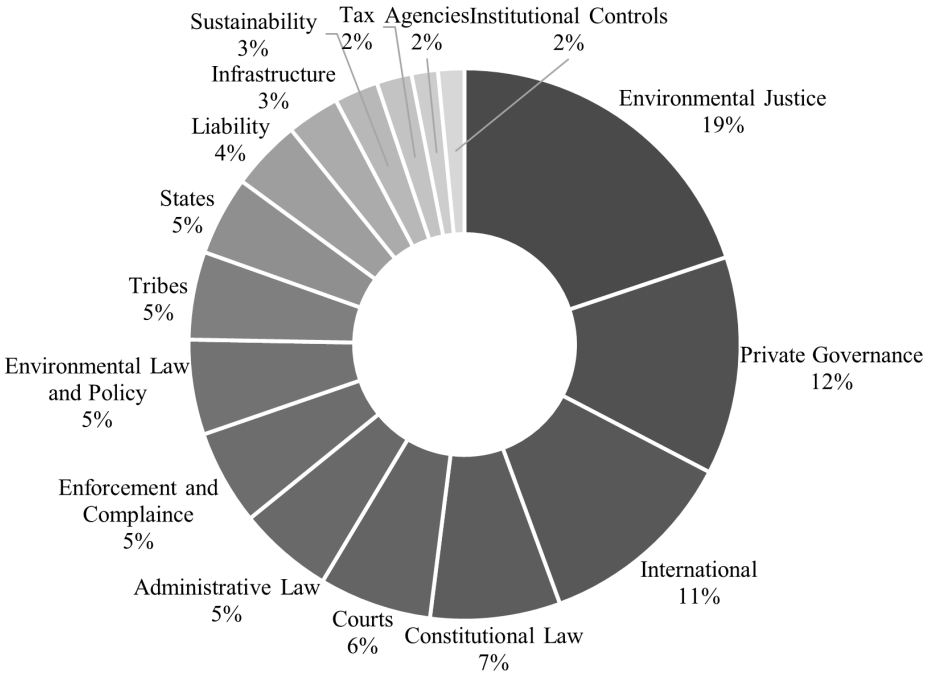

Table 1. 2022-2023 Top 20 Articles Overview Chart

Author(s)	Title	Citation and URL	Topic	The Big Idea
Anderson, Jerry L. Vaughan, Amy Grace	*Environmental Penalties: Discretion and Disparity*	42 Stan. Env't L.J. 3 https://law.stanford.edu/wp-content/uploads/2023/02/I_Anderson-Vaughan_web_2-20.pdf	Governance (enforcement and compliance)	U.S. Environmental Protection Agency (EPA) data demonstrate wide disparities in median penalties imposed for violations of federal environmental laws—including from state-to-state, between states and EPA, and among EPA regional offices—and this lack of uniformity should be addressed through a range of regulatory, policy, and judicial reforms that would promote deterrence and fairness while also preserving enforcement discretion.
Angelo, Mary Jane Lancaster, Megan	*The Insect Apocalypse: Legal Solutions for Protecting Life on Earth*	49 Ecology L.Q. 1 https://www.ecologylaw-quarterly.org/wp-content/uploads/2022/10/49.1_Angelo_Lancaster-1.pdf	Toxic Substances (pesticides)	The U.S. Environmental Protection Agency should change its interpretation and application of the Federal Insecticide, Fungicide, and Rodenticide Act by: (1) requiring more robust data on the risks and benefits of a pesticide to support its evaluation of environmental, economic, and social considerations; (2) exercising discretion to ensure imperiled species and ecosystem services are given the weight they deserve; (3) considering integrated pest management techniques as alternatives; (4) eliminating the treated article exemption for seeds treated with systemic insecticides to allow for enforceable warnings and risk reduction language on labels; and (5) including label restrictions on pesticides that require insecticide-free on-farm habitats to be maintained.
Börk, Karrigan	*Water Right Exactions*	47 Harv. Env't L. Rev. 63 https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-Bork.pdf	Water (quantity)	Permitting entities should impose exactions directly on new and existing water right holders to offset the external costs associated with water rights and associated infrastructure, thereby internalizing costs and encouraging more rational water use, improved efficiency, and better maximization of the societal benefits of water use.
Brewster, Rachel	*Enabling ESG Accountability: Focusing on the Corporate Enterprise*	2022 Wis. L. Rev. 1367 https://wlr.law.wisc.edu/wp-content/uploads/sites/1263/2023/01/14-A_Brewster-Camera-Ready-1367%E2%80%931406-PDF-.pdf	Governance (private governance)	Congress should pass legislation that reshapes corporate enterprise law to increase parent corporations' responsibilities to supervise their subsidiaries through a set of ground rules for all corporations and, in so doing, empower corporate leaders who want to achieve environmental, social, and governance goals.

Cecot, Caroline	*Efficiency and Equity in Regulation*	76 Vand. L. Rev. 361 https://scholarship.law.vanderbilt.edu/cgi/viewcontent.cgi?article=4844&context=vlr	Governance (administrative law)	Understanding distributional effects and considering equity in regulation is long overdue but is not inconsistent with and should not displace cost benefit analysis, efficiency, or economic thinking—and when equity and efficiency conflict, the following rules of thumb should be used to determine whether and how funding and subsidy programs should be deployed to achieve equitable outcomes: (1) agency action should not leave society, in the aggregate, worse off; and (2) agency action should avoid leaving disadvantaged groups worse off, especially in the context of pursuing equality in regulatory benefits.
Diamond, Danielle Ashwood, Loka Franco, Allen Kuehn, Lindsay Implay, Aimee Boutwell, Crystal	*Agricultural Exceptionalism, Environmental Injustice, and U.S. Right-to-Farm Laws*	52 ELR 10727 https://animal.law.harvard.edu/wp-content/uploads/Diamond.pdf	Land Use (agriculture)/ Governance (liability)	States should repeal right-to-farm laws (RTFLs) and allow common-law nuisance doctrine to evolve because RTFLs enable industrial agribusiness to evade accountability while harming small and medium farmers and rural communities, and the outcomes are inconsistent with the fundamental purpose of the laws and enable rural environmental injustices.
Dominioni, Goran Esty, Daniel C.	*Designing Effective Border Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*	65 Ariz. L. Rev. 1 https://arizonalawreview.org/pdf/65-1/65arizlrev1.pdf	Climate Change/Governance (trade)	To prevent carbon leakage, protect domestic industries, and incentivize collective climate action, border carbon adjustment (BCA) mechanisms, which assess the carbon emissions embedded in imported products and impose a tariff on imports from countries with less ambitious climate policies, are needed, and they should take the form of "effective" BCA mechanisms, which credit a wide range of climate policies in order to yield greater emissions reductions globally, garner broader political support, and sync with World Trade Organization law, as compared to explicit BCA mechanisms, which only credit carbon taxes and emission trading schemes.
Gouzoules, Alexander	*Going Concerns and Environmental Concerns: Mitigating Climate Change Through Bankruptcy Reform*	63 B.C. L. Rev. 2169 https://lira.bc.edu/work/ns/a9230b7f-58ad-43e4-98b8-26aa64a8bf1a	Climate Change/Governance (bankruptcy)	To mitigate climate change and speed the adoption of renewable energy, Congress should amend the Bankruptcy Code to: mandate liquidation under Chapter 7 of certain types of insolvent fossil in lieu of reorganization under Chapter 11; require courts and trustees to consider climate change mitigation, including through decreasing emissions from fossil fuel production, when considering the public interest; and provide for appointment of environmental trustees to weigh the interests of creditors against the public interest in climate change mitigation.
Hirokawa, Keith H. Carlarne, Cinnamon P. Börk, Karrigan S. Ziaja, Sonya	*Mapping Ecosystem Benefit Flows to Normalize Equity*	54 Ariz. St. L.J. 819 https://arizonastatelawjournal.org/wp-content/uploads/2023/02/Bork_-Publication.pdf	Natural Resources/ Governance (environmental justice)	Mapping ecosystem services benefit flows can provide critical information about resource distribution, access, and control that should be used to promote equitable outcomes in land use planning, exactions that consider ecosystems services impacts, environmental justice mappings, and environmental impact statements under state and federal law.
Martinez, Veronica Root	*Public Reporting of Monitorship Outcomes*	136 Harv. L. Rev. 757 https://harvardlawreview.org/wp-content/uploads/2023/01/136-Harv.-L.-Rev.-757.pdf	Governance (enforcement and compliance)	To increase transparency, at the conclusion of all corporate monitorships, the public should receive a report outlining whether the company engaged in a successful remediation effort, and this requirement can be achieved through: (1) a U.S. Securities and Exchange Commission periodic disclosure requirement; and (2) a new Office of Management and Budget policy.
Mormann, Felix	*Climate Choice Architecture*	64 B.C. L. Rev. 1 https://scholarship.law.tamu.edu/cgi/viewcontent.cgi?article=2666&context=facscholar	Climate Change/Governance (private governance)	A greater reliance on nudges in both public and private governance would lead to more climate-friendly decisions by institutions and individuals across a wide range of contexts, and policymakers and practitioners should adopt a functionally derived taxonomy that groups the tools of choice architecture into three categories—decision information, decision structure, and decision assistance—to help them identify the type of nudges that best advance their climate objectives.

Ochoa, Christiana Cook, Kacey Weil, Hanna	*Deals in the Heartland: Renewable Energy Projects, Local Resistance, and How Law Can Help*	107 Minn. L. Rev. 1055 https://minnesotalawreview.org/wp-content/uploads/2023/01/02-Ochoa_MLR.pdf	Energy (alternative energy)/ Governance (public participation)	The U.S.' transition to renewable energy depends on the consent of increasingly reluctant rural communities to host wind arms, and, therefore, the following empirically informed measures should be adopted by private parties and governments: publicly acknowledge the burden wind turbines place on communities; improve the project design process (by registering interest and reporting on progress, inviting engagement and participation, fostering robust sharing of information, and allowing opportunities for fully voicing concerns); and assure that local communities receive financial benefits such as permanent fund dividends and grants.
Okoh, Michele	*Forgotten Waters*	111 Geo. L.J. 723 https://www.law.georgetown.edu/georgetown-law-journal/wp-content/uploads/sites/26/2023/06/GT-GGLJ230013.pdf	Water (Safe Drinking Water Act)/Governance (environmental justice)	To address historical discrimination against "peri-urban" communities (i.e., unincorporated communities proximate to municipalities that typically house poor, majority-minority populations) and the concomitant lack of water quality, Congress should utilize the cooperative model embodied in the Rural Electrification Act to affordably subsidize the inclusion of these well-dependent peri-urban communities into bordering municipalities' existing public water systems, providing residents with regulatory protection under the Safe Drinking Water Act.
Owen, Dave	*The Negotiable Implementation of Environmental Law*	75 Stan. L. Rev. 137 https://review.law.stanford.edu/wp-content/uploads/sites/3/2023/01/Owen-75-Stan.-L.-Rev.-137.pdf	Governance (enforcement and compliance)	Contrary to conventional accounts, negotiation is a pervasive feature of environmental law implementation and, therefore, regulatory agencies should "enhance and channel" negotiation-based systems through reforms to: (1) increase transparency by revising regulations, handbooks, and guidance documents to specify negotiable terms and limitations and disclose outcomes of negotiations where possible; (2) foster efficiency by dedicating additional resources to negotiation training; and (3) advance equity by providing funding and technical support to community groups.
Regan, Shawn Stoellinger, Temple Wood, Jonathan	*Opening the Range: Reforms to Allow Markets for Voluntary Conservation on Federal Grazing Lands*	2023 Utah L. Rev. 197 https://dc.law.utah.edu/cgi/viewcontent.cgi?article=1344&context=ulr	Land Use (public lands)/ Natural Resources	To overcome federal legal and institutional barriers that preclude markets for voluntary conservation on federal grazing lands, Congress and federal agencies could adopt a range of legislative and administrative reforms to: (1) rescind substantial grazing use regulations; (2) maximize flexibility under outcome-based grazing authorizations; (3) authorize conservation use; (4) remove requirements to own livestock and base property; (5) grant agencies administrative retirement authority; (6) recognize grazing privileges as formal property rights; (7) expand targeted regional approaches to resolve specific conflicts; and (8) use exchange authorities to facilitate voluntary conservation transactions.
Rossi, Jim Ruhl, J.B.	*Adapting Private Law for Climate Change Adaptation*	76 Vand. L. Rev. 827 https://scholarship.law.vanderbilt.edu/cgi/viewcontent.cgi?article=4850&context=vlr	Climate Change/Governance (courts)	Private law (torts, property, and contracts) will play an increasingly important role in solving disputes stemming from efforts to adapt to climate change, and several guideposts should be used to evaluate when doctrinal changes may be needed, such as modifying the central principle of "foreseeability" which, given the increasing inability to predict the future based on prior data, should incorporate a "foreseeability of nonstationarity" principle that may expand the scope of private law climate adaptation obligations.

Ryan, Erin	*Privatization, Public Commons, and the Takingsification of Environmental Law*	171 U. Pa. L. Rev. 617 https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=9807&context=penn_law_review#:~:text=Binding%20environmental%20policy-making%20discretion%20through,conservation%2Doriented%20leadership%20takes%20office	Natural Resources/ Governance (constitutional law)	Courts should adopt a modified regulatory takings test for public commons (i.e., air, water, public lands, energy, and biodiversity resources) based on a set of narrowly tailored changes to existing "legal infrastructure," including modest adjustments to the three prongs of the Penn Central test, in order to better account for the balance between public and private interests—a necessary step in light of the increasing "takingsification" of environmental law whereby property rights become a tool for entrenching environmental deregulation and undermining public rights in natural resource commons.
Sassman, Wyatt G	*Prioritizing Proximity in Phasing Out Oil and Gas Extraction*	55 Conn. L. Rev. 749 https://digitalcommons.lib.uconn.edu/cgi/viewcontent.cgi?article=1569&context=law_review	Climate Change/Governance (environmental justice)	In phasing out oil and gas extraction to address climate change, policies should prioritize: (1) stopping new extraction closest to people; (2) monitoring continued extraction closest to people; (3) plugging and reclaiming wells closest to people; and (4) matching proximity-based phaseouts with decarbonization.
Stern, Stephanie M	*Climate Transition Relief: Federal Buyouts for Underwater Homes*	72 Duke L.J. 161 https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=4132&context=dlj	Climate Change/Natural Resources (natural disasters)	Buyout laws and programs, such as the Federal Emergency Management Act's Hazard Mitigation Grant Program, which funds government acquisitions of flood-impacted homes, are incentivizing "buy ins" to flood zones by subsidizing flood risk-taking and should instead adopt a "climate transition relief" model built on a presumption against homeowner buyouts to curb high-risk housing choices—but should also include a carve-out for low-income residents who face severely constrained housing choice, unaffordable flood insurance, and high marginal costs from property loss.
Welton, Shelley	*Neutralizing the Atmosphere*	132 Yale L.J. 171 https://www.yalelawjournal.org/pdf/132.1_Welton_h5rtb5xy.pdf	Climate Change/Governance (environmental law and policy/governance)	The role of private companies in addressing climate change should be restructured away from net-zero targets and toward a "reduce and support" model in which companies commit to: (1) obtain an emissions-reduction goal; (2) declare any residual emissions; and (3) contribute to a global fund at a level commensurate with nonabateable emissions.

ARTICLE

CLIMATE CHOICE ARCHITECTURE

by Felix Mormann

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I. Introduction

Successful climate change mitigation and adaptation require behavioral change at an unprecedented scale.[1] The global climate crisis calls for the rethinking of deeply engrained habits. Fortunately, behavioral research has proven that minor tweaks to the choice environment can usher in a paradigm shift toward more climate-friendly decisionmaking. This Article makes the case for greater reliance on choice architectural nudges as a catalyst for more climate-friendly decisionmaking across a wide range of contexts. The time has come to place individual behavior front and center in the global response to climate change.

Subtle changes to the decision environment, or choice architecture, have enabled stakeholders to overcome biases and other cognitive limitations, resulting in welfare-enhancing choices across a wide range of contexts.[2] Made famous by Nobel Laureate Richard Thaler and Prof. Cass Sunstein in their seminal book *Nudge*, choice architecture refers to the way the context in which we make decisions is organized.[3]

As carbon pricing initiatives gather momentum, climate choice architecture offers a powerful complement to carbon taxes and cap-and-trade regimes.[4] Recent scholarship suggests that voter opposition to carbon pricing policies is largely a function of the electorate's biases and other cognitive limitations.[5] Choice architecture has been proven to help voters and other decisionmakers overcome these and other cognitive challenges in a wide range of contexts.[6]

From a political economy perspective, nudges have the potential to create much-needed common ground amidst the growing political polarization over climate change.[7] Studies have repeatedly shown that, whatever their disagreement over regulatory interventions, both Democrats and Republicans overwhelmingly support the use of nudges on high-profile policy issues.[8]

This Article does not advocate for climate nudges as a wholesale substitute for command-and-control mandates, market-based incentives, or other forms of regulation. But even within, and certainly outside, these domains, nudges can complement existing regulation to enhance the efficacy, efficiency, and equity of public policy.

Bipartisan support and well-documented successes notwithstanding, choice architectural nudges have produced their share of discontents. But even the most fervent nudge critics would struggle to find fault with the kind of externality-oriented, educative climate choice architecture proposed here to help stakeholders make less carbon-intensive choices.[9]

This Article makes three novel and distinct contributions to the literature, proceeding as follows. Part II offers a functionally derived, impact-oriented taxonomy of nudges to help policymakers and private actors identify the choice architectural tools that best serve their climate objectives.[10] Part III presents the empirically grounded argument why, and how, nudges can improve the efficacy, efficiency, and equity of public and private governance responses to the climate crisis.[11] Part IV engages with critiques of the efficacy and ethics of nudges and explains the capacity of choice architecture to enhance the equity of climate policy.[12]

Editors' Note: This Article is adapted from Felix Mormann, *Climate Choice Architecture*, 64 B.C. L. Rev. 1 (2023), *and used with permission.*

1. *See* Elke U. Weber, *Climate Change Demands Behavioral Change: What Are the Challenges?*, 82 Soc. Rsch. 561, 561 (2015).
2. *See generally* Automatic: Changing the Way America Saves (William G. Gale, J. Mark Iwry, David C. John & Lina Walker eds., 2009); Richard H. Thaler, Misbehaving: The Making of Behavioral Economics 309-22 (2016); Richard H. Thaler & Shlomo Benartzi, *Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving*, 112 J. Pol. Econ. S164, S169 (2004).
3. *See* Richard H. Thaler & Cass R. Sunstein, Nudge: The Final Edition 3 (Penguin Books 2021).
4. *See infra* Section III.C. Cap-and-trade programs set a limit on carbon emissions from particular industries, while also providing for markets to buy and sell "emission allowances." Michael Hiltzik, *Column: No Longer Termed a "Failure," California's Cap-and-Trade Program Faces a New Critique: Is It Too Successful?*, L.A. Times (Jan. 12, 2018), https://www.latimes.com/business/hiltzik/la-fi-hiltzik-captrade-20180111-story.html [https://perma.cc/3SW3-AX7R].
5. *See* Gary M. Lucas Jr., *Voter Psychology and the Carbon Tax*, 90 Temp. L. Rev. 1, 13-37 (2017).
6. *See infra* Part II.
7. *See infra* Section III.D.
8. *See, e.g.*, Cass R. Sunstein, *Do People Like Nudges?*, 68 Admin. L. Rev. 177, 187 tbl.1 (2016).
9. *See* Brian Galle, *Tax, Command . . . or Nudge?: Evaluating the New Regulation*, 92 Tex. L. Rev. 837, 878, 890 (2014).
10. *See infra* notes 13-36 and accompanying text.
11. *See infra* notes 37-62 and accompanying text.
12. *See infra* notes 63-76 and accompanying text.

II. The Choice Architect's Toolkit

Human decisionmaking is embedded into a structure of contextual and task features.[13] The choice architect's power flows from the observation that human preferences are malleable, for they are the construct of our choice environment.[14] There are many ways to present options to decisionmakers and different presentations will often result in different choices. To help policymakers and practitioners identify what type of nudge best advances their climate objectives, this Article adopts a functionally derived taxonomy that groups the tools of choice architecture into three categories.[15]

A. Decision Information

Well-established limits in the human capacity for processing information call on choice architects to present decision-relevant information in a format that is easy to digest and understand.[16] Choice architectural contributions in this space can assume a variety of forms, including: (1) the translation of available information into more meaningful formats, rendering relevant but not readily available information visible; and (2) the provision of social reference points.[17]

Translational strategies often rely on the simplification of existing information in a given choice environment to promote better processing.[18] Whereas translational efforts aim to make existing information easier to process, other tools in the choice architect's kit seek to render previously unavailable but decision-relevant information more visible. An illustrative example is the requirement for restaurants to post hygiene ratings at the entrance, enabling potential patrons to incorporate this previously hidden but decision-relevant information into their dining choices.[19]

Social reference points acknowledge that humans make decisions "in a social and cultural environment," often looking to conform with the behavior of majorities or opinion leaders.[20] Social norms can be injunctive, establishing what the decisionmaker should do, or descriptive, communicating what other individuals are doing.[21]

B. Decision Structure

Choice architects may direct their efforts at the arrangement of options or the decisionmaking format. Common techniques in this space include setting defaults and rearranging the composition of options.[22]

A default is the option that is activated should the decisionmaker not take the initiative to select a different option.[23] The literature traces the power of defaults back to three factors.[24] First, decisionmakers often assume that the default represents an intentional recommendation.[25] Second, people may view the default as an option they already possess, making it harder to give up because of the so-called endowment effect.[26] Third, opting out of a default takes more effort than keeping it.[27]

Cognitive limitations open the door for heuristics and biases, such as the diversification bias, that lead decisionmakers to allocate their attention and other mental resources evenly across all available choice categories.[28] Choice architects can harness diversification and other biases in a variety of ways, from how these architects arrange healthy and unhealthy food items on a restaurant menu[29] to splitting safety, fuel economy, and other practically important attributes of a vehicle into a greater number of subcategories while condensing less important attributes, such as cupholders and audio systems, into a single category.[30]

C. Decision Assistance

Many people suffer from "deficits in self-control such as temptation or procrastination."[31] Choice architecture can help overcome these deficits through commitment devices that promote greater follow-through. In the United Kingdom (U.K.), text reminders have provided effective decision assistance to learners in adult literacy and numeracy

13. *See* Adrian R. Camilleri & Rick P. Larrick, *Choice Architecture*, *in* Emerging Trends in the Social and Behavioral Sciences 1 (Robert A. Scott, Stephen M. Kosslyn & Marlis Buchmann eds., 2015).
14. *See generally* The Construction of Preference (Sarah Lichtenstein & Paul Slovic eds., 2006).
15. *See* Robert Münscher et al., *A Review and Taxonomy of Choice Architecture Techniques*, 29 J. Behav. Decision Making 511, 514 (2016).
16. *See* George A. Miller, *The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information*, 63 Psych. Rev. 81, 95-96 (1956).
17. Readers interested in exploring more than the illustrative examples provided are encouraged to consult Münscher et al., *supra* note 15, at 514-16.
18. *See, e.g.*, Richard P. Larrick & Jack B. Soll, *The MPG Illusion*, 320 Science 1593, 1593 (2008) (demonstrating how consumers systematically misunderstand the miles-per-gallon metric for vehicular fuel efficiency, and how a simple fix can offer dramatic improvements).
19. *See* Paul A. Simon et al., *Impact of Restaurant Hygiene Grade Cards on Foodborne-Disease Hospitalizations in Los Angeles County*, J. Env't Health, Mar. 2005, at 32, 34 (reporting a 13% decrease in hospitalizations for foodborne illness following the requirement for restaurants to display their hygiene ratings).
20. Münscher et al., *supra* note 15, at 516.
21. Erez Yoeli et al., *Behavioral Science Tools to Strengthen Energy and Environmental Policy*, 3 Behav. Sci. & Pol'y, no. 1, 2017, at 75. *See also* Noah J. Goldstein et al., *A Room With a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels*, 35 J. Consumer Rsch. 472, 474 (2008).
22. Readers interested in exploring more than the illustrative examples provided are encouraged to consult Münscher et al., *supra* note 15 at 516-19.
23. Camilleri & Larrick, *supra* note 13, at 3.
24. *See* N. Craig Smith et al., *Choice Without Awareness: Ethical and Policy Implications of Defaults*, 32 J. Pub. Pol'y & Mktg. 159, 161 (2013).
25. *Id.*
26. *See* Daniel Kahneman et al., *Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5 J. Econ. Persps. 193, 194-97 (1991) (The endowment effect refers to "the fact that people often demand much more to give up an object than they would be willing to pay to acquire it . . . .") *Id.* at 194.
27. Smith et al., *supra* note 24, at 161.
28. *See* Craig R. Fox et al., *How Subjective Grouping of Options Influences Choice and Allocation: Diversification Bias and the Phenomenon of Partition Dependence*, 134 J. Experimental Psych. 538, 540 (2005); *see also* Thomas W. Doellman et al., *Alphabeticity Bias in 401(k) Investing*, 54 Fin. Rev. 643, 655 (2019).
29. *See* Fox et al., *supra* note 28, at 545-46.
30. *See* Jolie M. Martin & Michael I. Norton, *Shaping Online Consumer Choice by Partitioning the Web*, 26 Psych. & Mktg. 908, 911-13 (2009).
31. Münscher et al., *supra* note 15, at 519.

programs, increasing attendance rates by nearly 20%.[32] The choice architect's toolbox also features public commitment techniques that leverage external pressure and the fear of reputational damage to foster better follow-through.[33]

D. Government as Choice Architect

The first government to act as a choice architect was the U.K.'s Behavioural Insights Team, better known as the "Nudge Unit."[34] For example, a campaign of letters from Her Majesty's Revenue and Customs to citizens behind on their taxes underscores the importance of decision information. Choice architectural variations in the letters' framing and tone produced dramatically different payment outcomes.[35] Consistent with other evidence supporting the power of choice architecturally designed decision structures, changing the default from opt-in to automatic enrollment in workplace pensions, requiring disinterested employees to opt out, has significantly improved participation in retirement savings programs among U.K. employees.[36]

III. The Case for Climate Choice Architecture

The relatively sparse deployment of choice architecture to date in the war on carbon raises the question of what, if anything, nudges can contribute to climate policy.

A. Nudges Are Nimble and Adaptive

Scientific uncertainty abounds not only across but also within scenarios because global warming, sea-level rise, and other symptoms of our changing climate do not progress in linear fashion.[37] If scientific uncertainty is not enough to keep policymakers on their toes, then unexpected disruptions to the economic landscape are all but certain to do the trick. The proliferation of solar, wind, and other low-carbon renewables, for example, has exceeded even the most optimistic projections, requiring policymakers to make repeated course adjustments. At the turn of the new millennium, the U.S. Energy Information Administration predicted that "[l]ess than 400 megawatts of renewable generating capacity" would be built between 2012 and 2020.[38] In reality, nearly 16,000 megawatts of new wind and solar capacity were added in 2015 alone.[39]

Nudges fall on the dynamic side of the policymaking continuum because they are often easier to adopt and adapt than more traditional legislative and regulatory interventions. Choice architecture is at its most effective when deployed at the interface between regulator and regulated, where biases, heuristics, and cognitive limitations are most prominent.[40] The link connecting policymaker to citizenry tends to offer considerable discretion to the implementing agency.

B. A Proven Track Record of Nudges in Environmental Policy

Choice architecture has a proven track record of successfully nudging more pro-environment behavior in a variety of domains. Indeed, nudges have achieved impressive results in the promotion of waste reduction and water conservation.[41] Energy conservation and the transition to "greener" sources of energy have produced some of the biggest success stories for choice architecture in environmental policy. A number of field experiments have confirmed the power of social norm-based campaigns to nudge households to reduce their electricity consumption.[42]

C. Choice Architecture Complements Carbon Pricing

Thoughtful nudges can help mitigate some of the typical shortcomings of carbon taxes and cap-and-trade programs, including leakage, agency problems, and limitations in

32. *See* Michael Sanders et al., Using Text Reminders to Increase Attendance and Attainment: Evidence From a Field Experiment 1 (Mar. 8, 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3349116 [https://perma.cc/GX8A-7MPM].
33. *See, e.g.*, Prashanth U. Nyer & Stephanie Dellande, *Public Commitment as a Motivator for Weight Loss*, 27 Psych. & Mktg. 1, 7 (2010).
34. *See generally* David Halpern, Inside the Nudge Unit: How Small Changes Can Make a Big Difference (Ebury Press 2016).
35. *See* Michael Hallsworth et al., *The Behavioralist as Tax Collector: Using Natural Field Experiments to Enhance Tax Compliance* 4 (Nat'l Bureau of Econ. Rsch., Working Paper No. 20007, 2014) (observing a treatment effect of almost £2.4 million in additional taxes paid within 23 days for the most successful letter variant).
36. David Halpern, *Setting Smarter Defaults for Workplace Pensions*, Behav. Insights Team: Our Blog (Oct. 6, 2016), https://www.bi.team/blogs/setting-smarter-defaults-for-workplace-pensions/ [https://perma.cc/TE87-HJFC].
37. Richard B. Alley et al., *Abrupt Climate Change*, 299 Science 2005, 2007-2008 (2003).
38. Energy Info. Admin., Annual Energy Outlook 2000 With Projections to 2020, at 72 (1999).
39. For background on the 7,286 megawatts of new solar capacity installed in 2015, see Press Release, Solar Energy Indus. Ass'n, U.S. Solar Market Sets New Record, Installing 7.3 GW of Solar PV in 2015 (Feb. 19, 2016), https://www.seia.org/news/us-solar-market-sets-new-record-installing-73-gw-solar-pv-2015 [https://perma.cc/WAJ9-NVRK]. For background on the 8,599 megawatts of new wind capacity installed in 2015, see *Wind Energy in the United States*, Am. Wind Energy Ass'n, https://a112.awea.org/wind-101/basics-of-wind-energy/wind-facts-at-a-glance [https://perma.cc/SV66-LWZT] (click the "2015" bar on the "Cumulative U.S. Wind Capacity" bar chart to view the underlying data referenced).
40. *See* The Construction of Preference, *supra* note 14, at 37.
41. *See* Goldstein et al., *supra* note 21, at 472-73; *see also* Aristeidis Theotokis & Emmanouela Manganari, *The Impact of Choice Architecture on Sustainable Consumer Behavior: The Role of Guilt*, 131 J. Bus. Ethics 423, 426 (2015) (suggesting that people feel guilty when making choices that are bad for the environment, and that policy design can exacerbate or mitigate these feelings).
42. *See, e.g.*, Jessica M. Nolan et al., *Normative Social Influence Is Underdetected*, 34 Personality & Soc. Psych. Bull. 913, 917 (2008) ("[B]eliefs of how often their neighbors tried to conserve showed a strong correlation with respondents' own reported conservation efforts."); Hunt Allcott, *Social Norms and Energy Conservation*, 95 J. Pub. Econ. 1082 (2011) (finding that the households that used the most electricity had the largest decrease in consumption after being informed of their power usage relative to their neighbors).

coverage. Some models suggest that nearly half of the emissions reductions achieved by carbon pricing in a given jurisdiction may simply shift to neighboring jurisdictions without a price on carbon.[43] Default enrollment of electricity customers in low-carbon plans and other choice architectural nudges—in jurisdictions with and without carbon pricing—can help reduce leakage and resource shuffling to maximize net emissions reductions.[44]

Recent scholarship suggests that the tepid political support for a carbon tax or cap-and-trade policies may be rooted in a number of biases and heuristics that negatively affect the electorate's perception of carbon pricing policies.[45] Behaviorally informed campaigns can target these limitations to enhance the political viability of carbon policies.

D. A Bridge Over the Partisan Chasm of Climate Politics

The partisan divide over climate change is widely thought to follow the same fault lines as the age-old conflict over big government versus market fundamentalism.[46] Choice architectural policy interventions could help build a bridge of this topography of conflict. After all, researchers find no evidence of partisan differences in the American public's response to nudges when described without discussion of specific policy objectives.[47] Even when connected to specific policy goals and policymakers, Democrats and Republicans concurred in their overwhelming approval of recent nudge policies.[48]

Deeply rooted skepticism of anthropogenic climate change does not require the wholesale dismissal of nudges as catalysts for greater climate action. Rather, data gathered via public opinion polls suggest that choice architects should use their repertoire of options to educate U.S. voters and policymakers on the findings of climate science,[49] then deploy nudges to create consensus over what form of action should be taken.

E. Creating Momentum for Climate-Friendly Social Norms

Descriptive social norms reflect "predominant attitudes and patterns of behavior in a social group."[50] Reference to these positive descriptive norms can help strengthen already dominant behavior, as illustrated by the impressive success of norm-based campaigns for recycling in the United States[51] and for water conservation in Australia.[52]

The stickiness of prevailing attitudes and conduct does not bode well for social norm-based efforts to encourage more climate-friendly behavior because reduction of the meat content in our diets, less air travel, and other recommended carbon-conscious conduct are neither popular nor dominant patterns of behavior.[53] But in situations where "only a minority of people engage in the desired behavior, a dynamic norm that communicates the upward trend" in the preferred conduct's practice has proven significantly more effective than reliance on "static minority norm[s]."[54] Dynamic social norms prompt people to "anticipate a changed future" to which they are willing to adjust their behavior, especially when the observed change in others' behavior reflects effort and, hence, the importance of the cause.[55]

F. Ample Opportunities for Private Climate Governance

Financial markets have emerged as a key battleground over private climate governance, as investors push reticent companies to adopt more climate-friendly business practices.[56] Financial experts, meanwhile, warn that "capital is flowing

43. *See* Justin Caron et al., *Leakage From Sub-National Climate Policy: The Case of California's Cap-and-Trade Program*, 36 Energy J. 167, 167 (2015) (reporting that 45% of emissions reductions in California increase emissions in neighboring states).
44. For a survey of choice architecture's proven track record of nudging ratepayers toward low-carbon electricity plans, see *supra* note 42 and accompanying text.
45. *See* Lucas, *supra* note 5, at 37.
46. Riley E. Dunlap et al., *The Political Divide on Climate Change: Partisan Polarization Widens in the U.S.*, Env't: Sci. & Pol'y for Sustainable Dev., Sept./Oct. 2016, at 15; Aaron M. McCright & Riley E. Dunlap, *The Politicization of Climate Change and Polarization in the American Public's Views of Global Warming, 2001-2010*, 52 Socio. Q. 155, 178-80 (2011).
47. Janice Y. Jung & Barbara A. Mellers, *American Attitudes Toward Nudges*, 11 Judgment & Decision Making 62, 63 (2016).
48. *See* Sunstein, *supra* note 8, at 187 & tbl.1.
49. *See supra* Section II.A.
50. *E.g.*, Adrian Rinscheid et al., *What Shapes Public Support for Climate Change Mitigation Policies? The Role of Descriptive Social Norms and Elite Cues*, 5 Behav. Pub. Pol'y 503, 504 (2021); Kathryn L. Doherty & Thomas N. Webler, *Social Norms and Efficacy Beliefs Drive the Alarmed Segment's Public-Sphere Climate Actions*, 6 Nature Climate Change 879, 880 (2016).
51. P. Wesley Schultz, *Changing Behavior With Normative Feedback Interventions: A Field Experiment on Curbside Recycling*, 21 Basic & Applied Soc. Psych. 25, 27, 34 (1999).
52. Andrea Walton & Margee Hume, *Creating Positive Habits in Water Conservation: The Case of the Queensland Water Commission and the Target 140 Campaign*, 16 Int'l J. Nonprofit & Voluntary Sector Mktg. 215, 219 (2011) (attributing water conservation to multi-pronged approach, including distributing information, "naming and shaming" individuals).
53. *See Sources of Greenhouse Gas Emissions*, U.S. Env't Prot. Agency, https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions [https://perma.cc/2362-NHYS] (Aug. 5, 2022); Richard L. Revesz & Burcin Unel, *Managing the Future of the Electricity Grid*, 41 Harv. Env't L. Rev. 43, 74, 86 (2017); Joseph Poore & Thomas Nemecek, *Reducing Food's Environmental Impacts Through Producers and Consumers*, 360 Science 987, 990-91 (2018); Kayla Karimi, *Stopping Livestock's Contribution to Climate Change*, 36 UCLA J. Env't L. & Pol'y 347, 350-51 (2018); Jonathan Lovvorn, *Clean Food: The Next Clean Energy Revolution*, 36 Yale L. & Pol'y Rev. 283, 301-06 (2018).
54. *Id.*; *see* Chad R. Mortensen et al., *Trending Norms: A Lever for Encouraging Behaviors Performed by the Minority*, 10 Soc. Psych. & Personality Sci. 201, 208 (2019); Gregg Sparkman & Gregory M. Walton, *Dynamic Norms Promote Sustainable Behavior, Even if It Is Counternormative*, 28 Psych. Sci. 1663, 1673 (2017).
55. Sparkman & Walton, *supra* note 54, at 1672.
56. *See* Madison Condon, *Externalities and the Common Owner*, 95 Wash. L. Rev. 1, 6 (2020).

freely in the wrong direction, emissions continue to rise, catastrophic climate-related damages proliferate, and the threat of truly cataclysmic impacts increase[s]."[57]

Adding a "climate rating" to the performance metrics commonly considered by investors can boost investment in more climate-friendly stocks by over 50%.[58] Remarkably, this climate nudge proved highly effective even when other competing stocks boasted stronger performance data.[59] Additionally, climate-conscious employers can use their clout to structure the menu of investment options accordingly, featuring more sustainable funds more prominently or altogether dropping funds with a poor sustainability record.[60]

G. Climate Nudging in Action: Carbon Labels for Food

The food system has largely been overlooked, even when its sizeable carbon footprint promises ample potential for mitigating climate change.

A recent study conducted by an Australian-American research team asked participants to choose from among a set of food items, displayed with carbon labels in the treatment condition and without such labels in the control condition.[61] The observed results confirm the power of climate nudges, with participants in the treatment condition choosing less carbon-intensive foods more frequently than their counterparts in the control condition. The food sector is especially attractive for carbon labeling, not only because of its sizeable contribution to global greenhouse gas emissions, but also because studies indicate actual consumer demand for carbon labels.[62]

IV. Nudge Policies and Their Discontents

Critics question both the efficacy and the ethics of choice architectural interventions.

A. Efficacy Doubts

Not all nudges work as intended. A California energy-conservation program illustrates the potential for nudges to backfire.[63] A local Californian utility company sent energy reports to households informing them how their energy use compared to that of their neighbors. Democrats and environmentalists responded by lowering their energy consumption, whereas Republicans increased air conditioning use and kept the lights on, driving their energy usage up.[64]

A recent meta-analysis of behaviorally informed interventions posits that nudges fail more frequently than is commonly known and that these failures provide valuable lessons for choice architects.[65] Professor Sunstein reminds us that, in the context of choice architecture:

> [w]hat matters is welfare, not effectiveness . . . . A strong reason for nudges, as distinguished from more aggressive tools, is that they preserve freedom of choice and thus allow people to go their own way. In many contexts, that is indeed a virtue, and the ineffectiveness of nudges, for some or many, is nothing to lament.[66]

Climate change has been aptly characterized as a "super wicked problem" that defies resolution because of the vast web of uncertainties, interdependencies, circularities, and conflicting stakeholder interests that are involved in any attempt at developing a solution.[67] Add to that the extreme urgency and daunting scope of the challenge at hand and it becomes obvious why climate nudges should be viewed as but one type of many policy tools to be deployed. In the words of Nobel Laureate Thaler: "We can't solve climate change with nudging, but we can't solve it without nudging."[68]

B. Ethical Concerns

Opponents often condemn nudge policies as paternalistic government interventions with potentially adverse effects on the autonomy and welfare of decisionmakers.[69] But the reality is that every decision we make takes place in a

57. Statement by Robert B. Litterman, Partner, Kepos Capital, for the Senate Special Comm. on the Climate Crisis, Climate Change Is a Risk Management Failure That Can and Must Be Fixed Immediately (Mar. 12, 2020), https://www.schatz.senate.gov/imo/media/doc/Litterman%20Testimony%20short%20version%20.pdf [https://perma.cc/25G3-HJVS].
58. *See* Felix Mormann & Milica Mormann, *The Case for Corporate Climate Ratings: Nudging Financial Markets*, 53 Ariz. St. L.J. 1209, 1272 (2021).
59. *Id.* at 1279.
60. *See* Doellman et al., *supra* note 28, at 645.
61. Camilleri & Larrick, *supra* note 13, at 57 fig.3.
62. *See* Meike Guenther et al., *Carbon Labeling and Consumer Attitudes*, 3 Carbon Mgmt. 445, 452 (2012) (reporting consumer preference for carbon labels based on survey experiments in Japan and the U.K.); Hanna Hartikainen et al., *Finnish Consumer Perceptions of Carbon Footprints and Carbon Labelling of Food Products*, 73 J. Cleaner Prod. 285, 285 (2014) (same for Finnish consumers).
63. *See* Ray Fisman, *Nudges Gone Wrong*, Slate (Apr. 23, 2010), https://slate.com/business/2010/04/a-program-designed-to-reduce-energy-consumption-persuaded-some-republicans-to-consume-more.html [https://perma.cc/KK5X-4YL5].
64. *Id.*; *see also* Dora L. Costa & Matthew E. Kahn, *Energy Conservation "Nudges" and Environmentalist Ideology: Evidence From a Randomized Residential Electricity Field Experiment*, 11 J. Eur. Econ. Ass'n 680, 681 (2013).
65. *See* Magda Osman et al., Opinion, *Learning From Behavioural Changes That Fail*, 24 Trends Cognitive Sci. 969, 970 (2020); *see also* Cass R. Sunstein, *Nudges That Fail*, 1 Behav. Pub. Pol'y 4, 6 (2017).
66. Sunstein, *supra* note 65, at 22 (citing Cass R. Sunstein, The Ethics of Influence: Government in the Age of Behavioral Science (2016)).
67. *See* Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 Cornell L. Rev. 1153, 1159-60 (2009) (adding time pressure, lack of institutional framework, and other exacerbating traits of the climate crisis).
68. Stephen J. Dubner, *All You Need Is Nudge*, Freakonomics Radio (Sept. 8, 2021), https://freakonomics.com/podcast/all-you-need-is-nudge/ [https://perma.cc/KDN3-N7PN].
69. *See, e.g.*, Joshua D. Wright & Douglas H. Ginsburg, *Behavioral Law and Economics: Its Origins, Fatal Flaws, and Implications for Liberty*, 106 NW. U. L. Rev. 1033, 1069-75 (2012); Jeffrey J. Rachlinski, *The Uncertain Psychological Case for Paternalism*, 97 Nw. U. L. Rev. 1165, 1222-23 (2003); Claire A. Hill, *Anti-Anti-Anti-Paternalism*, 2 N.Y.U. J.L. & Liberty 444, 445-48 (2007); Edward L. Glaeser, Essay, *Paternalism and Psychology*, 73 U. Chi. L. Rev. 133, 150-56 (2006).

choice environment that already exists. Nudge policies do not create novel choice architecture where there previously was none; they merely seek to modify existing choice environments that already affect our decisionmaking.

A second, more nuanced caveat cautions against default rules and similar tweaks to the decision structure[70] that seek to guide a stakeholder's decisionmaking in a certain predetermined direction are inherently value-laden.[71] Nudge critics understandably argue that choice architects cannot possibly know in every instance what the best choice option is for every decisionmaker.[72] It is hard to dispute the critique that default rules and similar directionally weighted nudges constitute a form of paternalism that, by definition, will not be universally welfare-enhancing. Then again, pareto optimality in the sense of making everyone better off and no one worse off is beyond the reach of virtually all law and policy.[73]

Informational nudges register far lower on the paternalism spectrum. The ethics case for informational choice architecture is especially strong when such measures seek to remedy externalities and other market failures. With their profoundly negative impact on social welfare, the greenhouse gas emissions that drive global warming represent one of the most daunting challenges of our time. Accordingly, even the most fervent nudge critics would struggle to find fault with the type of externality-oriented, educative climate choice architecture proposed in this Article.[74]

Attempts to address the profound justice and equity implications of climate policy and action commonly seek to promote more widespread public participation in the deliberations and decisions how to respond to global warming and climate change.[75] Climate nudges can help support and advance top-down institutional change by empowering more informed bottom-up decisionmaking from a broad range of stakeholders, whose collective carbon footprint represents nearly half of U.S. greenhouse gas emissions.[76]

V. Conclusion

This Article offers a functionally derived, impact-oriented taxonomy of choice architecture to help policymakers and private actors identify the behavioral tools that best serve their climate objectives. Behaviorally informed policies have proven highly effective at nudging decisionmakers toward welfare-enhancing choices in a wide range of contexts. Along the way, nudge campaigns have created rare common ground amidst polarized partisan politics. Properly integrated into a broader suite of policies, climate choice architecture can improve the efficacy, efficiency, and equity of public policy and deliver more impactful private governance action on climate change.

The ethics of nudges have been the subject of heated debate as opponents decry nudging as a paternalistic wolf in sheep's clothing. But the paternalism argument holds little water with the externality-oriented, educative climate choice architecture envisioned in this Article. Moreover, climate choice architecture can mitigate growing concern over the equity and justice of climate policy by turning previously passive stakeholders into active decisionmakers along the path to a low-carbon economy.

The time has come to harness the power of nudges, at both the institutional and individual level, in public and private governance responses to the climate crisis.

70. *See supra* Section II.B.
71. *See* On Amir & Orly Lobel, *Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy*, 108 Colum. L. Rev. 2098, 2120-24 (2008).
72. *See* John Stuart Mill, On Liberty 74 (Elizabeth Rapaport ed., Hackett Publ'g Co. 1978) (1859).
73. *See, e.g.*, Guido Calabresi, *The Pointlessness of Pareto: Carrying Coase Further*, 100 Yale L.J. 1211, 1212 (1991) (noting that all policy choices "disadvantag[e] at least someone").
74. *See* Galle, *supra* note 9, at 872, 890-92.
75. *See, e.g.*, Shelley Welton, *Decarbonization in Democracy*, 67 UCLA L. Rev. 56, 59 (2020); Felix Mormann, *Clean Energy Equity*, 2019 Utah L. Rev. 335, 376.
76. *See* Shui Bin & Hadi Dowlatabadi, *Consumer Lifestyle Approach to US Energy Use and the Related CO_2 Emissions*, 33 Energy Pol'y 197, 197 (2005).

NUDGE STRATEGIES: THE NEED FOR A SYSTEMATIC APPROACH

by Lisa Dilling

Lisa Dilling is Associate Chief Scientist at the Environmental Defense Fund.

Thank you so much to the organizers for inviting me. Thank you to all the students who put together this amazing effort to select the article and then invite all of us. I really appreciate being here and you inviting me.

I want to say first of all how much I enjoyed reading Prof. Felix Mormann's article. It provides a comprehensive framework and a masterful summary of the state of knowledge on behavioral nudges as they are applied to environmental outcomes. It really does a great job of summarizing the literature and also crosses over from energy into water as well. I support his conclusion that nudges can be very powerful instruments for achieving climate goals.

First, I want to set out the scale of the challenge that we are dealing with here. Professor Mormann has really put this forward in his article as well. One of the reasons we want to focus on nudges or anything to do with climate choice architecture is simply because of the scale of the challenge. We talk about climate change as an issue, and we are seeing, in fact, that we have signs of hope. We have record sales of electric vehicles. We have record growth of renewables on the grid. We have new commitments to reduce leakage from methane. There are some real signs of hope, but at the same time, our emissions continue to go up.

We have hundreds of millions of people living without access to electricity in the world, so this means that we are going to have an increasing demand for energy. Unfortunately, fossil fuels still provide 80% of our energy. The scale of the challenge is really huge and, as we've added types of energy in the past from coal to oil to natural gas, those have been additive. We have continued to increase our use of energy over time. It hasn't been as much that we phase away any of these sources of energy. We just added them as our use of energy has expanded.

Focusing on the demand side (how much energy we are using) is actually an inexpensive way to deal with this increasing need for energy, because we do need to provide some energy to parts of the world that don't have energy now. It increases our quality of life so much, but if we can reduce the demand a little bit, it just means we have to build fewer renewable energy generation plants or put in fewer transmission lines. This is worth focusing on. It really makes economic sense to reduce the demand side.

In case you haven't read the book called *Nudge* by Richard Thaler and Cass Sunstein, I want to distinguish what we mean by a "nudge." Professor Mormann mentioned this, but there are many ways to steer climate choices, and not all of them are nudges. Thaler and Sunstein define this as any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives.[1]

To count as a mere nudge, the intervention must be easy and cheap to avoid. In other words, it doesn't force you to do anything. It just kind of nudges you. Nudges are not mandates. For example, putting fruit at eye level counts as a nudge. Banning junk food does not.

I want to offer three points in response to this excellent article and close on a suggestion for future work. The first point I want to highlight, and that Professor Mormann lays out in great detail in the article, is the complex way that nudges play out in real life. We have research examples. We have how we think it might work in theory, and we have a lot of actual experiments in the real world—and even policy implementations—we can look at.

This shows that there is a lot of complexity to nudges. They have to do with both the way the nudges are designed and who we are as people receiving those nudges. Those two can interact in ways that are very unexpected and that we might not actually anticipate or intend. The literature is replete with things like age, political affiliation, and cultural background—who you are as a person can really affect whether or not you respond to a nudge positively or whether you not only reject it but go in the opposite direction that was trying to be nudged.

It is important for those researching in this space to be working with practitioners of policy to try to design policies for nudges together, because they can learn from each other in terms of: what practically could work; what our theories say; and what our policy experience actually says.

Editors' Note: Lisa Dilling's Comment is based on an edited transcription of her remarks at the Environmental Law and Policy Annual Review conference. See 2023-2024 Environmental Law and Policy Annual Review Conference, available at https://www.eli.org/events/2024-environmental-law-and-policy-annual-review-elpar-conference.

1. Richard H. Thaler & Cass R. Sunstein, Nudge (2021).

Those communities can help accelerate where we get to on nudges if we work together.

Second, I want to pick up on the theme that Professor Mormann mentioned about climate change being at its most politicized right now. This is a really important point and an important issue for nudges, even though we might imagine nudges are in the background. Putting the fruit at eye level, for example, sounds innocuous—right? But as we know, in our society, people find out quickly that we're trying to do nudges and that it is a deliberate choice.

I am not sure I buy the idea that you can bring over the nonpartisan state of nudge policy and apply it to climate change and that it will help. Climate change is polarized enough that it might actually work in the other direction and become a polarized situation for nudge deployment. I think that we would need to test the hypothesis that nudge policy can help with climate change. It might, unfortunately, still result in polarization.

The other thing I really picked up on from the article is this critique of nudges as paternalistic. We have other words for this in the United States, like "big brother" or the "nanny state." Nudges don't always go over well, at least in the United States. I know there has been some research on this, but this could be a good focus for the future: Which nudge policies have the most chance of success across individuals with a range of political viewpoints? If you are going to try to change demand for energy, you need to be thinking about how your nudges work across the spectrum of political viewpoints.

This is just a hunch, but many studies that we do are done on college campuses with undergraduates in the laboratory or are natural experiments within cities that already are predisposed to caring about climate change and looking for what might work. Those are not necessarily environments where we might need to be deploying nudges in the real world. Diversifying the cultural context and situations where we are using nudges would give a fuller picture of their potential.

Third, Professor Mormann acknowledges that the evidence on the effectiveness of nudges is mixed. One area I especially wanted to bring out that needs more exploration and rigor is information provision. Professor Mormann mentioned fuel-economy labels for cars. There is a lot of work on information labels and, unfortunately, labels can be confusing and lead consumers to different conclusions than intended. The good news is there are ways to produce and put labels on things that are super-informative. Seals of approval, such as Energy Star,[2] are a good example. Understanding all the energy details for a washer can be difficult for people who may not be that interested. Even salespeople don't know how to interpret the information. But an Energy Star label is pretty clear—you know the product has a good Energy Star rating.

I want to end with a few suggestions to help accelerate the design and implementation of nudges. One thing I would like to argue for is a community of practice around this area. Communities of practice are basically communities of people who are engaged in trying to do this, generally in the policy sphere on the ground. The one I am familiar with is the Water Utilities Climate Alliance,[3] a group of the largest water utilities in the United States. They are forward-looking at how to manage water for climate change. They sit together. They talk about what they have implemented and whether it worked or did not work. This kind of exchange of actual experience is incredibly helpful. It pushes the field forward, and researchers can engage in that community of practice as well. In addition, conducting more systematic analyses where we can get the greatest bang for the buck in the nudge world is important. Then, we can build in learning and adaptive design into our nudge policies as well because, as Professor Mormann pointed out, they don't always play out the way we intended.

In summary, I agree with Professor Mormann on the potential for nudges and suggest that we double down on a more systematic approach to creating strategies.

2. ENERGY STAR, https://www.energystar.gov/ (last visited June 10, 2024).
3. Water Utility Climate Alliance, https://www.wucaonline.org/ (last visited June 10, 2024).

OPTIMIZING NUDGES FOR CLIMATE CHANGE: INSIGHTS FROM BEHAVIORAL AND ENVIRONMENTAL ECONOMICS

by Anjali Narang

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Prof. Felix Mormann's *Climate Choice Architecture* comprehensively catalogs and classifies different types of nudge interventions that can be used to combat climate change. He argues that choice architecture can complement command-and-control mandates, market-based incentives, and other forms of regulation while also acknowledging its limitations. Despite choice architecture's shortcomings, I wholeheartedly concur that it is an underutilized tool in the environmental policymaker's toolbox. This underutilization is evident in the fact that the Intergovernmental Panel on Climate Change in 2022 reported that sociocultural factors and behavioral change could rapidly reduce greenhouse gas emissions by at least 5%,[1] but the share of research funding related to climate change awarded to the social sciences was only 0.12%.[2]

In this Comment, I make two recommendations drawn from the academic behavioral and environmental economics literature to supplement Professor Mormann's article. First, I urge researchers and practitioners interested in using insights from behavioral economics to mitigate climate change to consider which behavioral barriers are relevant to tackling the particular problem of interest and to apply that understanding of behavioral mechanisms to design and target behavioral interventions. Second, based on the behavioral welfare economics literature on optimal nudges and the environmental economics literature on environmental policy instruments, I advocate that choice architecture's role in climate change mitigation be jointly considered with those of other environmental policy tools. This consideration of the optimal climate change policy mix should be informed by a cost-benefit analysis of the alternative policy options.

I. Identify Behavioral Barriers and Target Nudges

To the author's point that there are different taxonomies of choice architecture, for context, it is first worth noting that behavioral economists tend to use a taxonomy of choice architectural interventions that is based on the "internalities" choice architecture aims to reduce. Individuals generate "internalities" when they make a choice that is not welfare-maximizing, or, in other words, in their best interest. While nudges from the perspective of behavioral economics usually aim to reduce an internality and improve an individual's welfare, climate change nudges can both reduce internalities *and* reduce negative environmental externalities if decisionmakers internalize the environmental costs of their actions.

My first recommendation is that choice architects identify the relevant internalities and behavioral barriers to a desired behavior and then use that information to refine nudge design. Implementing this recommendation requires more exploratory work upfront. On a deeper level, this work would involve developing an evidence-based theory of change and identifying sources of heterogeneity across people in the target population in their behavioral barriers, internalities, the levels of externalities generated by their actions, and their responsiveness to behavioral interventions.

The rationale for this recommendation is that choice architecture that accounts for heterogeneity and distributional impacts is more likely to improve welfare.[3] This

1. Intergovernmental Panel on Climate Change, *Climate Change 2022: Mitigation of Climate Change, Summary for Policymakers*, *in* Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (P.R. Shukla et al. eds., 2022).
2. "Only 0.12% of all research funding was spent on the social science of climate mitigation, spent instead on the natural and technical sciences," Kent D. Messer et al., *Applications of Behavioral Economics to Climate Change*, Nat'l Acads. of Scis., Eng'g, and Med. 4 (2023) (quoting I. Overland & B.K. Sovacool, 2020).
3. Cass R. Sunstein, *The Distributional Effects of Nudges*, Nature Hum. Behav. 6 (2022).

is because heterogeneity is inefficient; it creates a wedge between who responds to a behavioral intervention and who benefits from it the most, hampering individuals from sorting into the behavior that is the most beneficial for them.[4] Targeted nudges, however, could address the inefficiencies of heterogeneity. Indeed, "one-size-fits-all solutions . . . provide very weak generalizations"[5] because human decisionmaking is not homogeneous or predictably (ir)rational.[6] It is additionally worth asking not only whether a nudge needs to be targeted, but also whether it is "'well-targeted': does it primarily affect individuals subject to relatively large [market] distortions?"[7] Well-targeted nudges are those that create large benefits for those who make errors or mistakes while imposing small consequences on the rational, welfare-maximizing individuals. Calorie labels are examples of nudges that are not well-targeted.[8] Calorie labels lead to greater reductions in calorie consumption among people with more self-control than less self-control and are also valued more by those with more than less self-control.[9]

At the extreme end of targeted nudges are individually personalized nudges. Personalized nudges might be even more effective than nudges targeted to coarser divisions of people like population subgroups. Opower's customized home energy reports are one prominent successful example of personalized nudges.[10] Big data, machine learning, and artificial intelligence create even more opportunities to personalize nudges at scale, as they can be leveraged to develop predictive models of nudge effectiveness that can generalize and replicate over large and heterogeneous populations.[11]

This recommendation of identifying behavioral barriers for the purpose of targeting nudges can be illustratively applied to the issue of political divide over climate change issues. For example, Democrats might be more receptive to science communication because they lack but value scientific knowledge about anthropogenic climate change.[12] Republicans might be more receptive to neutral framings of policy labels like "fee" or "offset" instead of "tax"[13] because they are averse to references to government intervention.[14]

Despite the benefits of personalizing nudges, it is also worth noting that personalization is costly. One interesting approach to decrease the cost of personalization is to offer a menu of policy choices that allows the decisionmaker to self-select into different nudging interventions.[15] This approach reduces costs by avoiding making decisions ex-ante about personalization. This alternative is especially attractive when data on individual preferences and behavior that could be used as predictors of the outcome of interest are lacking.

II. Evaluate Nudges as a Component of an Optimal Climate Change Policy Bundle

As Professor Mormann pointed out, choice architecture is not a panacea for addressing climate change. While climate choice architecture might be justified by multiple market distortions, including environmental externalities, imperfect information, and "behavioral" biases such as inattention to energy costs, there are likely behavioral and non-behavioral explanations for the gap between actual and "rational" levels of climate change mitigation. Non-behavioral problems might require non-behavioral solutions.[16] A multi-pronged, holistic approach to climate change mitigation that considers both positive and negative interactions between non-pecuniary behavioral and traditional pecuniary approaches like taxes and subsidies is likely needed. For this reason, my second recommendation is that nudges and traditional environmental policy tools be jointly evaluated.

An optimal policy bundle should not only involve decisions about which tools to include in the mix, but also decisions about the optimal level of those tools. The optimal nudge is one that perfectly corrects decisionmaking biases. The optimal level of a nudge should depend on the "nudgeability" of decisionmakers, defined as the ability of the nudge to affect the perceived ("decision") utility from a good.[17] Examples of nudges high in nudgeability include public anti-cigarette campaigns and public pro-recycling campaigns. Heterogeneous internalities in the form of price misperceptions and heterogeneous nudgeability imply that both corrective price policies and nudges are

4. Dmitry Taubinsky & Alex Rees-Jones, *Attention Variation and Welfare: Theory and Evidence From a Tax Salience Experiment*, 85 Rev. Econ. Stud. 2462 (2018).
5. Emir Hrnjic & Nikodem Tomczak, *Machine Learning and Behavioral Economics for Personalized Choice Architecture* (July 3, 2019) (unpublished manuscript), *available at* https://arxiv.org/abs/1907.02100.
6. *Id.*
7. Hunt Allcott et al., *Tagging and Targeting of Energy Efficiency Subsidies*, 105 Am. Econ. Rev. 187 (2015).
8. Sunstein, *supra* note 3.
9. Linda Thunström, *Judgment and Decision Making*, 14 J. Judgm. & Decis. Mak. 11 (2019).
10. Matthew E. Kahn & Peng Liu, *Utilizing "Big Data" to Improve the Hotel Sector's Energy Efficiency: Lessons From Recent Economics Research*, 57 Cornell Hosp. Q. 202, 202-10 (2016).
11. Hrnjic & Tomczak, *supra* note 5.
12. Pew Research Center, *How Americans See Climate Change and the Environment in 7 Charts*, (Apr. 21, 2020), https://www.pewresearch.org/short-reads/2020/04/21/how-americans-see-climate-change-and-the-environment-in-7-charts/.
13. Elke U. Weber & Paul C. Stern, Public *Understanding of Climate Change in the United States*, 66 Am. Psych. 322 (2011) (citing David J. Hardisty et al., *A Dirty Word or a Dirty World? Attribute Framing, Political Affiliation, and Query Theory*, 21 Psych. Sci. 86 (2010)).
14. Gracia Perino et al., *Motivation Crowding in Real Consumption Decisions: Who Is Messing With My Groceries?*, 52 Econ. Inquiry 593 (2014) (citing Edward L. Deci & Richard M. Ryan, *Intrinsic Motivation and Self-Determination in Human Behavior*, Springer Sci. & Bus. Media (1985)).
15. Rebecca Dizon-Ross & Ariel Zucker, *Mechanism Design for Personalized Policy: A Field Experiment Incentivizing Exercise* (2023) (unpublished working paper, University of Chicago).
16. Hunt Allcott & Sendhil Mullainathan, *Behavior and Energy Policy*, 327 Sci. 1204 (2010) (arguing that people are not taking straightforward measures to reduce energy consumption even though it would result in a 23% reduction).
17. Fredrik Carlsson et al., *The Use of Green Nudges as an Environmental Policy Instrument*, 15 Rev. Env't Econ. & Pol'y 225 (2021).

generally needed; however, the more heterogeneity there is, the less desirable is the nudge.

There are also several scenarios in which nudges are potentially more desirable for achieving optimal behavior.[18] One scenario in which nudges might be favored is when traditional policy instruments imperfectly target externalities or internalities. Another scenario in which it might be beneficial to complement an optimal tax with a nudge is when a nudge affects people with a price misperception more than people without price misperceptions. Green nudges can also be useful policy complements to an optimal Pigouvian tax in scenarios in which green nudges generate "warm glow," a feeling of pride generated from consuming green goods. Warm glow might allow behavioral changes initiated in response to nudge-tax policy combinations to persist over time. Lastly, as Professor Mormann pointed out, nudges might be more desirable than taxes that aim to internalize environmental externalities because they are more politically feasible, as evident in the opposition to higher fuel taxes in many countries.

Cost-benefit analysis should also be used to identify the constituent components of the optimal environmental policy bundle. As commonly touted, nudges are often more cost-effective[19] than traditional tools, thought of as low-hanging fruit that can produce results relatively quickly and inexpensively. However, the cost of nudge research and testing is perhaps overlooked in claims about its cost-effectiveness. The context-specificity of nudge impact[20] implies that more research and iterative testing of nudges is needed to make generalizable claims.[21] If nudging requires policy experimentation to be effective at scale, and policy experimentation is expensive, then nudging at scale might become a more expensive endeavor than anticipated. On the other hand, one advantage of nudges over conventional policy instruments is that they *can* be tested on a smaller scale, which could, in turn, suggest that nudge compatibility with experimentation is a feature and not a bug, potentially saving money in the long run relative to untested interventions that are implemented en masse.[22]

III. Conclusion

The urgency, importance, and complexity of climate challenges require a battery of approaches to overcome, from low-cost, short-term solutions to high-cost and long-term ones. *Climate Choice Architecture* makes an important contribution to the discourse on climate change about the understated role of choice architecture in mitigation. My contribution to this discourse with this Comment is to highlight additional insights from behavioral and environmental economics that can be used to enhance the acceptance, efficacy, and prevalence of nudges for climate change. By underscoring the theoretical motivations for nudging from the behavioral welfare economics literature and appraising nudge cost-effectiveness from multiple perspectives, I hope that the original article and this Comment together make clear that governments should provide R&D funding for behavioral programs as part of their broader efforts to encourage energy and climate change-related innovation.[23]

18. *Id.* at 225-27.
19. Shlomo Benartzi et al., *Should Governments Invest More in Nudging?*, 28 Psych. Sci. 1041 (2017).
20. Silvia Saccardo et al., *Assessing Nudge Scalability* (June 5, 2023), https://ssrn.com/abstract=3971192.
21. Allcott & Mullainathan, *supra* note 16, at 1204-05.
22. Carlsson et al., *supra* note 17, at 229.
23. Allcott & Mullainathan, *supra* note 16, at 1205.

LEVERAGING CLIMATE CHOICE ARCHITECTURE FOR EFFECTIVE BEHAVIOR CHANGE

by Tabitha A. Scott

Tabitha A. Scott is the Executive Sustainability Officer at Gilbane Building Company and has led sustainability and innovation for three large global organizations.

We are at a pivotal moment in history. Our separation from nature has created an epic imbalance in our climate, our well-being, species health, and the availability of resources. If we are to truly mitigate climate change, there is an urgent need to embrace behavioral science as a powerful tool capable of profoundly enhancing the quality of life for future generations.

For over 20 years, I have been applying different techniques to transform human behavior in ways that reduce energy use and introduce regeneration. That's why I was so inspired by Prof. Felix Mormann's article *Climate Choice Architecture* and his innovative approaches to effectively leverage the human decisionmaking process within regulatory frameworks and policy interventions to ethically steer societal decisions toward sustainable practices.

Businesses are a bridge between policymakers and the public—they can test ideas that can be cultivated and grown with future legislation in communities. In particular, I would like to highlight three aspects of the article that resonated with my own experiences and research in the hopes that they will also resonate with you. These are the identification of positive, shared outcomes, the utilization of nudges, and application of modern technology for implementation and consistency.

Professor Mormann's introduction masterfully highlights the pivotal role of behavioral change in tackling the global climate crisis. He underscores the profound impact of choice architecture—subtle changes in decision environments—on influencing climate-conscious decisionmaking. Drawing from the seminal works of Nobel Laureate Richard Thaler and Prof. Cass Sunstein, Professor Mormann champions the strategic use of small "nudges" to guide individuals and organizations toward sustainable outcomes, which I have found effective throughout my career.

I. Strategic Application of Choice Architecture to Advance Climate Change Goals

Each form of choice architecture outlined in the article influences decisionmaking in distinct ways. For example, **Decision Information** focuses on making decisions easy to understand, **Decision Structure** uses defaults to simplify choices, **Decision Assistance** prompts action through reminders, and **Government as Choice Architect** fosters a sense of belonging by aligning choices with societal norms. Through nuanced exploration, Professor Mormann elucidates how leveraging these various techniques can effectively guide individuals and organizations toward climate-friendly behaviors and outcomes.

This taxonomy of nudges offers a comprehensive framework to align positive outcomes with audience values and motivations. I successfully applied this framework throughout my tenure as senior vice president of innovation and sustainability at two global companies that owned and operated military housing communities as part of public-private partnerships. By leveraging the choice architectures identified in Professor Mormann's article, we helped families meet their personal goals while also reducing energy consumption and lowering expenses, as follows:

Decision Information. Our primary initiative was to reduce energy consumption at several military housing communities. During our first attempt, we provided a comprehensive list of energy-saving tips to the residents of Fort Campbell Family Housing. This list proved overwhelming for residents, who were unsure which tips best applied to them. The result was decision paralysis, with no actions taken. Using Professor Mormann's principle of decision information, we translated myriad ways to conserve into a simplified focus that addressed just one specific behavior in a revised campaign at Fort Drum Family Housing. By centering the message solely on turning off lights when not

in use, we observed a 6% reduction in consumption.[1] This technique resonates deeply with behavior change science, where we often use simplified information to positively influence behavior.

Decision Structure. Another challenge we faced dealt with thermostat usage. Most residents wanted to regulate their home temperatures within pre-established norms to avoid unexpected costs at month-end. Despite providing training on how to accomplish this using the smart thermostats in their homes, most chose not to follow through. Applying the decision structure concept, we used defaults to play a significant role in guiding individuals toward sustainable choices that aligned with shared goals and benefits. As such, we switched the wording in the lease agreements from opting "in" to thermostat set-up upon move-in to opting "out," which more effectively empowered residents to manage their energy usage effectively. This change allowed residents to achieve their cost-reduction objectives and avoid surprises, while also lowering greenhouse gas emissions. Plus, they retained the choice to opt out at any time. Imagine if all 150 million multi-family homes in the United States deployed similar methods!

Decision Assistance. Professor Mormann also briefly discusses decision assistance, the integration of modern technology into climate choice architecture. Drawing from my experience with AI, smart meters, and technology-driven solutions for behavior change, I strongly advocate for the potential of digital tools to promote sustainable practices. Automated reminders, personalized recommendations, and real-time feedback mechanisms can significantly enhance the effectiveness of nudges, aligning actions with positive outcomes and reducing the effort required from busy, distracted people.

Decision assistance proved highly effective in helping residents achieve their goal of reducing energy costs. In 2013, I was part of an initiative that launched the Switch-4Good program in collaboration with Balfour Beatty Military Housing management, WattzOn, and the U.S. Department of Energy Office of Scientific and Technical Information. This innovative program combined smart meter data and AI to deliver near real-time reminders to residents. Residents opted into a savings program that leveraged smart meter patterns to detect specific energy use behaviors. First, they chose their preferred communication channel, such as text, call, or Facebook message. Then, we would send personalized nudges—tips reminding them of actions they could take to save energy. This targeted combination of relevance and timely reminders proved immensely successful. Across 11 U.S. Navy communities, energy consumption was reduced by an average of 15% without requiring any retrofits. Furthermore, AI was instrumental in identifying effective nudges and refining them over time, while discontinuing ineffective ones. By facilitating residents' desires to conserve energy, this initiative was a win-win for all involved.[2]

II. The Agility and Adaptiveness of Nudges to Address Scientific Uncertainty and Unexpected Disruptions in Policy Changes

Professor Mormann's argument for climate choice architecture as a complement to traditional regulatory approaches like carbon pricing is compelling. By aligning positive outcomes with audience values and motivations, addressing cognitive biases, promoting common ground in polarized political landscapes, and fostering climate-friendly social norms, nudges can play a pivotal role in accelerating climate action. While acknowledging critiques regarding efficacy and ethics, Professor Mormann navigates these challenges adeptly, emphasizing the nuanced application of nudges in specific beneficial contexts.

Though this audience is primarily made up of lawmakers, I believe that Professor Mormann's assertions regarding policy leverage are also pertinent to businesses striving to reach critical tipping points. For instance, in sectors with slow governmental progress, such as green building initiatives in the United States, organizations can incorporate sustainable design principles, such as local renewable energy and motion sensors, into their default proposals. Although clients may opt out, *establishing green building as the default rather than the exception has the potential to regenerate communities from the ground up*.

Buildings account for 37% of global emissions, highlighting the urgent need for improvement within the built sector. Checking the box on "sustainability" is no longer enough. It seems we are suffering from carbon-tunnel vision, missing the bigger picture of our disconnection from the natural balance and regeneration found in nature. We must seize the opportunity to reconnect dynamically with clients, workers, communities, and competitors, by establishing progressive default behaviors that inspire real change in the built sector, focused on regeneration. I recently accepted the honor of serving as Executive Sustainability Officer at Gilbane Building Company, which is renowned as one of the top 10 green builders in the United States. With over 150 years of legacy, including building the Smithsonian's National Air & Space Museum near our ELPAR Conference in D.C. this year, Gilbane is poised to leverage this historic moment of climate crisis to realign with nature's balance over the next 150 years.

Professor Mormann's insights deeply resonate with our work at Gilbane, where we have witnessed how nudges can spark substantial behavior change and ultimately lead to emissions reductions on both an individual and commu-

1. Tabitha Scott (formerly Crawford) & Richard Lucy, *The 3-Legged Stool Strategy Optimizing Energy Savings*, *in* Encyclopedia of Energy Engineering and Technology (Ass'n of Energy Eng'rs, 2010).

2. Tabitha Scott (formerly Crawford), *Switch for Good Community Program*, Nat'l Energy Tech. Lab'y (Smart Grid Data Access: DE-FOA-0000612), https://www.osti.gov/servlets/purl/1123876/.

nity scale. By leveraging nudges effectively, we have the ability to navigate uncertainties and tailor policies to yield tangible environmental outcomes in countless ways, cascading from individual to communities, regions, nations, and ultimately, the world. Each audience member and reader of this review plays a pivotal role in this transformation. After all, what in nature grows from the top down?

III. Addressing Critiques Regarding Efficacy and Ethics

Professor Mormann aptly addresses valid concerns about the potential risks that nudges will no longer be beneficial to all if they are used to create imbalance, highlighting the importance of ensuring equitable outcomes for all. His arguments align with my belief that nudges can be ethically and effectively deployed to accelerate emissions reduction in a win-win manner. By exercising caution and prioritizing principles of equity, transparency, and mutual benefit, we can combine behavioral insights with modern technology to design impactful policy interventions that drive meaningful change and contribute significantly to mitigating climate change.

IV. Conclusion

Professor Mormann's article provides a compelling framework for leveraging climate choice architecture to accelerate emissions reduction. By harnessing the adaptive nature of nudges and thoroughly understanding these architectural nuances, policymakers can design and implement policies that drive tangible environmental outcomes and contribute to a sustainable future for generations to come.

As someone committed to driving positive, sustainable behavioral change, I find Professor Mormann's insights both motivating and actionable. By identifying beneficial shared outcomes, leveraging nudge architecture, and harnessing modern technology, we can empower individuals, organizations, and governmental bodies to make lasting contributions toward sustainability. Thoughtfully implementing climate choice architecture, with a focus on ethics and effectiveness, holds immense promise in powering the transformative change we urgently need to combat climate change and reaffirm our connection with the natural world.

CHOICE ARCHITECTURE IS ONE PIECE OF THE CLIMATE ACTION PUZZLE

by Reuven Sussman

Reuven Sussman is Director of the Behavior, Health, and Human Dimensions Program at the American Council for an Energy-Efficient Economy (ACEEE).

Overall, I want to communicate that I strongly agree with the ideas and the principles of this article. I have dedicated my career to promoting the use of behavioral science in policies and programs, and I applaud Dr. Mormann for seeing the benefit in this approach and supporting it. What follows are a few critiques at the margins of his article—the central premise that more behavioral science is needed in policy design is correct and appropriate.

By way of background, I have a Ph.D. in Social and Environmental Psychology, and I apply this work at the American Council for an Energy-Efficient Economy (ACEEE), where we do research and write reports on energy efficiency—and try to get those reports into the hands of policymakers, businesses, and industries that can use them to make the world a more efficient place. I am on the frontlines of trying to change policy and programs.

Choice architecture as defined by Professor Mormann is helpful and important, but I just want to say it is also easy to overestimate its impact. Labeling does shift behavior. I have done a number of studies on energy-efficiency labels on rentals and real estate. It does affect behavior, which is great. Feedback does reduce energy consumption. There is a considerable amount of work on this. Physical changes in the environment work. As you know, if you put your recycling bin next to the garbage can, it works better than if it is farther away.

Making social norms salient affects action, as we know. I agree strongly with a lot of the article. It is effective because we don't impinge on people's freedom. This has been mentioned a few times. We need more field experiments, because most of the research, as mentioned earlier, has been done on small samples in labs in universities. We need to see if it actually works in real life.

For example, the labeling work on cars. Although it has been done in the lab and it makes sense, I'd like to see it in practice. Do people actually change their vehicle purchase decisions? And it is not coercive. I totally agree with this point—especially because it is already in place all over in our real world and daily lives. So, we are simply acknowledging it, bringing it out, and changing it.

The thing that I get on my soapbox about sometimes is that I have done social psychology research for a while now. The book *Nudge* did a great job of packaging that for a non-social psychology audience, and this article does the same thing.[1] It's real. I have trouble with it though, because while I love that it has taken on this popularity and everybody knows about it, it has narrowed it and it makes it feel that it's *the* tool. It's *the* solution.

I'm also a musician (in the band Strangers That Clique), so I like this analogy: When you start playing the drums, you're getting used to your different elements and you're learning. It's really exciting. Then, as you get better, you have a drumstick, and everything seems like a drum. You want to add more and more drums and cymbals and things you can hit. But then, as a real professional at the next level, you simplify. You take your drum set down in size. You recognize you're an element of the band. You're a piece of the puzzle, but not the whole puzzle.

I just want to mention this because people reading about choice architecture get really excited typically, and then they think we need to do this for everything. Also, I think in the article Cass Sunstein is a little overstated. He wrote the book *Nudge,* but he's packaging a lot of this work, and I think more credit needs to be given to the original authors.

Choice architecture is not everything. In my definition, choice architecture is a little different. It is framing a decision at the point of decisionmaking, presenting a list in a specific way, like the decoy effect, setting defaults—these are choice architecture.

Choice architecture is not everything. I don't usually think of commitment before a choice as being choice architecture. I don't usually think of text reminders as being part of choice architecture. Sometimes, social norms and

Editors' Note: Reuven Sussman's Comment is based on an edited transcription of his remarks at the Environmental Law and Policy Annual Review conference. See 2023-2024 Environmental Law and Policy Annual Review Conference, available at https://www.eli.org/events/2024-environmental-law-and-policy-annual-review-elpar-conference.

1. Richard H. Thaler & Cass R. Sunstein, Nudge (2021).

feedback is choice architecture if presented at the time of making a decision or if presented at the optimal choice opportunity. But I don't typically put these in the choice architecture bucket. This is again just part of my curmudgeon-ness because nudges are just great—but there is all this research out there on different things that we should talk about individually.

These approaches are important but can be overstated. Default organ donation is not always as effective as we make it up to be. Also, social norms are effective, but they typically have a relatively small impact.

There are many other psychology-based approaches and understandings that are important. Basically, *reward and punishment* is important. Laws and financial incentives are a huge lever, possibly the most important lever. Also, the most impactful behavior is habitual—we need to change people's *habits*. So, let's not talk about nudges so much. Also, *emotions* are important—decisionmaking is *emotional* and not rational and that is also neglected a little bit. And *organizational decisionmaking* is critical. Professor Mormann does make a great point about JP Morgan and BlackRock making important decisions on environmental, social, and governance (ESG) recently—and we need to understand those decisions. That's not about nudging. That's about social psychology and the internal social processes within an organization. Group polarization, groupthink. These kinds of other social psychology perspectives are critical.

I also want to say that it is not always about government policy. Again, this is nitpicking. It's still important, but many examples Professor Mormann cites—like saving water through social norms, reducing consumption with smaller plates—those are really about what I would call *programs*. We are not passing laws about these. People in legislatures are not talking about those measures. It's the folks at a business that say, "let's use smaller plates." They're making an internal decision, and that's why these things get done more often.

Some policies are not choice architecture but are classical economics. We just talked about cost. The article mentions carbon trade and carbon tax. I know Professor Mormann means that we can augment them with choice architecture, but I just want to clarify for everyone that they work because you're changing what are fundamentally classic economic ideas.

Some nudges, or so-called nudges, do require policy change. Changing default energy providers or having a mandatory label, those are very effective, but they do require some sort of bipartisan agreement, and it is hard to get that agreement. That is why we don't see a lot of carbon labels. There are many labels that are hard to implement but effective.

Lastly, nudges are not really as benign as you might think. Professor Mormann mentioned that Republicans and Democrats don't disagree on nudges and that even the most fervent nudge critics struggle to find faults. I think that's true for the examples provided because they are about noncontroversial issues or less controversial issues—calorie labels, tobacco warnings, savings for retirement. But if this became known as a threat, there would be opposition to it. Right now, it's under the radar. If it comes on the radar, then there would be opposition. I'm Canadian and I'm completely baffled by the strategy of winning elections by voter disenfranchisement. I thought it was just obvious that everybody should vote, and everybody shall vote. Who would disagree with that? But, actually, gerrymandering is a strategy. Choice architecture is underfunded, and we need to do more of it, but when that happens, we will see some backlash.

Just note that traditional approaches, therefore, are still important. You know laws and incentives are strong levers—maybe the most important levers. Commercial and industrial sectors also matter—they are big greenhouse gas emitters. For example, laws that decouple energy production from the profits the utility is making is incentivizing a reduction in energy production—that is a really effective policy.

Advertising and marketing can work. I thought when I was in grad school that social psychology and environmental psychology were the way, and the marketing and advertising guys didn't know what they are doing. But as I met people in those fields, I realized that they have a very intuitive understanding of what changes behavior. It really does work. They understand emotions and decisionmaking, so let's not ignore that.

What behavioral science brings is a theory-driven approach and strong implementation and evaluation methods—that's what we do. We can see what really works with a good evaluation strategy—that's our unique contribution and is something that is undersold.

Where do we stand? Social psychology and behavioral economics can help, but it is just one piece of the puzzle. Use social psychology approaches alongside traditional approaches—that's it.

ARTICLE

DEALS IN THE HEARTLAND: RENEWABLE ENERGY PROJECTS, LOCAL RESISTANCE, AND HOW LAW CAN HELP

by Christiana Ochoa, Kacey Cook, and Hanna Weil

Christiana Ochoa is Dean and Herman B Wells Class of 1950 Endowed Professor at Indiana University Maurer School of Law. Kacey Cook is the Constance and Terry Marbach Conservation Attorney at the Conservation Law Center. Hanna Weil is a 2024 J.D. candidate at the University of Minnesota Law School.

I. Introduction

This Article offers proposals for better engagements, relationships, and deals with local communities contemplating wind farms. Because the rapid expansion of wind energy to date has exhausted the first-mover rural communities, the promise of wind energy depends on reluctant rural communities that may require the legal, relational, and policy innovations proposed herein if they are to grant their consent to future wind farms and participate in the renewable energy transformation. The proposals herein are the result of empirical research exploring how occupants of rural spaces have reacted to wind developer's strategies in their communities and how local communities have employed legal mechanisms to welcome—or, more often, reject—wind farms in their home counties. While the field work informing this Article was based in Indiana, our findings have broad applicability.

II. Wind in Indiana's Rural Counties

A. Overview

Only six Indiana counties have permitted wind farms in their communities.[1] More importantly, since 2008, no fewer than 30 of Indiana's 92 counties have either placed outright moratoriums on wind farm construction or have passed land use ordinances placing restrictions on wind turbine placement, setbacks, noise levels, or shadow casting, that effectively prohibit wind farms within the counties' borders.[2] This number betrays the prevalence of restrictive or prohibitive ordinances, as many counties with less desirable wind profiles have not undertaken to pass ordinances addressing commercial wind farms.

B. Methods

Over the course of nearly 30 hours of interviews in 2021 spanning 11 Indiana counties, we spoke with anti-wind activists, company representatives, county officials, and county economic development corporation officers. We also spoke with employees at regional, state, and national governmental and nongovernmental organizations focused on the expansion of wind energy and the conflicts it is creating in local communities. This fieldwork supplemented our comprehensive research on wind farms in Indiana, including (1) the presence and absence of wind farms, and their dates of construction, (2) the presence, absence, content, and dates of adoption of county ordinances designed to attract, prohibit, or place moratoria on wind farm construction within the county limits, and (3) all searchable court cases arising from controversies related to wind farms. We also collected information on court cases, statutes, and lobbying efforts at the state level connected to the expansion of wind energy in Indiana. In addition, we searched databases and ran general internet searches for

Editors' Note: This Article is adapted from Christiana Ochoa et al., *Deals in the Heartland: Renewable Energy Projects, Local Resistance, and How Law Can Help*, 107 Minn. L. Rev. 1005, *and used with permission.*

1. *See* Zuzana Bednarikova et al., *An Examination of the Community Level Dynamics Related to the Introduction of Wind Energy in Indiana*, Purdue Univ. 13 (June 2020), https://cdext.purdue.edu/wp-content/uploads/2020/09/Wind-Energy_Final-report.pdf [https://perma.cc/NW3C-ZP6L].

2. *See* Christiana Ochoa et al., Indiana County Data (unpublished compilation of Indiana county land use ordinances and other relevant information on wind farm regulation) (on file with authors).

local, state, and national news addressing wind energy development in Indiana.

III. The Wind Imperative

A. National Policy and Law

Over the past 20 years, total energy capacity from installed wind farms in the United States has grown rapidly, from 2,472 megawatts (MW) in 1999 to 109,919 MW in 2020.[3] Assisted by national and state-level incentives, the sector is slated to continue growing rapidly.[4]

1. Grants

In early 2021, the U.S. Department of Energy announced $100 million in funding for transformative clean energy research and development, of which advancements in wind energy technology are a key part.[5] Through its Rural Energy for America Program (REAP), the U.S. Department of Agriculture provides farmers, ranchers, and small businesses in rural areas with grants and loan guarantees for renewable energy development assistance.[6]

2. Tax Incentives

The current federal approach to wind energy development is seemingly designed to court massive investments from the private sector and inject "tens of billions of dollars in private capital"[7] to jumpstart the transition away from fossil fuels.[8]

Among the mechanisms directed at this expansion, Production Tax Credits (PTC) provide "a tax credit of one cent to two cent-per kilowatt-hour for the first 10 years of electricity generation for utility-scale wind."[9] The Inflation Reduction Act extended the PTC to projects with construction beginning before 2024 and extends the PTC for at least 10 years for any energy project with a zero or less greenhouse emissions rate.[10] The Investment Tax Credit (ITC) operates in a similar fashion.[11]

B. State-Level Initiatives

Six states offer corporate tax credits[12] for wind energy generation specifically, while two states offer corporate tax deductions.[13] State property tax incentives are more widely available, with the majority of states offering some type of property tax incentive for wind energy projects.[14]

Among states, grant programs are a popular form of incentive for renewable energy development.[15] At least 18 states offer some type of grant or loan program for renewable energy development generally, while 11 states offer grants for wind energy specifically.[16]

IV. Legal Conflicts Over Wind Projects

While federal and state policies support expansion, wind energy projects have experienced significant local resistance, in the form of political organizing, activism, and litigation, that is increasing over time.

A. County Ordinances

In Indiana, as in most states, conflicts over wind farms are deeply local. The majority of states[17] have either constitutionally provided or legislatively delegated at least some powers to municipalities.[18] For example, under Indiana's Home Rule statute,[19] the power over approvals for wind

3. *See* David Nderitu et al., *2020 Indiana Renewable Energy Resources Study*, Purdue Univ. & State Util. Forecasting Grp. 32 (Oct. 2020), https://www.purdue.edu/discoverypark/sufg/docs/publications/2020_RenewablesReport.pdf [https://perma.cc/4B4L-5PWS] (stating that the Indiana Crossroads Wind Farm, located in White County, had an in-service date of December 2021).
4. *Id.* at 20-30.
5. *DOE Announces $100 Million for Transformative Clean Energy Solutions*, U.S. Dep't of Energy (Feb. 11, 2021), https://www.energy.gov/articles/doe-announces-100-million-transformative-clean-energy-solutions [https://perma.cc/LB25-ZHZB].
6. Rural Development, *Rural Energy for America Program Renewal Energy Systems & Energy Efficiency Improvement Guaranteed Loans & Grants*, U.S. Dep't of Agric., https://www.rd.usda.gov/programs-services/energy-programs/rural-energy-america-program-renewable-energy-systems-energy-efficiency-improvement-guaranteed-loans [https://perma.cc/W4J2-WUH8].
7. *Keynote Remarks by Secretary of the Treasury Janet L. Yellen at COP26 in Glasgow, Scotland at the Finance Day Opening Event*, U.S. Dep't of the Treasury (Nov. 3, 2021), https://home.treasury.gov/news/press-releases/jy0457 [https://perma.cc/K4BJ-K8CD].
8. For a more complete array of national-level financial support programs for the wind industry, see generally Off. of Energy Efficiency & Renewable Energy, *Advancing the Growth of the U.S. Wind Industry: Federal Incentives, Funding, and Partnership Opportunities* U.S. Dep't of Energy (June 2021), https://www.energy.gov/sites/default/files/2021-07/us-wind-industry-federal-incentives-funding-partnership-opportunities-fact-sheet-v2.pdf [https://perma.cc/G8HL-RNB8].
9. Wind Energy Techs. Off., *Production Tax Credit and Investment Tax Credit for Wind*, U.S. Dep't of Energy, https://windexchange.energy.gov/projects/tax-credits [https://perma.cc/YQ4U-78SN].
10. *See* Inflation Reduction Act of 2022, Pub. L. No. 117-169.
11. Laura B. Comay et al., Cong. Rsch. Serv., IN11980, Offshore Wind Provisions in the Inflation Reduction Act 2 (2022).
12. *See Summary Maps*, DSIRE, https://programs.dsireusa.org/system/ program/maps [https://perma.cc/6824-NB5G].
13. *See id.*
14. *See Summary Tables*, DSIRE, https://programs.dsireusa.org/system/program/tables [https://perma.cc/2R8Y-UR9W].
15. *See Programs*, DSIRE, https://programs.dsireusa.org/system/program?type=87& (click "apply filter," then "type," then "renewable energy" to see a list of renewable energy grant programs in various states) [https://perma.cc/38UX-VTLV].
16. *Id.*
17. *See* Jessie J. Richardson Jr. et al., *The Law Behind Planning & Zoning in Indiana*, Purdue Univ. Coop. Extension Serv. 2 (Feb. 2022), https://www.extension.purdue.edu/extmedia/id/id-268.pdf [https://perma.cc/7HJU-8DLU].
18. Adam Coester, *Dillon's Rule or Not?*, 2 Nat'l Ass'n of Cntys. 1, 3 (Jan. 2004), https://web.achive.org/web/20151010114031/http://celdf.org/downloads/Home%20Rule%20State%20or%20Dillons%20Rule%20State.pdf [https://perma.cc/LLT8-47ZR]; *see* Jessie J. Richardson Jr. et al., *The Law Behind Planning & Zoning in Indiana*, Purdue Univ. Coop. Extension Serv. 2 (Feb. 2022), https://www.extension.purdue.edu/extmedia/id/id-268.pdf [https://perma.cc/7HJU-8DLU].
19. *See* Ind. Code §36-1-3-6 (2022).

energy projects is placed in the hands of county councils, commissioners, and zoning boards.[20]

The Indiana State Legislature attempted in 2021 to curb the power of county ordinances to prohibit or restrict wind projects. House Bill 1381 (HB 1381), as originally proposed, would have limited home rule with respect to wind farm regulations by creating a statewide set of industry-favorable standards.[21]

However, by the time the Senate was considering the bill, nearly 60 counties had expressed their opposition to HB 1381,[22] and, ultimately, HB 1381 died on the Indiana Senate floor[23] and, even with new legislation to incentivize counties to adopt favorable ordinances,[24] anti-wind energy politics continue to prevail.

B. *Litigation*

Individuals and groups opposing wind projects have brought Fifth Amendment claims[25] and claims of violations of local zoning ordinances,[26] but most of this litigation has been fruitless before the courts.[27]

A strong theme that emerges in Indiana is judicial deference to county commissions and county councils, with each of the two cases over the zoning of commercial wind farms that have been considered by the Indiana Court of Appeals being decided in favor of county zoning board discretion.[28]

V. Community Resistance and Conflicts

This part relies on our fieldwork to describe county-level efforts to maintain local control over wind-energy regulations. It provides insights into the community-level organizing and political machinations that create obstacles or outright blocks on future wind farms.

By far, the four most strongly felt sources of resistance are concerns about: (1) poor process; (2) the substance of the deals that are struck for wind farms, and with whom they are struck; (3) the inevitable viewscape changes wrought by wind farms; and (4) the impacts on property values.[29]

A. *"We Got Steamrolled . . . We Kept Feeling Like It Wasn't Legal"*[30]

The most pervasive feature of our interviews throughout Indiana is that the process by which wind developers engage with communities causes resistance, resentment, anger, and long-lasting community divisions.

The deals surrounding wind energy projects are widely perceived as secretive, non-transparent, non-inclusive, and offering insufficient opportunities for participation in the design of projects.

Company lease-negotiators were described as inexpert, seemed guarded, oversold the upsides, and, in one instance, coaxed one farmer to sign a lease under the false pretext that their immediate neighbor had agreed to put in three turbines, only later to discover that this was untrue.[31]

"The result is that [we] didn't know until the deals were all but done—very late in the game . . . . Three wind projects were going by the time we learned of them."[32] By the time a broad pool of residents learned that a wind farm may be established in their county, they felt (or were explicitly told) "it's a done deal."[33] "We had the sense the commission was not going to follow the rules.[34] . . . We got steamrolled."[35]

The cumulative effect is that people who might have been agreeable or neutral on wind farms turned against them. "I believe that people took a relatively reasonable approach at first."[36] But the process was seen as "arrogant, and the community reacted negatively. These things tend to get talked about over morning coffee more than any benefits [the community might receive]."[37] One interviewee summed up his feelings about the process by saying: "I'm not anti-wind. I'm anti-how-it-was-done-here."[38]

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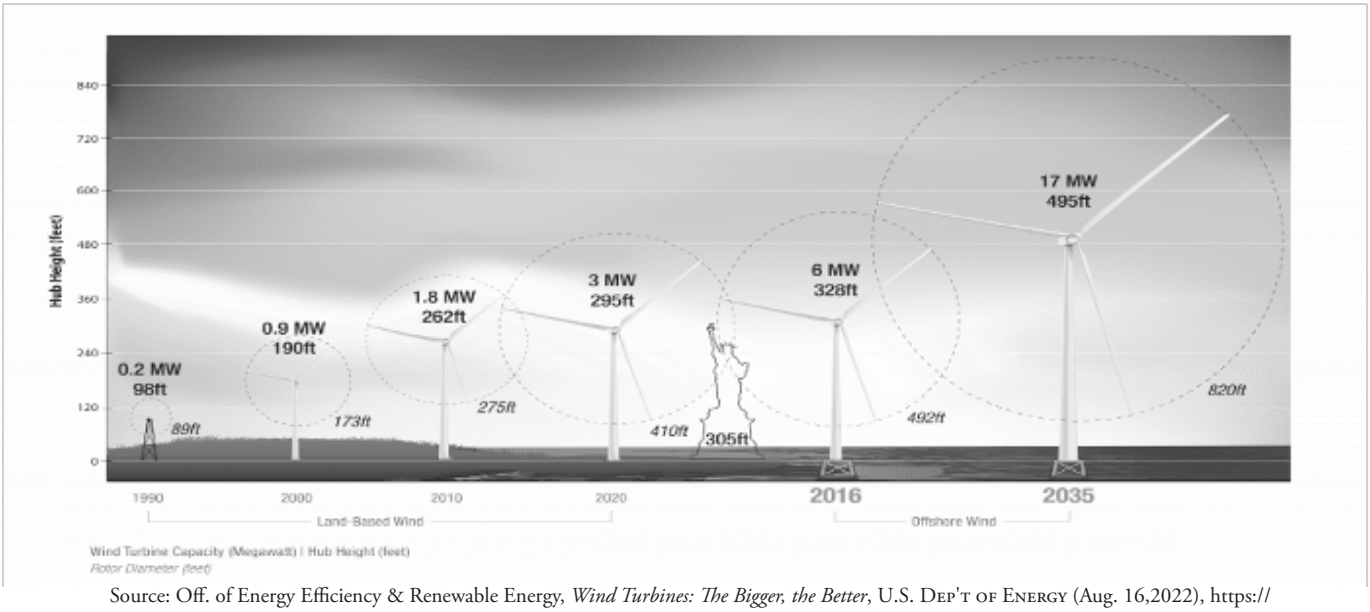
20. *See There When You Need It: County Government*, Ass'n of Ind. Cnty. 2 (May 2009), https://www.indianacounties.org/egov/documents/1251296396_485260.pdf [https://perma.cc/4A7R-JCVU].
21. H.B. 1381, 122d Gen. Assemb., 1st Reg. Sess. (Ind. 2021).
22. Ass'n of Ind. Cntys. and Ind. Ass'n of Cnty. Comm'rs, *HB 1381 Map*, Ass'n of Ind. Cntys. (Mar. 16, 2021), https://www.indianacounties.org/egov/apps/document/center.egov?view=detail&id=2531 [https://perma.cc/47LY-WANA].
23. *See IN HB1381, 2021, Regular Session*, LegiScan (Apr. 15, 2021), https://legiscan.com/IN/bill/HB1381/2021 [https://perma.cc/Y3S7-4B6G].
24. *See* Senate Enrolled Act 390 of 2023, https://legiscan.com/IN/text/SB0390/2023.
25. *E.g.*, Complaint for Declaratory Judgment at paras. 14-16, Smith v. Miami Cnty., No. 52C01-1801-PL-000020 (Miami Cir. Ct. 2018).
26. Dunmoyer v. Wells Cnty., 32 N.E.3d 785, 791 (Ind. Ct. App. 2015).
27. *E.g.*, Order Dismissing Complaint at 1-2, Mosburg v. Bd. of Comm'rs, No. 21C01-1603-PL-00144 (Fayette Cir. Ct. Dec. 12, 2016).
28. Flat Rock Wind, LLC v. Rush Cnty. Bd. of Zoning Appeals, 70 N.E.3d 848, 850 (Ind. Ct. App. 2017) (regarding denial of a zoning permit); Dunmoyer v. Wells Cnty., 32 N.E.3d 785, 797 (Ind. Ct. App. 2015) (regarding a challenge to an approval of a project).
29. Other frequently cited reasons to resist commercial wind farms which this Article will not explore in detail are (5) the potential health consequences of living in range of "blade flicker" and turbine sounds, and (6) the negative effects for flying animals.
30. Interview 203 with Anti-Wind Organizer (June 16, 2021) (on file with authors).
31. Interview 201 with Anti-Wind Organizer (June 11, 2021) (on file with authors).
32. Interview 204 with Anti-Wind Organizer (Sept. 20, 2021) (on file with authors).
33. Interview 202 with Anti-Wind Organizer (June 14, 2021) (on file with authors).
34. This is a concern shared in other instances as well. *See, e.g.*, Interview 204 with Anti-Wind Organizer, *supra* note 32.
35. Interview 203 with Anti-Wind Organizer, *supra* note 30.
36. Interview 201 with Anti-Wind Organizer, *supra* note 31.
37. *Id.*
38. *Id.*

Fig. 1. Demonstrating Growing Wind Turbine Hub Heights Over Time



Source: Off. of Energy Efficiency & Renewable Energy, *Wind Turbines: The Bigger, the Better*, U.S. Dep't of Energy (Aug. 16,2022), https://www.energy.gov/eere/articles/wind-turbines-bigger-better [https://perma.cc/6NEX-TL23].

B. *Organized Opposition: "It Starts With a Ringleader, Then Eight to Ten People, Then Hundreds."*[39]

Residents, tenant farmers, and neighbors all have reasons to oppose wind farms. When opposition to wind farms takes hold in a particular county, it often does so with force, garnering large numbers of county residents to the anti-wind farm camp. In each county we visited, concerned citizens quickly formed into anti-wind organizations.

Those who oppose wind farms are skeptical that the economic development agreements negotiated between companies and county governments are sufficient to compensate for the prolonged tax abatements that counties grant to companies, at least in the short term.

For those who reside where wind farms are slated to be built, their concern is much deeper. Many farmers in this part of the country have long, inter-generational connections to their land, some dating back over 200 years.[40]

Our team repeatedly heard stories of large-farm absentee owners contracting with wind farm operators: "The big farmers wanted to sign up early. The vast majority of the people that signed up don't live on the land. For example, one farmer signed up for 49 turbines without regard to his tenants."[41] The "leaders of the opposition are often tenant farmers."[42]

The neighbors of wind farms are also among the most aggrieved in recipient communities, given that neighbors often are in the noise and flicker zone of turbines, and experience vastly changed landscapes, while typically receiving no economic benefit.

C. *"It's Like Living in an Industrial Zone"*[43]

The earliest commercial wind towers erected in Indiana from 2008-2010 have hub-heights of approximately 262 feet.[44] By 2020, the total average height of onshore wind turbines was 410 feet, nearly the height of the London Eye Ferris Wheel.[45]

People who have lost wind farm battles (or never fought them) have seen their surroundings transformed from rural countryside and farmland with wide-open vistas to large-scale, industrial energy-production facilities. To understand the experience of living on land now occupied by a large-scale wind farm, one must imagine a bright, blinking red light on the top of hundreds of wind turbines (these are necessary and required for air safety). One couple we talked with said it was "horrifying the first time we saw the towers at night."[46]

39. Interview 502 with Former Economic Development Director (June 25, 2021) (on file with authors); *see also* Interview 204 with Anti-Wind Organizer (Sept. 20, 2021) (on file with authors); Interview 203 with Anti-Wind Organizer (June 16, 2021) (on file with authors).
40. *See Hoosier Homestead List*, Ind. State Dep't of Agric., https://www.in.gov/isda/files/1976-2014_Hoosier_Homestead_List_pdf.pdf [https://perma.cc/E75P-88LM] (listing Hoosier Homestead farms, with one dating back as early as 1791, that were recognized by the Indiana government from 1976-2014).
41. Interview 202 with Anti-Wind Organizer, *supra* note 33.
42. Interview 502 with Former Economic Development Director, *supra* note 39.
43. Interview 203 with Anti-Wind Organizer, *supra* note 30.
44. Bednarikova et al., *supra* note 1 at 13 tbl.1.
45. Off. of Energy Efficiency & Renewable Energy, *Wind Turbines: The Bigger, the Better*, U.S. Dep't of Energy (Aug. 16, 2022), https://www.energy.gov/eere/articles/wind-turbines-bigger-better [https://perma.cc/6NEX-TL23].
46. Interview 203 with Anti-Wind Organizer, *supra* note 30.

Fig. 2. Benton County, Indiana, Farmhouse Surrounded by Wind Turbines

D. "How Can They Not Be Hurting Property Values?"[47]

One of the leading concerns expressed by communities contemplating wind farms is the effect they may have on property values. The conclusions in the literature on the effects of wind farms on property values are mixed.

Perhaps most interesting is a study indicating that the community attitude toward wind farms is a strong predictor of their effect on property values. Where communities have voiced no opposition to the establishment of wind farms, property prices rise, though not enough to be statistically significant.[48] On the other hand, where communities have received wind farms despite notable opposition, properties located within about two-and-a-half miles of a turbine tend to drop between 5% and 10%.[49]

E. Other Concerns

Other reasons for opposing wind farms relate to shadow flicker (the notable light flicker created by the shadow of rotating turbines), sounds from wind turbines, and the ecological effects of wind farms.

F. The Results: Slower Transitions to Clean Energy, Distorted Electoral Politics, and Broken Communities

There are at least three reasons to heed the concerns driving opposition to wind farms.

1. Transitioning to Renewable Energy Will Be Slower and More Difficult

Opposition to wind farms is shutting down the United States' ability to reduce its reliance on non-renewable energy. In Indiana, for example, more than 30 viable wind energy counties have passed ordinances effectively or actually prohibiting wind farms in their boundaries.[50] The same is occurring in other wind-viable states.[51]

2. Local Politics and Elections Are Distorting

In small communities, this type of mobilization is unusual and has resulted in many county-level elections being characterized as strident "single-issue elections" for the purpose of ensuring anti-wind farm ordinances will be passed in the period immediately following elections. "Our county government is substantially different as a result of wind farms. Incumbents are losing even to unknown people with no experience."[52] This raises concern about the effects that single-issue elections have on local governance.

3. Local Communities Are Suffering

Finally, there is the enduring erosion of the value of living in a peaceful community. Some interlocutors described feeling threatened even four years after a contentious vote over wind farms.[53] Many people lamented that their community has not returned to its previous levels of peace and civility.

47. Interview 202 with Anti-Wind Organizer, *supra* note 33.
48. Benton Cnty. Assessor's Off., Benton County—Wind Turbine Taxes, Assessed Values, and Residential Properties (on file with authors).
49. *Id.*
50. Jennifer Miller, Opinion, *30-Plus Counties Hit the Brakes on Wind Farms. Indiana May Soon Blow That Up.*, IndyStar (Mar. 10, 2021), https://www.indystar.com/story/opinion/2021/03/10/op-ed-indiana-may-over-rule-local-governments-wind-and-solar/6814301002 [https://perma.cc/DUS7-RPLM].
51. David Nderitu et al., 2020 Indiana Renewable Energy Resources Study, Purdue Univ. & State Util. Forecasting Grp. 37 (Oct. 2020), https://www.purdue.edu/discoverypark/sufg/docs/publications/2020_Renewables-Report.pdf [https://perma.cc/4B4L-5PWS.
52. Interview 503 with Former County Commissioner (June 29, 2021) (on file with authors).
53. Interview 204 with Anti-Wind Organizer, *supra* note 32.

VI. Recommendations Rooted in Resistant Communities

A. *Theoretical Premise: Interventions in Contract Formation*

The current practices of wind companies in local communities are not working. Outsider wind energy companies must engage communities early, transparently, respectfully, and generously to credibly propose mutually beneficial relationships. The proposals have to build trust such that communities are at least willing to enter relationships with the companies that may last a generation or more. They must also be attractive enough that communities can envision how the burden they will bear—an irreparable transformation of their land into an industrial power plant—is sufficiently compensated.

B. *Recognizing the Burden*

One feature we noted in our conversations with wind farm resisters is that they believe they are perceived as unreasonably or irrationally attached to "the view,"[54] caught up in "their greed,"[55] or jealous of their neighbors who wind up with lucrative leases.[56] The tendency to diminish the value of what is dear to a community is an ongoing reason companies are having trouble establishing in America's heartland.

C. *Improving the Process*

So many of the people with whom we spoke spent most of our conversations detailing what, for them, was a terrible experience with wind farm operators and county officials. They told us about companies whose mode of operation was intentionally secretive, such that leases were signed and county meetings had already been scheduled by the time they learned that a wind farm was proposed in their county. They also remarked on how little opportunity there was for participation in official county meetings.

These practices are pervasive—we have learned of only one wind company experimenting with a community engagement model similar to what we propose here.[57]

1. Registering Interest and Reporting Process

Before a company sends employees or contracts to offer leases to landowners in a particular county, the company should be required to publicly register its interest in developing a wind farm in that county. County officials could be required to report any such registration at the next possible public meeting. Any company that has registered interest could be required to submit a short report of any steps taken during the prior quarter toward the realization of their interest. County officials could, in turn, be required to relay those reports at quarterly public meetings. This process would give community members notice that companies are working toward signing leases in their area and their rate of progress.

2. Invite Engagement and Participation

Under the typical wind company model, companies: (1) look at technical maps to find a good location for a wind farm; (2) send people out to sign leases; (3) conduct environmental and other studies to determine viability; (4) use computer-generated models to determine the optimal location for turbines; and (5) go to the relevant county boards with fully developed plans.[58]

Under a new pilot being conducted by one innovative company, the goal is to design a project that fits the requirements of the community. As an alternative to the standard model, they intend to: (1) engage the community; (2) work with the community on how to design the project (this includes identifying important locations that should be protected); (3) take time to work through the concerns community members have and discuss the real trade offs; and (4) give the community a 1% royalty on the project in addition to the taxes due, with the community empowered to decide who collects and administers these funds.[59]

3. Transparent and Robust Information-Sharing

Companies can be required to hold ongoing information sessions and two-way dialogues separate and ahead of formal county government decision points.

The need to remain transparent and share all relevant information will extend over the life of the relationship. Such information should include effects on property values, health effects, and effects on birds and bats. It must also include robust information on revenues paid and public projects funded as a result of the company's operations.

Among the greatest challenges our team faced was the inability to access first-hand information about the private contracts between landowners and companies due to stringent non-disclosure clauses. One possibility would be to require companies to submit the contracts to the county assessor or recorder, with permission to redact information vital to the company's competitive position.

4. Spaces for Voicing Concerns

The concept of "exit and voice"[60] is a useful framework for understanding how the limited spaces for public conversa-

54. Interview 501 with County Commissioner (June 16, 2021) (on file with authors).
55. Interview 503 with Former County Commissioner, *supra* note 53.
56. Interview 702 with Wind Farm Company Representative (Sept. 10, 2021) (on file with authors).
57. Interview 701 with Company Representative (Aug. 27, 2021) (on file with authors).
58. *Id.* at 3.
59. *Id.*
60. *See* Albert O. Hirschman, Exit, Voice, and Loyalty 19-20 (1970); *see also* Albert O. Hirschman, *"Exit, Voice, and Loyalty": Further Reflections and*

tions result in highly contentious public meetings. When the ability or will to exit (move to another county or to an urban location) is low, the propensity toward political action—voice—in the face of challenges such as the arrival of wind farms is elevated.[61] If that political action is limited or derided, it would be rational for communities to reject wind projects to avoid relating with them. This is clearly an attractive alternative to moving. The companies, rather than the residents, are thus forced to exit. County officials who are perceived as overly solicitous of wind companies are similarly ousted (from office if not from the county) at the next elections.

If this dynamic is to improve, company and incumbent county officials must open additional public spaces for earnest community input, evidence, discord, and discussion.

5. Lessons From International Development

Over the past decade, Free Prior Informed Consent (FPIC) has emerged as a mechanism in the foreign direct investment context designed to enhance the role communities have in negotiations over large-scale mining and development projects in much of the developing world.[62] The concept emerged to assist primarily Indigenous communities in securing a role in striking (or denying) deals that would affect their ancestral lands.[63] While FPIC has received merited criticism, the core principles at its heart have been very useful to our team as we consider how community engagement and relationships could be improved.

D. Fair Compensation

One consequence of not recognizing the burden local residents are asked to bear is that the deals companies offer to communities are not perceived by local communities as adequate compensation for all they stand to lose. This is a lost opportunity to enhance public infrastructure and services that can act to revitalize rural communities.

1. Contingent Tax Incentives and Abatements

If companies are not voluntarily seeing the utility of sharing the benefits of tax incentives, federal and state governments could force sharing by requiring companies to pass along a simple percentage of gross revenues or a substantial portion of tax credits to host communities.[64]

Similarly, the tax credits for counties establishing Wind Energy Ready Communities under legislation such as Indiana's recently adopted Senate Enrolled Act 390[65] could be enhanced to further benefit the residents of such communities whose land is not the subject of a lease with a wind company. This would assure additional benefit to the most immediate neighbors of wind turbines who are not receiving direct financial benefit from leases.

2. Categorical Grants

The federal government could also use categorical grants for counties committed to engaged, transparent, and participatory wind farm permitting. Counties that are able to show their commitment to such processes leading to the establishment of a commercial wind farm could apply for project or formula-project categorical grants created specifically for this purpose.[66] State grants-in-aid can act as a mechanism for states to create similar incentives.[67]

3. Local Benefits

In the context of the renewable energy imperative, it may be time to use or create paths for communities and companies to strike deals that assure that local communities will receive an enduring benefit in the form of local tax enhancements, the creation or revitalization of public infrastructure and services through project and maintenance funds, etc. in exchange for agreeing to see their county transformed into an industrial electricity generation facility.

4. Permanent Fund Dividends

A final model for assuring that local communities receive financial benefits in exchange for allowing wind farms in their borders can be found in examples such as the Alaskan Permanent Fund Dividend. The Permanent Fund Dividend is designed to provide an "annual payment . . . for Alaskans to share in a portion of the State minerals revenue in the form of a dividend to benefit current and future generations."[68] Dividends of this form could enhance the bargain between wind companies and local communities. If adequately managed and responsibly funded, such programs would also contribute to enduring relationships between companies and communities.

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a Survey of Recent Contributions, 58 Milbank Mem'l Fund Q. Health & Soc'y 430 (1980) [hereinafter Hirschman, *Further Reflections*]; Oliver P. Williams, Metropolitan Political Analysis: A Social Access Approach 29 (1971).

61. *See* Hirschman, *Further Reflections*, *supra* note 61, at 448-50 (citing John M. Orbell & Toru Uno, *A Theory of Neighborhood Problem Solving: Political Action vs. Residential Mobility*, 66 Am. Pol. Sci. Rev. 471, 484 (1972)).
62. *See, e.g.*, Mauro Barelli, *Free, Prior, Informed Consent in the Aftermath of the U.N. Declaration on the Rights of Indigenous Peoples: Developments and Challenges Ahead*, 16 Int'l J. Hum. Rts. 1, 2-4 (2012).
63. *Id.*
64. Email from Roberta Mann, Mr. & Mrs. L.L. Stewart Professor of Bus. L., Univ. of Oregon Sch. of L. to Leandra Lederman, William W. Oliver Professor of Tax L., Indiana Univ. Maurer Sch. of L. and author, Christiana Ochoa (July 1, 2021) (on file with authors).
65. *See* Senate Enrolled Act 390 of 2023, *supra* note 24.
66. *See* Robert Jay Dilger & Michael H. Cecire, Cong. Rsch. Serv., R40638, Federal Grants to State and Local Governments: A Historical Perspective on Contemporary Issues 8-12 (2019), https://sgp.fas.org/crs/misc/R40638.pdf [https://perma.cc/9YFC-G2AP] (discussing the federal government's historic use of categorical grants).
67. *Guide to Indiana County Government*, Ass'n Ind. Cntys. 34 (2009), https://www.pfw.edu/dotAsset/c78253c7-7f49-4d54-b3aa-6c44ccd4d8db.pdf [https://perma.cc/FK3G-XHRK].
68. *See generally* About Us, State of Alaska: Dep't of Revenue: Permanent Fund Dividend, https://pfd.alaska.gov/Division-Info/About-Us [https://perma.cc/X2R3-RL5A].

VII. Conclusion

The empirically informed recommendations we have made here are not easily implemented. They will also not always be successful. However, climate change is arguably our greatest current global existential threat. A rapid transition from fossil fuels to renewable energy is crucial to reducing greenhouse gas emissions. To get there, states in America's heartland will have to increase their wind energy capacity by factors of 10 and 20. Indiana's onshore wind energy capacity, for example, would have to increase by 16 times its current load.[69] At the same time, the rural land suitable for wind farms in states like Indiana has largely become unviable due to local ordinances that restrict or prohibit their construction.

Fortunately, there are alternatives to the divisive dynamic emerging throughout rural America. The recommendations we have made here offer tools to shift the process by which wind farms are being introduced to small communities, the form and extent of community involvement, the benefits shared with local communities, and the protections and guarantees offered to those communities.

The proposals we have made here can create new models for individuals, groups, and communities to more openly consider the benefits that will come along with the undeniable burdens they will bear if, or when, a wind farm is constructed in their locations. These recommendations may help provide nuance and open possibilities where a binary antipathy to wind farms has emerged as the dominant reaction.

69. Mark Jacobson, *Zero Air Pollution and Zero Carbon From All Energy Without Blackouts at Low Cost in Indiana*, Stan. Univ. tbl. 4 (Dec. 7, 2021), http://web.stanford.edu/group/efmh/jacobson/Articles/I/21-USStates-PDFs/21-WWS-Indiana.pdf [https://perma.cc/AT7M-EFAR].

REINFORCING THE POSITIVE BENEFITS AND ATTITUDES

by Hilary Clark

Hilary Clark is Senior Director of Siting & Permitting, Social Licensing at American Clean Power.

I am going to address some high-level topics, because we could easily get into the weeds on a lot of these discussions, and it is an industry that invokes a lot of emotion. I want to step back and level set on the truth about wind. There are 150 gigawatts of installed wind capacity across the United States. There are greater than 72,000 wind turbines currently operating across the United States. Wind generates about 10% of U.S. electricity. There is a significant amount of capital investment that has been made across the country in wind energy.

I want to jump to some facts about Indiana specifically. The installed capacity currently in Indiana is 29 projects: $24.6 million in state and local taxes and $23.2 million in average annual lease payments. Breaking that down into the average land-lease payment per megawatt for a landowner, it equates to, on average, $6,355 per megawatt, adding a significant amount of income to landowners who host these projects and helps diversify their income.

Unfortunately, the article highlights the current trend across the United States of local opposition, which is one of the biggest threats to deploying clean energy. In 2023, the Sabin Center for Climate Change Law at Columbia Law School found that organized opposition is in 35 states, resulting in at least 228 significant local restrictions against wind and solar and other renewable energy facilities.[1]

However, Lawrence Berkeley National Lab has looked at attitudes toward wind in recent surveys and, even though we are seeing an uptick in local opposition, generally, the attitudes toward these projects over time, once installed, are positive among the majority of people who live nearby. Similarly, in a recent solar survey, 85% of the respondents had a positive or neutral attitude toward the projects located near them. The overall positive attitudes outnumbered the negative by a 3:1 margin in those surveys. So, we are seeing more positive attitudes toward these projects, but they can be drowned out by the opposition tactics, which is highlighted in Prof. Christiana Ochoa et al.'s article.

Additionally, the study did indicate that fairness of the process, which the article highlighted, is one of the main factors that can influence peoples' attitudes. That is something that the industry recognizes and understands that there are opportunities for improvement.

In the past, there may have been some mistakes made, and the industry recognizes there are things that we can do better to engage with the community. We hear about the importance of communicating early and often, sharing information, working with trusted advisors, and sharing data. The industry recognizes and is working toward this approach.

However, the article disproportionately focuses on the negative and the opposition's talking points. For example, the authors reiterate a lot of the negative impacts around wildlife, sound, health, aesthetics, shadow flickering, and property values. But even though the authors mention that people who are skeptical of wind projects will say they are concerned about health, there are hundreds of studies over 20 years that show that wind turbines do not have significant health impacts.

Similarly, with shadow flicker, there are studies that show it does not result in negative health impacts. Recent property value studies indicate there may be an initial dip upon mention of a project and during construction, but they recognize a recovery over time within five to seven years. There is no evidence of long-term property value impacts adjacent to these projects.

It is important to be able to counter some of the opposition tactics or it is playing into the opposition. And while it is important to highlight the challenges that we are facing, it is also important to highlight the actual data.

Similarly, we do recognize there is a change in landscape with the addition of wind projects. However, visual impacts are subjective and what one person might find as a negative, another person might find as a positive. We do see that in some of these studies around attitudes.

Editors' Note: Hilary Clark's Comment is based on an edited transcription of her remarks at the Environmental Law and Policy Annual Review conference. See 2023-2024 Environmental Law and Policy Annual Review Conference, available at https://www.eli.org/events/2024-environmental-law-and-policy-annual-review-elpar-conference.

1. Matthew Eisenson, *Opposition to Renewable Energy Facilities in the United States*, Sabin Center for Climate Change Law, https://scholarship.law.columbia.edu/sabin_climate_change/200/ (2023).

The industry recognizes that there is room for improvement in host community engagement and countering misinformation. The article highlights a lot of recommendations. However, they are not as simple as they may seem, and the authors do allude to the implementation challenges. For example, one of the recommendations is for a company to publicly register its interest in developing a wind farm and report regularly on progress.[2] However, development and power markets are competitive so this type of registration or reporting could cause developers to look elsewhere, as it could give competitors insights as to their development plans before they are fully set. It could also result in the opposition getting a head start in trying to influence the communities and landowners. We have heard anecdotally from some communities that opposition to projects can intimidate landowners who are interested in finding leases. Therefore, it is important to recognize that while well-intended, such requirements could do the opposite and create a market that developers may not find favorable.

With regards to community benefit agreements, as mentioned, developers often do make these arrangements to provide financial and other benefits to communities beyond the taxes paid, and beyond the economic benefits from construction and operations. In some cases, they do so with the neighboring landowners as well.

However, when you start mandating these types of agreements and requiring uniformity, it removes the flexibility that can be important for developers in tailoring plans for specific projects in communities and ensuring a viable project economically or otherwise. Therefore, it is important to think about the potential converse outcome of a recommendation that is well-intended.

Furthermore, the profit margins of these projects are small, and they do not have a lot of flexibility—so requiring property value guarantees or a 1% royalty on top of the taxes could also be prohibitive for development. The developers may look elsewhere to build their projects because they would not be able to economically build a project.

A lot goes into siting these projects. Developers weigh many factors, including transmission interconnection, environmental constraints, land use, and industry. To build trust with host communities through transparent communication throughout all stages of the project is important, and we recognize that. It could also include community meetings, open houses, sharing data with trusted sources, and engaging with community leaders more regularly.

The industry agrees that these measures are important to move projects forward. It is just important to recognize the implementation challenges. Getting too prescriptive can become more prohibitive than helpful and, in some cases, can be weaponized. For example, there might be a community that says, "We're going to write this in knowing that it will be a de facto ban on projects." We do need to consider all these aspects of the wind siting process.

2. Christiana Ochoa et al., *Deals in the Heartland: Renewable Energy Projects, Local Resistance, and How Law Can Help*, 107 Minn L. Rev. 1055, 116 (2023).

BROAD UNDERSTANDING AS A STARTING POINT FOR CONSTRUCTIVE SOLUTIONS FOR SITING WIND ENERGY PROJECTS

by Eric Lantz

Eric Lantz is Director of the Wind Energy Technologies Office at the U.S. Department of Energy.

Wind energy siting tends to be an emotionally charged issue that requires nuance to address—from my experience and past research those two things don't often go together. With that in mind, Prof. Christiana Ochoa et al.'s *Deals in the Heartland: Renewable Energy Projects, Local Resistance, and How Law Can Help* is a thought-provoking piece that coincides with significant growth in the wind industry, as well as broad-based expansion of county-level ordinances regulating wind power. It is a useful contribution to the literature and to the conversation around this topic, which is a very important one, and one that is dear to me. I do, however, have a handful of comments that I would like to include in the public discourse.

Before I delve into the specifics, I want to say a little bit more about my background and how my perspective has been shaped. I started studying the social acceptance of wind energy in 2007. As a graduate student working at the National Renewable Energy Laboratory, I was invited to be part of an international working group—with researchers from Northern Europe, Japan, and the United States—focused on understanding how we can better integrate wind energy into society. It was a privilege to be able to work with both social scientists and practitioners in that context and at that time. I recognized that to be successful with wind energy projects, we need to have partnerships, and we need to have the buy-in of local communities. I also had the opportunity through participation in the working group to influence the direction of research conducted by colleagues to better understand the subtleties and nuances that are associated with human experiences of wind turbines.

For example, I was able to participate in the Social Acceptance Baseline Study that was led by colleagues at the Lawrence Berkeley National Laboratory. We focused on studying and surveying the experience of people who live next to wind turbines. Prior to that time, most of the literature internationally had been surveys on general issues such as what people think about wind energy. There were only a few examples where researchers had engaged people who had lived next to wind turbines for an extended period of time and who had been through the process, so had a relatively long-term view on it. We found that, yes, there are some individuals who are frustrated or disappointed—and there are people who moved away. Yet, there is also a significant majority who are supportive or neutral toward wind facilities.

My current role is serving as the Director of the Wind Energy Technologies Office at the U.S Department of Energy (DOE), which is a slightly different role from my prior research work. We fund a portfolio that spans foundational science to technology demonstration, but also capacity-building for communities to be able to think about how they plan for and implement new deployments of wind energy. We are focused on catalyzing society's access to clean energy technology. We want to think about how we can easily integrate wind energy technologies into the grid, the landscape, and the ecology, including impacts on wildlife and people.

Within the domain of social acceptance or human experience, we are really interested in technologies and technical solutions that can alleviate community impacts and the burdens that people experience. We want to invest in capacity-building that can support an overall energy transition, and of course, we are also interested in financial and regulatory policy solutions. We think there is a lot of work that can be done to create financial, regulatory, and policy structures that can better balance the costs and benefits associated with clean energy deployment, including wind.

I want to emphasize that human experience with wind energy is highly subjective. This is particularly important with respect to the aesthetic perceptions of wind turbines

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Editors' Note: Eric Lantz's Comment is based on an edited transcription of his remarks at the Environmental Law and Policy Annual Review conference. See 2023-2024 Environmental Law and Policy Annual Review Conference, available at https://www.eli.org/events/2024-environmental-law-and-policy-annual-review-elpar-conference.

and wind plants. Throughout my time studying human experiences with wind energy, the opinions have been vastly differing. A lot of people talk about seeing wind turbines as these sentinels of a new age pushing back against climate change and helping to create energy independence for local communities. I've also heard, similar to the authors' points, of wind turbines being perceived as an industrial blight that is ruining the landscape and the aesthetics of a particular area. Ultimately, how people experience the visual effects of wind energy is heavily impacted by what they bring to the table. Essentially the stories that they have lived and whether they see wind energy as the bastion of technological advancement and humans overcoming societal challenges, or something that's a negative transformation of your landscape depends heavily on the individuals.

There is a section in the article that talks about property values and how at least one of the studies that was cited drew a connection between property values and the social experience. In communities where there was less conflict, and where the plants were relatively well-received, property value impacts were negligible and didn't materialize. Whereas, in those communities where it was more negative or more challenging, there was lower willingness to pay for homes and residences.

Ultimately, it is very difficult to find clear objective and predictive measures of whether property values are going to be impacted—positively or negatively—because it can be a bit of a self-fulfilling prophecy. If a community is welcoming to projects, then people tend not to worry about it. On the other hand, if you have high anxiety or are very fearful of what might happen, then of course that gets talked about, and it is reasonably going to affect local home markets.

DOE has funded many studies, mostly at the national level, looking at property values impacts. We applied a statistical approach (there are clearly anecdotes that can be exceptions), and the latest work in this space has shown that there can be impacts during the period immediately following the announcement of a project. And, of course, that is the point at which the unknowns are the greatest. You know a project is coming, you know it's going to mean a change, but you don't know what that change is going to look like—so you might be more fearful in those situations. However, what they also see in the statistical trends is that on average within five years home prices, even in those communities where you see a dip, return to a more normal long-term trend. This suggests that the impacts are not long-lasting and that with time and experience these impacts are generally resolved.

Further, unlike a nuclear facility, a coal-powered electricity generation plant, or even a natural gas facility, by and large, at the end of a wind project's life, it can be decommissioned and all the equipment disposed of in a relatively economical and safe manner. Some of the foundation concrete can be left in place, but it is much easier to dig a wind turbine foundation out of the ground and restore that to a relatively pristine pre-wind facility condition than it is to decommission and restore the land impacted by a nuclear power plant to its preconstruction status (nuclear power is often talked about in terms of future clean electricity generation so in a sense, it's an alternative to wind power). The legacies, however, at least for these two technologies are tremendously different. If there are particularly problematic turbines or if there is a plant that ultimately doesn't work in a community, it doesn't have to be a permanent land transformation. At the same time, maybe people will become accustomed to living next to wind turbines in the same way that we live next to other sorts of human infrastructure, whether it's an interstate highway, a shopping mall, or even a collector road that runs by many of our houses. The turbines could be integrated into the landscape and integrated into our culture, and more broadly accepted over time.

We know a lot about the science and engineering that drives the critical factors that affect human experiences. I had a colleague in Germany who did great work looking at when people are bothered by the sound. For example, people find it particularly bothersome when there is a lot of turbulence in the atmosphere interacting with the blades. These conditions produce aerodynamic sounds that are like shoes bouncing around in a dryer. Shadow flicker is another problem that is talked about frequently. Shadow flicker is actually relatively easy to manage from an engineering perspective, because we know what track the sun is going to take every year and how the shadows are going to be formed so we can very precisely model when and where shadow flicker could occur. As a result, plant operators and developers actually have tools that they can use to alter the operation of individual turbines or plants to mitigate particularly bothersome periods of wind plant operations. This is one of those areas where the nuance is incredibly important—we have tools that can manage impacts so it doesn't have to be a binary yes/no on wind.

One of the challenges though is that oftentimes what we hear in our conversations with both manufacturers and technology developers who are pursuing these types of solutions is that the customers, in this case the developers, are not asking for those tools. There are a couple of reasons this may be the case. One is the slim margins that exist in this industry. We often, as wind technology researchers, get compared to the aerospace industry because we are dealing with composites and air foils, but the profit margins in the electricity generation field are orders of magnitude different than in an industry like aerospace—the margins are really razor thin.

There is also stiff competition from other sources of electricity generation and societal pressure to keep power prices low. For example, many utilities are regulated such that they have to accept the lowest cost form of electricity generation. Although low-cost electricity is good for society, there are trade offs—here, it seems the legal and the regulatory frameworks are almost working against each other. In sum, profitability pressures coupled with low expressed demand for changes to wind plant design or operation means that available engineered solutions are not being developed and deployed at the levels that might be expected based on their availability and potential to mitigate community concerns.

Further, the development period is the highest-risk portion of the capital stack that goes into a wind energy facility. It is a relatively small piece compared to the overall cost of the facility, but it is totally exposed. When developing a project, you don't know if you actually have a project or not—you could lose all of the investment. This creates reasonable challenges for developer-funded, long, and participatory development processes that may not work in an industry like electricity where the margins are thin and there is a lot of pressure on power producers to keep prices very, very low.

Another point I want to make is that wind energy is not a monolith. Wind facilities exist in all different sizes. In the Netherlands, there are turbines sprinkled here and there, squeezed into niches in industrial landscapes and urban centers. We need to exploit the diversity that is possible with wind energy to help solve some of these challenges.

I also want to acknowledge the complexity of balancing the costs and benefits. The regulations and the way prices are set in power markets are controlled by so many different factors, none of which—I'll go out on a limb and say—account for the experiences of the local communities where projects are sited. This applies to any power generation technology, not only wind.

Lastly, there are significant power imbalances that exist both on the side of the developers and on the communities. We heard today about how developers may not be transparent and can leverage information asymmetries and the balance of power to try to get projects through. On the other hand, because we have broad-based home rule policies in this country, and in many localities around the world, the success of a project can come down to the votes of a few individuals. I think that is a power imbalance on the community side. I would love to see objective criteria developed that can help inform both how projects are developed and how they are approved so that we can achieve a rebalance.

Ultimately, we should not just be asking what the wind energy industry can do differently. We should also ask what communities can do differently. Communities can take a proactive approach here. They can think about how they want to develop wind energy or solar energy or other clean energy technologies in their community, and then they could even go out and solicit proposals for projects and pick from among those. I don't think communities have to be purely in a reactive space.

PRINCIPLES FOR SITING RENEWABLE ENERGY PROJECTS: A RESPONSE TO *DEALS IN THE HEARTLAND*

by Josh Mandelbaum

Josh Mandelbaum is a Senior Attorney at the Environmental Law & Policy Center.

I am a Senior Attorney at the Environmental Law & Policy Center (ELPC). I am based in Iowa, a state with 13,000 megawatts of wind generation—a significant amount of generation. I also have a second role not related to ELPC, but relevant to this panel: I'm a local elected official, so I deal with zoning. I am in a city so I don't deal with large-scale renewable energy siting, but I know exactly how contentious zoning discussions can be and the impacts zoning fights can have on a community. Resistance to changed land use is not unique to rural communities, but it does impact how we solve renewable siting problems in this country.

This article is really important and timely in that it asks some key questions and makes some key points. One of the important observations in the article, and the authors' rationale for tackling these siting issues, is that if we continue to do things as we have, there will be more renewable energy projects that fail than need to fail. Part of what that means is tackling the conflicts around renewable siting. Addressing conflict is part of the role that law plays—trying to help navigate how we balance competing interests.

There are a lot of different competing interests that come into play when addressing renewable energy siting. There are different policy goals. The climate policy goal is a central one and one of the motivations of this article. There are also local economic development and quality of life goals that impact how local officials react. There is also the broader philosophy of local control, which is a central piece of policy discussions in this country. As a local elected official, I value the importance of local control highlighted in this article, but local control isn't an absolute. It can exist on a continuum and that sometimes is missing from discussions about renewable energy siting.

One policy interest that wasn't really talked about in this article—but that is very much relevant—is that there are implications for property rights policy in how we resolve siting issues: What does the landowner get to do? How does a use impact the property rights of neighbors? Property rights are a piece of the cultural fabric in a lot of rural communities. Anecdotally, my in-laws chose to live in rural Story County, because my father-in-law's hobby is ham radio. He wanted to put a100-foot tower in his backyard, which he couldn't do in the city. Property rights and greater freedom to do what one wants with their property is a piece of why people live in parts of rural America, and this property rights piece is an interest that needs to be considered and valued in the balancing of interests around renewable siting.

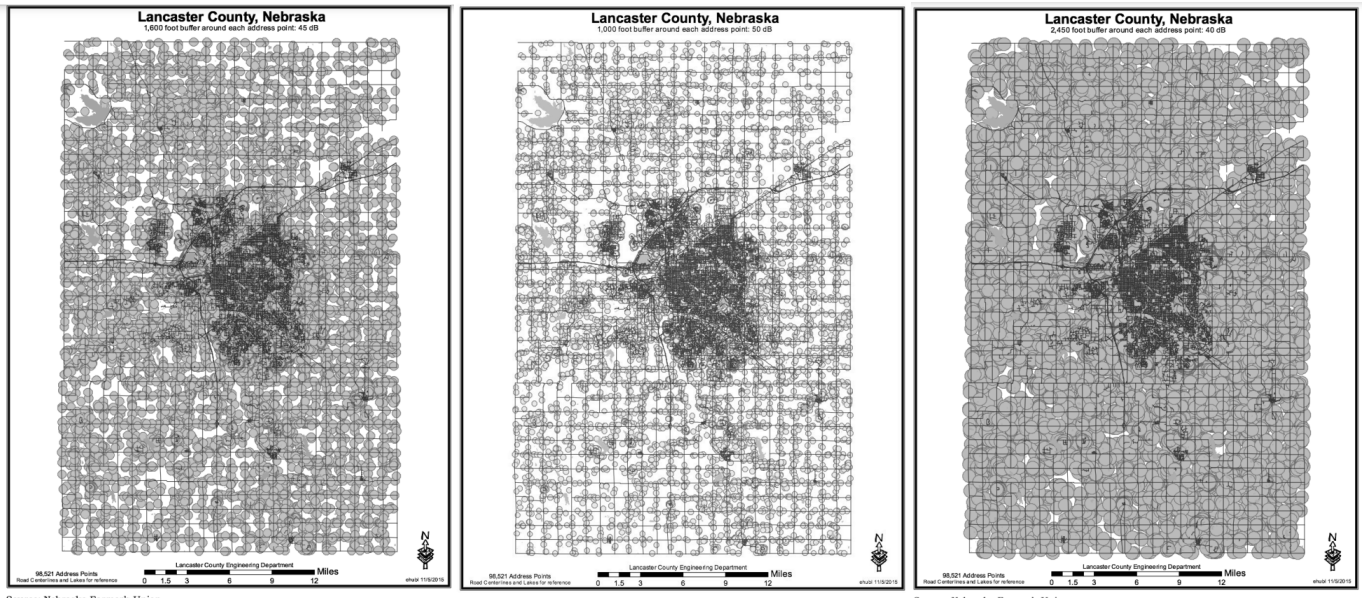
Siting principles for renewable projects can help bring balance to these conflicts. Principles can make their way into local or state law. They can also be reflected in the way developers approach projects and voluntary negotiations, and that's important, too. Not all renewable project developers are equal. Developers can approach projects in vastly different ways and that impacts a community's experience. Principles can help provide a check on what can sometimes be bad actors in the development community.

The first principle is that the door should remain open for clean energy development—wind, solar, and storage at all scales in all communities, including in the rural working landscapes. This principle takes one of the premises of this article, "I'm not anti-wind. I'm anti-how-this-was-done,"[1] at face value and really tries to engage and help solve that. There is another sentiment that was acknowledged in the conclusion of the article—even with all the policy recommendations on transparency and compensation, there are some folks who are going to be anti-wind regardless of those efforts. This principle makes a policy determination and reflects that more renewable generation projects is a direction that we need to go and that solv-

Editors' Note: Josh Mandelbaum's Comment is based on an edited transcription of his remarks at the Environmental Law and Policy Annual Review conference. See 2023-2024 Environmental Law and Policy Annual Review Conference, available at https://www.eli.org/events/2024-environmental-law-and-policy-annual-review-elpar-conference.

1. Christiana Ochoa et al., *Deals in the Heartland: Renewable Energy Projects, Local Resistance, and How Law Can Help*, 107 Minn L. Rev. 1055, 1099 (2023) ("One interviewee summed up his feelings about the process by saying: "I'm not anti-wind. I'm anti-how-it-was-done-here.").

Figure 1. Wind Turbine Siting Potential in Noise Ordinance Scenarios of 50, 45, and 40 Decibels in Lancaster County, Nebraska



Source: Center for Rural Affairs, Information Guide: Wind Energy Ordinances, https://www.cfra.org/publications/information-guide-wind-energy-ordinances (2018).

ing siting conflicts means balancing interests, not banning renewable energy development.

Following from that is a second principle: Regulation should follow planning best practices. Any variation on a regulation that deviates too much from best practice into a de facto ban should be avoided. There are a lot of different pieces that can be covered in "best practices"—setbacks, decommissioning, and construction mitigation. Best practices will vary by technology and differ for wind versus solar, but best practices are pretty well-established and constantly worked on—and should be reflected in policy and law.

Avoiding the de facto ban on new renewable projects is an important part of this principle because the de facto ban is where local control may go too far. De facto bans happen with setback requirements. De facto bans happen with noise standards. In Iowa, a legislator proposed a solar bill to use Corn Suitability Rating[2] to determine what land was eligible for solar projects. Those are all ways to get to de facto bans.

To illustrate how a seemingly reasonable standard can become a de facto ban, it helps to review real world examples. For example, the Center for Rural Affairs *Information Guide: Wind Energy Ordinances* provided maps of Lancaster County, Nebraska, demonstrating where it was possible to build wind turbines with a noise ordinance of 50 decibel, 45 decibels, and 40 decibels. As the standard gets more stringent (lower decibel limit), the buffer required from a turbine gets larger and the places that a turbine can be sited gets progressively smaller. Eventually, there is literally nowhere that a renewable developer can build. It makes projects impossible. Another common example is setbacks requirements. In Butler County, Nebraska, a 1,300-foot setback requirement limits siting options, but there are still multiple areas where a project can be built. Increase that setback requirement to 3,400 feet and a developer can build almost nowhere.

De facto bans get things out of balance and that is when state laws may look to bypass or preempt local laws. Statewide siting has happened in a number of different ways. One particularly interesting example that has not become law yet is the Iowa Legislature's recent consideration of a gas station ban preemption. The local anti-wind folks were some of the most opposed to the proposed gas station ban because it was a ban on de facto bans. They were concerned that it would impact the local ordinances that were a major part of their tactics.

A third key principle is that the landowner should be the decisionmaker over whether their land is developed for clean energy development. This principle can be compatible with regulation particularly if the regulation gives property owners the ability to opt out or waive requirements as to their property. All of the current renewable projects are voluntary projects. Eminent domain has not been used for wind projects—a major piece of critical infrastructure—and that is unusual. In contrast, think about an interstate highway or a transmission line—those projects can't be built without some use of eminent domain. Wind projects are being built because there are folks who voluntarily enter into contracts, who feel like they have been treated fairly, and will get something out of agreeing to host a renew-

2. *See, e.g.*, Iowa Public Radio, "Iowa lawmakers advance a bill placing restrictions on solar panels built on farmland," https://www.iowapublicradio.org/state-government-news/2022-02-15/iowa-lawmakers-advance-a-bill-placing-restrictions-on-solar-panels-built-on-farmland (proposed bill would prohibit installation of solar panel field on agricultural land "unless the land they want to install it on has a corn suitability rating of 65 or lower) (2022).

able project on their land. As long as the law continues to provide property owners with the ability to make decisions about their land, there will continue to be siting options for renewable energy projects.

Part of the reason that landowners will consider renewable energy development has to do with the fact that rural America has been changing over time. Farms have become larger and larger, and large farms have pushed out small farms in a lot of cases. Wind and solar projects have been a lifeline to diversify revenue and sustain the existence of small farms in multiple cases by allowing a farmer to use a portion of land to add revenue from wind and solar leases. In other words, the lease provides a real and significant benefit to the participant.

Anecdotally, I have a neighbor who lives in Des Moines and grew up on a family farm. They now have wind turbines on their farm, and those wind turbines are retirement security for his father and allows him to continue living on the farm. The other interesting story related to that particular project is that it was outside of a small town. The small town annexed the land that the wind turbines were on to incorporate it into the city limits. The town wanted the tax benefits that were associated with the wind project, because it would help make tangible investments in the community.

An important principle for maintaining balance and protecting the rights of non-participating property owners in the siting discussion is that renewable projects should be designed to reasonably protect health, safety, welfare, and quality of life. What that means is that a project or local ordinance can take steps to require radar systems to reduce nighttime light pollution from flashing red lights, because technology exists to solve the issue. Projects can also be designed using best practices to limit shadow flicker and to require construction mitigation. Projects can be sited to avoid unique local places and environmentally sensitive areas. But it does not mean that a community can regulate to the point of a de facto ban or use a vague notion of quality of life to prevent any change in the landscape. Rural landscapes are dynamic landscapes and always have been. The laws should balance quality of life with new uses but should not be used to prevent any change.

Finally, the principle of transparency should allow residents to understand and have input into a project before approval of the project. It is critical to engage communities so that they have input into a project and the potential for input as a project is being designed. But, again, transparency does not mean a veto over a project—transparency should be reasonable as well. There is more that can be done to have community engagement outside of the zoning or regulatory process. This includes public meetings where people can come provide input, identify sensitive areas in a county, and engage and share their concerns. There is research that shows that developers are willing to engage in this way and that their projects can benefit from such engagement.

COMMENT ON *DEALS IN THE HEARTLAND: RENEWABLE ENERGY PROJECTS, LOCAL RESISTANCE, AND HOW LAW CAN HELP*

by Christopher McLean

Christopher McLean is the Assistant Administrator for the Electric Program at the Rural Utilities Service of the U.S. Department of Agriculture.

What I found so compelling in this article was the human factor—the authors could have written the same article about what is going on in solar, biodigesters, hydro projects, or trash-to-energy projects. There is a good amount of research that could be done as to why this has cropped up recently. The human stories in the article are heartbreaking—this issue is dividing families, and people are being effectively excommunicated from their churches because of what side they are on.

The slides I want to share give context as to why I am so worried about this trend and what we are trying to do at the U.S. Department of Agriculture (USDA) to address some of these issues. This includes investments we are making under the Inflation Reduction Act (IRA), such as requiring community benefit planning that includes community engagement and an expression of the benefits that are outside the scope of particular projects. Secretary Tom Vilsack, in particular, is interested in farmer benefit planning to show how we can use clean energy to increase farm income.

Federally funded projects must go through environmental review under the National Environmental Policy Act, the Endangered Species Act, and Section 106 of the National Historic Preservation Act.[1] Those reviews can get very complicated and take a long time. It is sometimes frustrating for those of us who want to build and finance projects, but the reviews do have an element of public engagement, which is very, very important, including consideration of protecting prime farmland.

Cooperative leadership is also something that our agency focuses on. We work a lot with rural electric cooperatives, for example, and their business structure is unique. I encourage the students in the audience to study the cooperative business structure because it is consumer-owned.

The Rural Utilities Service (RUS) is the successor agency to the Rural Electrification Administration. We begin our origin story here in deference to the good people of Vanderbilt by starting in 1933 with the Tennessee Valley Authority Act. The RUS Administrator, Andy Berke, is the political appointee who runs our agency. He is from Tennessee and has experience with municipal electric systems as a former mayor of Chattanooga.

George Norris was the author of the Tennessee Valley Act, which was the inspiration for the Rural Electrification Act (REA), which he authored. President Franklin Delano Roosevelt created the REA by executive order in 1935. Norris was a Republican who supported the New Deal and was from the great state of Nebraska. In 1936, the U.S. Congress enacted the REA. President Harry S. Truman, in 1949, signed into a law the amendments that expanded the agency's jurisdiction to telecommunications. Also in this era, USDA started to finance water infrastructure in rural areas.

When the REA was rolling out electricity in 1935 to rural areas, 10% of American farmers had electricity, and there was a lot of fear about electricity. The REA used to have tent shows and go to communities to say that electricity is safe, it's not going to make your cows produce less milk, and it's not going to electrocute you.

The latest chapter in our story is the IRA, which is the greatest investment in rural electrification since the New Deal. It is an extraordinary piece of legislation. I encourage everyone to look at the New Deal for inspiration. If you want to talk about man-made climate change, look at the Dust Bowl—poor farming habits, overgrazing, lack

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1. 42 U.S.C. §§4321-4370h, ELR STAT. NEPA §§2-209; 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18; 54 U.S.C. §300106.

of science, and lack of crop rotation—man-made climate change. And how did that get solved? It was with man-made science—from USDA and its Extension Service combining research, education, and outreach. Rural America in the 1930s was about as third-world as you could imagine. And for women, there was no movement in rural America more important than rural electrification, because it was an absolute liberation from the drudgery of having to haul water to cook with coal or wood.

We are so excited about the IRA. Congress gave Rural Development, which includes the RUS, $1 billion for partially forgivable loans for clean energy investments. Partial forgiveness will be at the rates of 20% forgiveness, 40% forgiveness, and 60% forgiveness, depending on the communities served. If you are in an energy-dependent community or a disadvantaged community, you could get up to 40%; if you are a tribal community or one of the territories, you can get up to 60% loan forgiveness. Congress also gave the RUS $9.7 billion for clean energy loans and grants. Grants can support up to 25% of an eligible clean energy project. As a result, that $9.7 billion will leverage billions of dollars of more investment.

Our sister agency, the Rural Business and Cooperative Service (RBCS) has the Rural Energy for America Program (REAP), which Prof. Christiana Ochoa mentioned in her article. That program is for farm operators and rural businesses to invest in energy efficiency and renewable power to reduce their costs. Congress upped the funding for REAP to $1.05 billion—it is a tremendous program. At the RUS, we are on the wholesale side financing electric infrastructure and renewable and energy efficiency. REAP is on the retail side, the consumer and rural business areas.

It is also really important that the IRA provides for direct pay tax credits for the first time for co-ops, municipalities, and nonprofits. This is another tremendous opportunity to address some of the issues that were raised in the article, because those tax benefits, instead of going to developers and Wall Street investors, can go to communities, to cooperatives, and really make this power extremely affordable for consumers. There are also consumer tax credits for a host of energy-efficiency measures. Other federal agencies like the U.S. Department of Energy and the U.S. Environmental Protection Agency have energy benefits as well.

Soon after the IRA passed, there was a lot of skepticism, particularly from the biggest carbon-producing cooperatives saying, "We're not sure if this is for us. We've got to worry about reliability." Those of you in Tennessee, you know we were fresh off of Winter Storm Elliott, during which, for the first time, the Tennessee Valley Authority had brownouts across its service territory. In the previous year, Winter Storm Uri in Texas caused deaths due to loss of electricity, and consumers are going to be paying for years for the cost of their power.

This concern about electric reliability is a big deal for utilities and not only for rural utilities that have limited resources. For many years, the United States plateaued in terms of energy consumption as energy efficiency went into place. Now, we are coming out of the pandemic and demand for energy use is going up for things like beneficial electrification, electrification of the transportation segment, and data centers (which use huge amounts of energy and can be located in rural communities).

As we went through the summer promoting these programs' forgivable loans and grant support, you could feel the earth move. It just changed through the summer. When we first got this program, we were thinking, "Maybe we don't have to worry about scoring because we're not going to get enough applications to be able to use this money." We got 300 letters of interest for the Powering Affordable Clean Energy (PACE) program, a billion-dollar program that is a lot of money, but we kind of stopped counting at around 12 times the amount of interest. The tragedy of this is actually that we are not going to be able to fund really good projects that are in the queue. The New Empowering Rural America (New ERA) program provides $9.7 billion statutorily focused exclusively on rural electric cooperatives. RUS received about 160 letters of interest. So for that $9.7 billion, the interest was at least four times as great as the money that we had to offer.

Secretary Vilsack just announced the first five PACE Awards and we are now moving to process the New ERA applications.

The important thing about REAP ($1.6 billion in grants and loans since the start of the Joseph Biden-Kamala Harris Administration) is that there is $800 million available until 2025. The RBCS is going to roll out $200 million per year from 2025 to 2027. The REAP application cycle is a quarterly cycle, and if you apply for the program and you don't get it, you can try again. There is a set-aside for $144 million for underutilized technology, which currently means anything but solar. There's a wind opportunity, there's a hydro opportunity, and there's a biomass opportunity.

Our standing REA activity is also robust. RUS can finance everything that a rural utility would need, whether it's infrastructure or project financing. We have a small high-energy cost grant program that typically goes to places like Alaska. We can make operating loans. We can make smart grid loans. We even provide financing to others who finance rural electric utilities. And we have an energy-efficiency program. RUS will lend money at 0% interest to a utility to relend it to their consumers for energy efficiency. The consumer pays back the utility through on-bill financing, and the utility pays us back. That can include on-grid, off-grid renewable energy.

To provide a scale of our level of investment, last fiscal year, we invested $6.88 billion in rural electric infrastructure. I came back to the USDA in 2015, so for me, it's a personal best. This is loan-only investment, usually at or near U.S. Treasury rates of interest. The electric grid is the most complicated machine known to humankind. Think about how panicked you get when your cell phone runs out of power. But the grid always has to be in balance, the grid has to deliver power when it is needed, and the grid is changing from single directional (from the power plant to the transmission line to the distribution line, to your home) to multi-directional (where power is moving in all directions, and data is essential to move that power). There

is a huge need, especially in rural America, to invest in infrastructure. We're trying to meet that need.

We are very proud of the co-op business model. Co-ops are an important part of rural America. Co-ops, again, are consumer-owned organizations, so when a co-op invests in wind, solar, biomass, whatever, the co-op members, who are the members of that community, also benefit from it. The margins go to consumers (they are generally non-taxable business organizations). We will also work with investor-owned utilities, municipal utilities, developers, tribal utilities, and energy-efficiency entities.

The overwhelming response to our two IRA programs shows that there is a lot of rural imagination, excitement, and anticipation around a clean energy future. The reason rural America has a hard time making this transition is, frankly, economic. When you have a coal plant, a 50-year asset that is already paid off, the reaction is, "What do you mean they have to close it down? And how am I going to afford it?" Before the IRA direct pay tax credits, a big investor-owned utility could deduct it from their taxes, but co-ops couldn't do that, and municipalities couldn't do it. These tax benefits in the IRA are going to be a major improvement. If we get the incentives right, we get the excitement, we get the anticipation, and we get the new visions of economic development.

The sad thing for me, as thrilled as I am with this overwhelming response and the work that it presents our agency with, is that there are going to be a lot of projects that are really good but we are going to run out. I could use another $9.7 billion. I could use years of billions of dollars to keep on going through that list before we would run out of good clean energy projects.

Rural America already spends more of their disposable income on power than anyone else. When you are dealing with these issues you have to think about that. The value proposition has to be affordable clean energy. The infrastructure is aging and there is growing demand. Compared to the nudge, this is the magnet. Without these kinds of incentives to transition, it would be extremely, extremely difficult.

ARTICLE

THE NEGOTIABLE IMPLEMENTATION OF ENVIRONMENTAL LAW

by Dave Owen

Dave Owen is the Associate Dean for Research and Harry D. Sunderland Professor of Law, University of California College of the Law, San Francisco.

I. Introduction

In theoretical accounts of environmental law, traditional environmental-law education, and much of the discourse of environmental-law implementation, negotiation is absent, except in a few celebrated and seemingly exceptional settings.[1] When scholars and policy advocates do address the roles of negotiation, they tend to default to two competing conceptions. In one—the "command-and-control" view[2]—environmental law is problematically centralized and rigid,[3] and negotiation exists only in exceptional circumstances.[4] In the alternative conception—call it the "slippage" view—the rigid protections exist on paper but not in practice, and environmental-law implementation involves government regulators allowing regulated industries to get away with varying degrees of noncompliance.[5] In this latter view, negotiation is common, but it serves only to decide how far real-world practices can deviate from the law.[6]

However, negotiation is a defining feature of environmental law. In many realms of environmental law, the actual standards to be applied are up for negotiation, as are the nature of the actions being evaluated and the interpretation of key facts surrounding those actions. Negotiation helps determine what the law will be, how it will apply, and what it will apply to.[7] It therefore is often a prerequisite rather than an impediment to effective environmental law. And one cannot understand environmental law without understanding these roles for negotiation. Nor can one appreciate the potential benefits for tailored and creative implementation.

But the pervasiveness of negotiation also should raise concerns, for environmental law may not handle negotiations nearly as well as it should. The centrality of negotiation has developed somewhat organically and with little transparency, so that many key participants in environmental-law implementation have minimal understanding of what is up for negotiation and when, or about how to negotiate well. There is ample anecdotal evidence, which this Article uncovers, that negotiation-based systems do not serve the underlying values of environmental law nearly as well as they could or should.[8]

A massive buildout of new infrastructure will probably require navigating many of the negotiation points described in this Article.[9] If these negotiation points can

Editors' Note: This Article is adapted from Dave Owen, *The Negotiable Implementation of Environmental Law, 75* Stan. L. Rev. 137 (2023)*, and used with permission.*

1. *See, e.g.*, Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 Minn. L. Rev. 342, 427-32 (2004) (describing habitat conservation planning); Richard B. Stewart, *A New Generation of Environmental Regulation?*, 29 Cap. L. Rev. 21, 25, 39, 64-68, 73-75, 87-94 (2001) (describing negotiated rulemaking, Project XL, and habitat conservation planning, and asserting that most "initiatives to adjust the established command system . . . have been accomplished through administrative steps taken outside of the existing statutory structure" and that these initiatives have "made a positive but limited contribution"); Jody Freeman, *The Private Role in Public Governance*, 75 N.Y.U. L. Rev. 543, 653-61 (2000) (describing negotiated implementation of environmental law in a few specific contexts); *see* Shi-Ling Hsu, *A Game-Theoretic Approach to Regulatory Negotiation and a Framework for Empirical Analysis*, 26 Harv. Env't L. Rev. 33, 39 (2002) (describing reservations about negotiated rulemaking and Project XL). Not surprisingly, negotiation specialists have given environmental negotiations more attention; *see, e.g.*, Lawrence Susskind, Paul F. Levy, & Jennifer Thomas-Larmer, Negotiating Environmental Agreements: How to Avoid Escalating Confrontation, Needless Costs, and Unnecessary Litigation (2000).
2. *See infra* notes 18, 38 and accompanying text. In the environmental-law field, the phrase "command and control" is widely and imprecisely used. *See* Jodi L. Short, *The Paranoid Style in Regulatory Reform*, 63 Hastings L.J. 633, 658-59 (2012) (noting that the phrase "is rarely defined and its meanings and functions have become either submerged or taken for granted"). I use it here because of its popularity among environmental law's critics.
3. *See* Timothy F. Malloy, *The Social Construction of Regulation: Lessons From the War Against Command and Control*, 58 Buff. L. Rev. 267, 268-69 (2010) (summarizing and critiquing this rhetoric).
4. *See* Hsu, *supra* note 1, at 39; Stewart, *supra* note 1, at 25, 39.
5. *See, e.g.*, Mary Christina Wood, Essay, *Nature's Trust: Reclaiming an Environmental Discourse*, 25 Va. Env't L.J. 243, 252-55 (2007) (asserting that regulatory agencies use their discretion to undercut environmental law); Daniel A. Farber, *Taking Slippage Seriously: Noncompliance and Creative Compliance in Environmental Law*, 23 Harv. Env't L. Rev. 297, 299 (1999).
6. *See, e.g.*, Amy Sinden, *In Defense of Absolutes: Combating the Politics of Power in Environmental Law*, 90 Iowa L. Rev. 1405, 1411, 1488-1510 (2005) (describing negotiations over the implementation of the Endangered Species Act); Farber, *supra* note 5, at 320 ("[S]lippage is another name for noncompliance."); David Strifling, Comment, *Sanitary Sewer Overflows: Past, Present, and Future Regulation*, 87 Marq. L. Rev. 225, 226, 232-34 (2003).
7. *See infra* Part II.
8. *See infra* Part IV.
9. *See* Michael B. Gerrard, *Legal Pathways for a Massive Increase in Utility-Scale Renewable Generation Capacity*, 47 ELR 10591, 10603-13 (July 2017) (describing legal challenges and multiple legal obstacles).

be navigated efficiently and in ways that produce both better economic outcomes for regulated industries and stronger environmental protections, the nation and the world will benefit.

II. The Negotiable Implementation of Environmental Law

Negotiation is an important feature of environmental-law implementation. However, not everything is negotiable. In every subfield, there are some matters regulators are less likely to negotiate or do not negotiate at all. Relatedly, environmental law is filled with policy choices about what will be negotiable, by whom, under what circumstances, and what the alternatives to negotiation will be. The result is a heterogenous, sometimes pragmatic and innovative, and sometimes counterintuitive patchwork quilt of regulatory approaches.

This part briefly summarizes that patchwork quilt, focusing on regulatory arenas that scholars and attorneys typically view as the core areas of environmental law.

A. Waste Site Cleanup

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) governs contaminated site cleanups, and more specifically, the assignment of liability for investigations and cleanups.[10] In contrast to the other statutory regimes discussed in this Article, there is little novelty in observing that CERCLA implementation emphasizes negotiation. Most practitioners and academics know that CERCLA generates many negotiated settlements. The U.S. Environmental Protection Agency's (EPA's) website states its preference for negotiated resolutions,[11] and the agency publishes guidance documents on reaching more effective CERCLA settlements.[12] CERCLA thus illustrates not just the pervasiveness of negotiation in environmental-law implementation, but also a deliberate and open approach to embracing that pervasive role. The former characteristic is typical of environmental law. The latter is not.

B. Endangered Species Act Implementation

When people think of the Endangered Species Act (ESA), they do not tend to think of negotiation.[13] The statute is legendary for its supposed rigidity. But negotiation matters to every element of this regulatory system, though to different degrees and in different ways. The timing of listing decisions follows schedules set forth in negotiated settlements.[14] Listing decisions also can lead to negotiated "Candidate Conservation Agreements," and nonfederal property owners can enter into "Candidate Conservation Agreements With Assurances."[15] Once species are listed, ESA §7 compliance often involves negotiations. As one U.S. Fish & Wildlife Service official put it, "formal consultations almost always have negotiations, and a lot of informal consultations also have negotiations when there's the ability to modify an activity."[16] So too does the preparation of habitat conservation plans, which are motivated and governed, respectively, by ESA §§9 and 10. As one attorney summed up ESA implementation, exaggerating only slightly, "it's all negotiation, actually."[17]

C. Clean Water Act Permitting

The classic rigidity critiques of environmental law tend to be stated in sweeping terms but are often focused primarily on pollution-control permitting programs.[18] Among these programs, the Clean Water Act's (CWA) National Pollutant Discharge Elimination System (NPDES) permitting program is particularly prominent.[19] Yet, even NPDES permitting also includes substantial elements of negotiation—as do other key elements of CWA implementation. Compliance schedules, variances, water quality-based effluent limits, stormwater permit contents, total maximum daily loads, and permits for filling waters of the United States all routinely involve negotiating. As one private firm attorney explained, describing his representation of municipal wastewater treatment plants, "pretty much in every permit, there's at least one or two really big issues that have to be negotiated."[20]

D. Clean Air Act Permitting

Likewise, even in Clean Air Act (CAA) permitting, which traditional accounts might lead one to believe is a pinnacle of centralized rigidity, negotiation is crucially important.[21] For example, new source review is generally carried out by

10. 42 U.S.C. §§9601-9675, ELR Stat. CERCLA §§101-405; Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 602 (2009).
11. *Negotiating Superfund Settlements*, Env't Prot. Agency, Aug. 15, 2022, https://perma.cc/QHU3-EY6K) ("EPA prefers to reach an agreement with a [potentially responsible party] to clean up a Superfund site instead of issuing an order or doing the work and then recovering its cleanup costs later.").
12. Memorandum from Barry Breen, Dir., Off. of Site Remediation Enf't (June 17, 1999), https://perma.cc/G7WT-93DA (describing "Negotiation and Enforcement Strategies to Achieve Timely Settlement and Implementation of Remedial Design/Remedial Action at Superfund Sites").
13. 16 U.S.C. §§1531-1544, ELR Stat. ESA §§2-18.
14. *See, e.g.*, Felicity Barringer, *U.S. Reaches a Settlement on Decisions About Endangered Species*, N.Y. Times (May 10, 2011), https://perma.cc/9BYX-UZXG (describing a settlement involving hundreds of species).
15. *Candidate Conservation Agreements*, U.S. Fish & Wildlife Serv. (Oct. 2017), https://perma.cc/24NQ-BMC2.
16. Interview with U.S. Fish & Wildlife Service Official (Sept. 13, 2021); *see also* Interview with Private Firm Attorney (Oct. 4, 2021) ("They are typically heavily negotiated.").
17. Interview with Private Firm Attorney (Oct. 8, 2021).
18. *E.g.*, Bruce A. Ackerman & Richard B. Stewart, Comment, *Reforming Environmental Law*, 37 Stan. L. Rev. 1333, 1335 (1985).
19. 33 U.S.C. §§1251-1387, ELR Stat. FWPCA §§101-607; *see* Ackerman & Stewart, *supra* note 18; *see also* William F. Pedersen Jr., *Turning the Tide on Water Quality*, 15 Ecology L.Q. 69, 70-71 (1988).
20. Interview with Private Firm Attorney (Sept. 7, 2021).
21. 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.

state permitting entities[22] pursuant to flexible standards.[23] The result, typically, is negotiation. Similarly, some of the most important air quality regulations address tailpipe standards for automobiles, and those standards have sometimes emerged from complex negotiated deals with the automobile industry.[24] The CAA's regulatory scheme is too massive to summarize in this Article, but negotiation is not unique to stationary-source permitting and automobile emissions standards. For the Act as a whole, as for other areas of environmental law, negotiation is key.

E. Environmental Impact Assessment

Like most of its fellow members of the environmental-law canon, the National Environmental Policy Act (NEPA) does not appear to be a negotiation-framing statute.[25] Nor do its state-law counterparts. But in practice, compliance with environmental impact assessment laws often involves multiple stages of negotiation.

For actions implicating NEPA, the negotiations can start at the outset of the process. The "lead agency" generally must make a series of discretionary decisions, including defining the proposed action, drafting a statement of purpose and need for that action,[26] deciding the range of alternatives that it will analyze,[27] determining whether it will prepare an environmental impact statement (EIS) at all,[28] and deciding how it will describe potential impacts.[29] Often, project sponsors have different views about how these questions should be resolved, as, sometimes, do other agencies or officials within the lead agency. The resulting negotiations can address every facet of compliance. NEPA and its state counterparts also can produce extensive negotiations involving other interested parties. These negotiations can be focused and bilateral, but they can also be complicated, multiparty affairs.

F. Enforcement

Enforcement actions open a potential new phase of negotiation.[30] Environmental litigation is expensive and often unpredictable, and parties have incentives to avoid litigating cases to completion.[31] Negotiating a settlement is an appealing alternative.[32] Government agencies have broad discretion to craft terms of settlements. Environmental statutes leave in place agencies' traditional enforcement discretion,[33] which means agencies generally can offer nonenforcement as a carrot to induce negotiated changes.

III. Implications

Negotiation is more pervasive in environmental law than traditional accounts of the field acknowledge. That centrality has implications for traditional critiques of environmental law. The prevalence and nature of environmental-law negotiations partially undercut command-and-control critiques. Negotiation's prevalence similarly undercuts critiques that equate negotiation with slippage.

A. Flexibility and Decentralization

Classic critiques claim that the United States' systems of environmental law are overly centralized and rigid.[34] In those critiques, environmental law is a command-and-control system, largely implemented through uniform national standards applied with little regard to the needs of specific facilities or places.[35] Closely related to that charge are concerns about informational deficits.[36] These views have been influential.

Acknowledging the importance of negotiation undercuts these critiques. Initially, the prevalence of negotiation shows that nearly every major environmental regulatory program incorporates significant elements of flexibility.[37] Regulators are taking the general standards and directives of environmental statutes and adapting them to specific situations.

A corollary to this flexibility is a surprising level of creativity. Environmental practitioners routinely described situations in which negotiation allowed them, or other people they work with, to come up with creative solutions to environmental challenges.

The prevalence of negotiation also undermines arguments about informational deficits. In their classic form, these arguments are premised on the assumed absence of direct communication between the regulators who make meaningful decisions and the people who are actually

22. *See* Holly Doremus & W. Michael Hanemann, *Of Babies and Bathwater: Why the Clean Air Act's Cooperative Federalism Framework Is Useful for Addressing Global Warming*, 50 Ariz. L. Rev. 799, 819 (2008) (describing state and federal authority over stationary source permitting).
23. *See* 42 U.S.C. §7479(3).
24. *See* Jody Freeman, *The Obama Administration's National Auto Policy: Lessons From the "Car Deal,"* 35 Harv. Env't L. Rev. 343, 344-45 (2011); *see also* Coral Davenport, *Defying Trump, 5 Automakers Lock in a Deal on Greenhouse Gas Pollution*, N.Y. Times (Aug. 17, 2020), https://perma.cc/LQK9-QGN8.
25. 42 U.S.C. §§4321-4370h, ELR Stat. NEPA §§2-209; *see* §§4321-4347 (making no mention of negotiation).
26. 40 C.F.R. §1502.13 (2021); *see* Simmons v. U.S. Army Corps of Eng'rs, 120 F.3d 664, 666 (7th Cir. 1997).
27. *See* 40 C.F.R. §1502.14 (2021).
28. *See, e.g.*, Nat'l Parks Conservation Ass'n v. Semonite, 916 F.3d 1075, 1077 (D.C. Cir. 2019) (describing, and rejecting, the U.S. Army Corps of Engineers' decision against preparing an EIS for a major utility line project).
29. *See* 40 C.F.R. §1502.16 (2021).
30. *See* Freeman, *supra* note 1 (describing this centrality); Interview with Private Firm Attorney (Aug. 30, 2021) (describing enforcement as involving "negotiation all over the place").
31. *See* Seema Kakade, *Remedial Payments in Agency Enforcement*, 44 Harv. Env't L. Rev. 117, 126 (2020) (describing these incentives); Robert L. Glicksman et al., *An Empirical Assessment of Agency Mechanism Choice*, 71 Ala. L. Rev. 1039, 1055 (2020) (finding that settlements occurred in the "vast majority" of a sample of environmental enforcement cases).
32. *See* James J. Prescott & Kathryn E. Spier, *A Comprehensive Theory of Civil Settlement*, 91 N.Y.U. L. Rev. 59, 60-61 (2016) (explaining the basic rationales for settlement).
33. *See* Antonin Scalia, Paper, *Responsibilities of Regulatory Agencies Under Environmental Laws*, 24 Hous. L. Rev. 97, 105 (1987) (describing agencies' enforcement discretion).
34. *See* Malloy, *supra* note 3 (summarizing these critiques).
35. *See supra* note 18 and accompanying text.
36. *See supra* note 1, *infra* note 38 and accompanying text.
37. *See supra* Part II.

affected.[38] But negotiation is communication, and such communication is constantly occurring at multiple levels of governance.

If the prevalence of negotiation undercuts many of the premises of these classic critiques, it also undercuts their conclusions. Because much of environmental law is negotiated on a site-specific basis,[39] policymakers may not need to resort to environmental trading systems or self-governance to allow regulated entities to tailor regulatory burdens to their particular opportunities and needs. Permit writers are already doing that.

B. Slippage and Discretion

Another classic critique of environmental law treats its supposed rigidity as an often-squandered virtue. In this telling, the agencies that implement environmental law routinely allow regulated entities to ignore environmental law's strict mandates.[40] Sometimes, in these critiques, negotiation is a key mechanism through which gaps open between the protective laws on the books and the less protective law in action. But a closer look at the roles of negotiation demonstrates that while negotiation can be a mechanism for slippage, even people who strongly support vigorous environmental regulation should sometimes view regulatory negotiations in a positive light.

The idea that negotiation can lead to better environmental solutions is not new to the environmental literature. Commentators have described many examples of innovative and valuable negotiated outcomes.[41] My additional contribution is to point out how pervasive these improvements are and how ingrained they are in the day-to-day grind of environmental regulation.

While acknowledging the roles of negotiation complicates both slippage critiques and the associated reform proposals, it does not necessarily undercut those proposals. Common responses to fears of slippage include advocating for petition rights, citizen suit provisions, and other measures that allow nongovernmental entities to demand stronger regulation even when government agencies are reluctant to provide it.[42] Sometimes, those measures may short-circuit regulatory negotiations, but often external oversight and negotiation will be compatible.

The larger point is not that negotiated slippage is a myth or that antislippage reforms are unjustified. Instead, the key points are that a significant amount of negotiation is not slippage-related and that a key goal of reforms should be to enhance and channel this negotiation rather than to limit it.

IV. Improving Regulatory Negotiations

The previous part placed environmental law's emphasis on negotiation in a positive light, and deliberately so. Negotiation has its benefits. But there is another side to the story. Environmental regulators' embrace of negotiation is uneven, underinformed, and poorly documented, which leads to a range of negative secondary consequences—and to some potential solutions. To address these consequences, a negotiating regulatory system ought to adhere to three basic principles. First, government should provide more transparency than private-sector negotiators typically offer. Second, government should negotiate effectively. Third, government should negotiate equitably.

With hundreds of agency offices handling thousands of negotiations every year, and with variation in approaches between regulatory programs, within those programs, and even among individual staff members at the same offices, a comprehensive account of existing negotiation practices at agencies is impossible.[43] Indeed, within that broad range of programs and participants, many negotiations probably are handled well. However, the evidence produced by this Article suggests several problems with environmental law's approaches to negotiations.

A. Transparency

A foundational administrative-law assumption is that regulated entities and other interested parties are entitled to know when government agencies are making important decisions, what criteria will inform those decisions, and how nongovernmental interests can have a voice in those choices.[44] Negotiated processes will sometimes require exceptions to those general principles; confidentiality can be important. But occasional exceptions should not stop agencies—and, sometimes, legislators—from providing clear information about situations in which negotiations are possible.

In most of the program areas described by this study, governing statutory law says nothing about the circumstances in which legislators hope to see negotiated outcomes (waste site cleanup is the key exception). Agency implementing regulations likewise say hardly anything about negotiations. Even handbooks and guidance documents governing situations in which negotiation is common are often silent about those negotiations. The U.S. Fish & Wildlife Service & National Marine Fisheries Service handbook on endangered species consultations, for example, uses the word "negotiate" only twice, both

38. *E.g.*, Richard B. Stewart, *Madison's Nightmare*, 57 U. Chi. L. Rev. 335, 343 (1990) (describing the information deficits faced by "[b]ureaucrats in Washington").
39. *See supra* Part II.
40. *See supra* note 5 and accompanying text.
41. *See, e.g.*, Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. Rev. 1, 41-55 (1997) (describing two successful exercises in negotiated rulemaking); Jody Freeman & Daniel A. Farber, *Modular Environmental Regulation*, 54 Duke L.J. 795, 847-51 (2005) (describing negotiations leading to the creation of the "Environmental Water Account" for California's Bay-Delta estuary); Dave Owen & Colin Apse, *Trading Dams*, 48 U.C. Davis L. Rev. 1043, 1073-80 (2015) (describing an innovative and negotiated dam-removal project).
42. *See generally* Joseph L. Sax, Defending the Environment: A Strategy for Citizen Action 102 (1971) (advocating for such measures).
43. Interview with Private Firm Attorney (Oct. 8, 2021) ("[S]ome of this is even within an office, right? Obviously, you're working . . . with individuals.").
44. *See* Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1027-28 (D.C. Cir. 1978) (explaining the values served by transparency).

times in reference to negotiating extensions for document deadlines.[45] EPA's NPDES Permit Writers' Manual says nothing at all.[46] Nor does its New Source Review Workshop Manual.[47] More generally, I am not aware of any source—prior to this Article—that has attempted to provide a general map of the situations in which environmental regulators negotiate.

Additionally, many negotiated environmental documents are not readily available. For example, no searchable database of non-EIS NEPA documents exists.[48] And even if the documents are available, the role of negotiation is often hidden from view. Permits generally do not document the ways in which the project proposal was modified—likely through negotiations—at the initial draft stage.[49] Likewise, the role of negotiation in NEPA compliance is often opaque.

The negotiating state does not need to be a hidden collection of black boxes, and several straightforward reforms would help address its opacity. Agencies could revise regulations, handbooks, and guidance documents to specify what they are willing to negotiate, what they are not willing to negotiate, what general goals the agency seeks to achieve in its negotiations, and what kinds of information outside parties should bring to facilitate effective negotiations. And agencies should also be willing, within the boundaries of reasonable confidentiality limitations, to document the outcomes negotiation has produced. Transparency efforts would help regulated entities and community groups better understand the outcomes they should expect; agency staff could learn about the agreements other staff are reaching, which could generate better and more consistent agreements; and academics and policymakers who are interested in negotiated outcomes would have much more data to work with.

B. Effectiveness

Environmental regulators also should be effective negotiators. Yet, many indicators suggest that agency staff members are poorly prepared for this task.

The most direct evidence of problems involves the training of government negotiators, which interviewees repeatedly described as a "trial by fire."[50] Some started negotiating without receiving any formal training.[51] Others had valuable training,[52] but they wanted more—and, if they were supervisors, they also wanted more training for their staff.[53] The only systematic and robust training programs described were EPA's program for CERCLA lawyers and the U.S. Department of Justice's (DOJ's) trainings for its litigators.[54]

Resources available to government negotiators also vary markedly. Some agencies have sufficient budgets to staff negotiations and hire outside facilitators.[55] But government and nongovernment interview subjects generally agreed that government negotiators are chronically under-supported.[56]

Additionally, academic institutions appear to be falling short. Many law schools provide environmental-law education, and many provide negotiation training, but the two do not always meet. Additionally, many of the people doing the negotiating—particularly on the government side—lack legal training.[57] Agency staff often have degrees in environmental sciences or environmental engineering, where the focus is on technical content rather than negotiating techniques.[58]

These deficiencies have consequences. Some environmental group representatives were frustrated at regulators' willingness to give away leverage,[59] while industry representatives argued that regulators should be better educated about industry needs and business models.[60] But a deeper theme, common to most of the critiques, was that the administrative state's ambivalent embrace of negotiating is reflected in the performance of its negotiators.

These are at least partially fixable problems. State and federal legislators could appropriate more money to staff and train regulatory agencies.[61] Compared to the overall cost of running a state or federal government, the additional investments could be quite modest, and the benefits could be substantial.[62] Hiring negotiation specialists also can help. Even if the U.S. Congress and state legislators do not want to set up independent offices, they can bolster training, consider hiring regulators from deal-making

45. U.S. Fish & Wildlife Serv. & Nat'l Marine Fisheries Serv., Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act 4-7, 5-3 to -4 (1998).
46. *See* Env't Prot. Agency, NPDES Permit Writers' Manual 5-1, 5-14, 5-15 (2010).
47. Env't Prot. Agency, New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting (1990).
48. *See Environmental Impact Statement (EIS) Database*, Env't Prot. Agency, https://perma.cc/W9AV-AUK7 (archived Oct. 22, 2022) (providing access to EISs but not other NEPA documents).
49. Interview with Community Group Attorney (Oct. 18, 2021) (noting that these negotiations "happen[ ] largely out of the public eye").
50. *E.g.*, Interview with State Water Quality Regulator (Oct. 25, 2021).
51. *E.g.*, Interview with U.S. Forest Service Employee (Nov. 29, 2021).
52. *E.g.*, Interview with State Water Quality Regulator (Oct. 25, 2021), *supra* note 50.
53. *E.g.*, Interview with State Water Quality Regulator (Sept. 14, 2021).
54. Interview with DOJ Attorney (Nov. 1, 2021).
55. *See, e.g.*, *Learn About Environmental Collaboration and Conflict Resolution*, Env't Prot. Agency, Oct. 6, 2022, https://perma.cc/YAR8-86R3.
56. *E.g.*, Interview with State Water Quality Regulator (Sept. 14, 2021), *supra* note 51.
57. Interview with Private Firm Attorney (Oct. 4, 2021).
58. *See* Shirley Vincent, Nat'l Council for Sci. & Env't, Interdisciplinary Environmental Education: Elements of Field Identity and Curriculum Design 21-22 (2010) (describing environmental studies curricula).
59. Interview with Environmental Group Representative (Aug. 25, 2021) (describing one federal agency as "a horrible negotiator").
60. *E.g.*, Interview with Private Firm Attorney, *supra* note 57.
61. Establishing protocols for peer review of negotiating practices also could help. *See* Daniel E. Ho, *Does Peer Review Work? An Experiment of Experimentalism*, 69 Stan. L. Rev. 1, 79-82 (2017) (describing benefits of regulatory peer review).
62. *See* Mark Febrizio & Melinda Warren, Regulators' Budget: Overall Spending and Staffing Remain Stable (2020) (providing figures on overall costs for federal regulatory agencies).

backgrounds, and establish a culture of negotiating openly and effectively.

C. *Equity*

This study also uncovered evidence that regulatory negotiations are not as equitable as they should be. Both regulators and attorneys representing regulated parties agreed that smaller, less resourced entities face disadvantages in negotiation-based systems. Some of those disadvantaged entities are regulated businesses; others are environmental or community groups.

The challenges arise for a variety of reasons. Sometimes, would-be participants do not know when negotiations are occurring or are not able to attend. In other circumstances, environmental and disadvantaged-community advocates are invited to the table but cannot staff extended negotiation processes, particularly if multiple processes are occurring at the same time. Sometimes, a lack of access to technical expertise becomes a barrier to effective participation.[63] Some environmental groups have highly sophisticated technical experts on staff, but others do not, and others are "spread so thin."[64]

One obvious possible reform—turning away from negotiating—might do more harm than good. The harsh reality is that most decisionmaking processes tend to favor experienced and well-resourced actors. Consequently, disadvantaged communities and other public-interest advocates might not achieve better outcomes under a system of bright-line, non-negotiable rules, or under a system in which agencies simply take a range of perspectives under advisement and then issue decisions without negotiating with anyone. Negotiation might be worse, just because it often takes longer, but the dialogue and engagement it creates will also sometimes provide advantages.[65]

But other things can be done. The transparency reforms described earlier are one important step. Similarly, training programs can emphasize techniques to help community groups and regulated entities with fewer resources get involved and succeed in negotiations. Intervenor funding also can be effective.[66] Openly acknowledging the centrality of negotiation could help environmental law move beyond a circumstance in which only the experienced and the connected know enough to see through the myth of a rigid, inflexible system.

V. Conclusion

Environmental-law implementation is built on negotiation. One would not know this from reading most of the classic accounts of the field, but in all the field's major programs, regulators, regulated entities, and sometimes environmental advocacy groups negotiate over the design of proposed actions and the obligations created by governing law.

Recognizing this centrality of negotiation has important implications for the field. The prevalence of negotiation undercuts critiques alleging that decentralization of regulatory authority is necessary to bring flexibility to the field. Similarly, the nature of regulatory negotiations undercuts claims that placing flexibility in the hands of regulators will inevitably lead to the weakening of environmental law. But even if recognizing negotiation's importance should soften some critiques, it supports others. Most significantly, and largely because environmental law has not openly embraced its close relationship with negotiation, the transparency, efficacy, and equity of environmental negotiations could substantially improve.

63. *See* Jonathan Skinner-Thompson, *Procedural Environmental Justice*, 97 Wash. L. Rev. 399, 413-14, 432-33 (2022).
64. Email from Environmental Organization Representative to author (Oct. 19, 2021, 6:46 PM PST) (on file with author).
65. *See* Interview with Community Group Attorney, *supra* note 49 (noting that negotiation allows her clients to obtain benefits they would not otherwise receive).
66. *See* Nat'l Ass'n of Regul. Util. Comm'rs, State Approaches to Intervenor Compensation (2021); *see also* Skinner-Thompson, *supra* note 63, at 439-40.

IMPLEMENTATING ENVIRONMENTAL LAWS: "NEGOTIATING EVERYTHING"

by John Cruden

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Although I'm teaching right now at George Washington University, I'm fundamentally a practitioner. By that, I mean I litigate. And if you litigate, you negotiate all the time, so it is interesting for me to read a law review article in which Professor Owen describes a world where people are surprised to find that people are negotiating. It reminds me of the movie *Casablanca* when the captain comes into Rick's gambling casino and says, "I'm so shocked—shocked—to find out that there's gambling here." There's a little bit of that tone in those surprised to find out that litigation is more than court presentations, shocked to find out that most cases end up in negotiated settlements.

Yet, I completely understand that it isn't simple to research what all of us are doing in practice. Research tends to be on cases or regulations and negotiations are in the trenches of our practice, happening every day, but not always visible to the public. Also, to be frank, it is one of the reasons why I love this quotation from the article: "In academic realms, meanwhile, it became received wisdom, at least among many heavily-cited professors at elite law schools, that environmental law is profoundly dysfunctional, largely because of its emphasis on rigid, ill-informed, and centralized coercion."[1]

This quotation tells me that many academics are looking at what I think of as the first part of environmental law—how it was created (the statutes) then how it was promulgated (the regulations). This excludes how it is implemented, largely because, frankly, many law professors don't know how the laws guide the practice of environmental law. Far from being "rigid," environmental law provides a forum for the creative, an opportunity to make advances in environmental improvement through agreement, a chance to find and advocate modern pollution abatement techniques and equipment. Professor Owen is a glowing exception to my academic challenges. First of all, he has real world experience. Second, he did something you don't often see in law review articles—he went out and asked practitioners what they thought and what they are doing. That is what sets his article apart.

I am with Beveridge & Diamond, a law firm that only does environmental law. They would be astonished to find out that everybody doesn't know that we negotiate all the time on every issue. As my career now bounds through both government and private practice, I now believe that settlement prowess is the positive tools of a litigator, and often the end game.

The article did a nice job of highlighting some of the major statutes that are the backbone of our practice and the launching point for effective negotiation. Of course, it makes good sense to start with the Comprehensive Environmental Response, Compensation, and Liability Act,[2] known as CERCLA or Superfund, because that is a statute designed for settlements. Yet, in implementation, the standard consent decree, which I helped develop when I was at the U.S. Department of Justice (DOJ), has some areas you can negotiate and some that you cannot in the private world—we want to negotiate everything. But in the public world, governments often have a need for uniformity and a common practice across relevant jurisdictions. That does not eliminate negotiations, but it does put a premium on experienced practitioners who know where to put their emphasis. But remember, my thesis at the outset is that we're negotiating everything.

One of the implications of the law review article that highlights the axiom "wake up . . . people are negotiating" is to understand that promulgation of the law by regulations is not the end point. Rather, the final product, often a permit, is the product of specific facts, a relevant setting, and the application of external forces and needs,

Editors' Note: John Cruden's Comment is based on an edited transcription of his remarks at the Environmental Law and Policy Annual Review conference. See 2023-2024 Environmental Law and Policy Annual Review Conference, available at https://www.eli.org/events/2024-environmental-law-and-policy-annual-review-elpar-conference.

1. Dave Owen, *The Negotiable Implementation of Environmental Law*, 75 Stan. L. Rev. 137, 149 (2023).

2. CERCLA 42 U.S.C. §§9601-9675, ELR STAT. CERCLA §§101-405.

such as environmental justice. Experienced practitioners are aware of standard clauses from other similar permits that they can bring to the table when negotiating a consent decree, as well as the experience of many other such settlements and the definitions, terms, and phrases that they have found to be reasonable and generally applicable. Certain areas, like dispute resolution, penalty language, and the specifics of contribution protection, which may differ from case to case, can be guided by language that has been used elsewhere in similar circumstances. All this I would term negotiating.

Another point I want to comment on is about "slippage"—the notion that there are lots of government people who don't have the foggiest idea what they're doing.[3] They walk in, and they get killed by people like me and my law firm. Frankly, I didn't see that. I spent a lot of my life in public life, now in private practice, and I think we have a lot of good negotiators in our law firm. A lot of them came out of the government. However, when I led the DOJ Environment Division, I was also quite proud of our litigators and negotiators. Many had years of experience and completed some of the most well-known cases. Accordingly, I would say that the academic community needs to be wary when talking about slippage, without evaluating the facts and circumstances of a particular result. If bad facts make bad law, bad facts can also make settlement for the government difficult, even with favorable statutes. And some of the bigger cases of our time all provide opportunity for someone to find that some particular part of any settlement was inadequate.

Here is my example. While leading the negotiation of the multibillion dollar resolution of the *Deepwater Horizon* oil spill, I built my negotiations on three trials, multiple court of appeals trips, and years of Agency evaluations of natural resource damages. Our ultimate settlement, well over $20 billion, was announced by Attorney General Loretta Lynch as the largest of its type ever in history, not just of environmental law but of law in general. However, before the settlement was final, we did public hearings in six different locations, including the one I led in the District of Columbia. While many of the speakers applauded the result, others thought there were ways that we could have been better, particularly in geographical areas they cared about. My only point is that coitizing "slippage" is often "in the eye of the beholder."

The article also addresses and promotes transparency, which always sounds good but does have practical implications. It is often said that negotiations cannot be done in a fishbowl, meaning that the give and take of any set of transactions requires some level of protection from public disclosure. That is particularly true in areas like DOJ, where virtually every consent decree goes out for public comment before it becomes final. Further, it is incumbent upon those in the private sector who are negotiating to come to any negotiating session prepared to discuss all terms, but placing the majority of their time on those terms most important to the client.

The problem, though, as Professor Owen wisely points out, is that there isn't really a repository of settlement documents. It would be good if there were nongovernmental organizations or others that would put in one place all the environmental impact statements or all the permits for stormwater, which are worth emulating. Many law firms have their own repository of such documents, and they are quite valuable. The one place that the article misses is that DOJ has a repository of consent decrees,[4] because all the consent decrees subject to public comment are available. And those of us in private practice access the consent decrees that are out for public comment. Those consent decrees provide valuable information on common terms, standard language, and organizational matters.

A quick word about training. At DOJ, we did negotiation training, and often did moot courts for particular settlements. When I was Assistant Attorney General, we devoted one entire day on alternative dispute resolution, bringing in leading mediators to give us advice on good techniques. However, I don't want to let professors off the hook, because there should be a place in law schools, just like there is for trial practice, for the common and extraordinary important set of skills vital to reach a negotiated outcome that all parties can accept.

The equity component of the article challenged me the most—where does equity fit into negotiations? I'm a big proponent of environmental justice. When you're negotiating a permit, you have a client and you're trying to make that work. If you're the government, you're trying to figure out how to meet water quality standards, utilize and meet Best Available Technologies,[5] and how to meet applicable law in a way that is going to survive challenges. You're not always thinking about environmental justice or the role of equity. Yet, that is vital.

Let me tell you two places where equity matters come immediately to my mind. When I first started out at DOJ, we did consent decrees that were largely based on seeking a finding of liability, a penalty (sometimes pretty massive), and injunctive relief. The process has evolved. For example, in negotiating the resolution of the Volkswagen emissions scandal, as probably most of you know, we created a mitigation fund to support states in their effort to reduce the same pollutants that Volkswagen cars illegally emitted. Mitigating the effects of pollution as part of applicable settlements is also a way that communities can

3. Dave Owen, *The Negotiable Implementation of Environmental Law*, 75 Stan. L. Rev. 137, 140 (2023):

> In one—call it the "command-and-control" view . . .—environmental law is centralized and rigid. . . . In the alternative conception—call it the "slippage" view—the rigid protections exist on paper but not in practice, and environmental-law implementation involves government regulators allowing regulated industries to get away with varying degrees of non-compliance.

4. *See, e.g.*, Environmental Protection Agency, Civil and Cleanup Enforcement and Case Settlements, https://www.epa.gov/enforcement/civil-and-cleanup-enforcement-cases-and-settlements (last updated May 23, 2024).

5. *See, e.g.*, Environmental Protection Agency, Setting Emissions Standards Based on Technology Performance, https://www.epa.gov/clean-air-act-overview/setting-emissions-standards-based-technology-performance (last updated Aug. 8. 2023).

be involved and receive some of the benefits of a particular resolution. And this is not a political statement, just a true statement, that during the Donald Trump Administration, they did away with Supplemental Environmental Projects. They are back now and are another way of involving the community.[6]

As a final point, I would like to highlight discussion of enforcement in the article. It included two or three pages on enforcement, but that is really the heart of negotiation. I would like to see a study of the notice letters that DOJ is required by policy to send before bringing an enforcement case. It would be interesting to know the success rate of these pre-filing demand letters, that almost always result in important negotiations. It would be instructive to have an academic review of what happens with those letters. And when there is a settlement, there is a notice-and-comment process, which is another way for communities to be involved, because once a comment is submitted, it has to be taken to the judge before a consent decree can be entered.

In sum, I thought this article was good. I liked it. I thought part of it was challenging, and I particularly appreciate that Professor Owen went out and gathered real-world input.

6. *See* Environmental Protection Agency, Supplemental Environmental Projects (SEPs), https://www.epa.gov/enforcement/supplemental-environmental-projects-seps (last updated May 9, 2024).

THE ART AND SCIENCE OF ENVIRONMENTAL NEGOTIATION

by Ben Grumbles

Ben Grumbles is Executive Director of the Environmental Council of the States (ECOS).

I. Shining a Light on the Art and Science of Environmental Negotiation

Black letter law is implemented in countless shades of gray, with interpretation and negotiation at virtually every step of the way. Prof. Dave Owen's article digs deep, beyond the obvious, to underscore that negotiation is not a dark art but a necessary skill that deserves more attention and training. He catalogs the importance, prevalence, and pitfalls of negotiation, providing examples of what is negotiable, when and by whom, how it happens and what results, and whether it can be good or bad on the scale of rigid "command and control" versus flimsy "slippage."[1] Professor Owen's analysis is thorough and balanced on the "centrality of negotiation" and how it impacts outcomes in the world of standards, permits, cleanup, conservation, and enforcement.[2] He also underscores the value of and need for improving the transparency, effectiveness, and equity of negotiation, particularly in state agencies.[3]

States are the nation's implementation stations for environmental law. The 50 states, the District of Columbia, and the territories carry out the majority of U.S. federal environmental programs, typically ranging from 70% to 95%, depending on how you count delegated and partially delegated programs.[4] Customizing and implementing "national standards with neighborhood solutions" is what state and local environmental agencies do, and negotiation is at the heart of it.

Editors' Note: Ben Grumbles' Comment is based on his remarks at the Environmental Law and Policy Annual Review conference. See 2023-2024 Environmental Law and Policy Annual Review Conference, available at https://www.eli.org/events/2024-environmental-law-and-policy-annual-review-elpar-conference.

1. Dave Owen, *The Negotiable Implementation of Environmental Law*, 75 Stan. L. Rev. 137, 150-51 (2023).
2. *Id.* at 141.
3. *Id.* at 143-44.
4. ECOS, *National Environmental Protection: The Role of States* [ECOS General Hill Leave Behind], https://www.ecos.org/wp-content/uploads/2024/04/ECOS-General-Hill-Leave-behind-to-share-16-Jan-2024.pdf (last updated Jan. 16, 2024).

II. The Centrality of Negotiation

Professor Owen identifies examples under the National Environmental Policy Act (NEPA) and environmental impact analysis; Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Endangered Species Act (ESA); Clean Air Act (CAA); Clean Water Act (CWA); and enforcement programs where negotiation is used to flesh out the standards and requirements or to fill in blanks and customize solutions.[5] This happens at both federal and state levels, as well as at points between and below (such as regional and local). Particularly useful are the specific examples where interpretation, customization, and creative problem solving come into play, such as: habitat conservation plans under the ESA, the CAA New Source Review, sectorwide greenhouse gas reductions, moving beyond technology-based controls under the CWA to water quality-based effluent limits, narrative criteria, mixing zones, and total maximum daily load calculations. The CWA's always controversial §404 program revolves around key negotiation points such as "practical alternatives" and compensatory mitigation and related questions of onsite vs. offsite, in-kind vs. out-of-kind, and fees in lieu of mitigation measures.[6]

III. Command & Control, Flexibility & Slippage

Professor Owen is right to point out that negotiation between the regulator and the regulated often leads to better, more creative solutions. Complex challenges involving multiple parties, with downstream or downwind communities, require innovative and customized solutions that rely on more than just federal commands or controls spelled out in regulations.

One of the best examples in the clean water arena, from decades ago, is the 1994 Combined Sewer Overflow (CSO) Policy, an informal regulatory negotiation that helped the

5. 42 U.S.C. §§4321-4370h, ELR STAT. NEPA §§2-209; 42 U.S.C. §§9601-9675, ELR STAT. CERCLA §§101-405; 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18; 42 U.S.C. §§7401-7671q, ELR STAT. CAA §§101-618; 33 U.S.C. §§1251-1387, ELR STAT. FWPCA §§101-607.
6. 33 U.S.C. §1344, ELR STAT. FWPCA §404.

U.S. Environmental Protection Agency (EPA), states, communities, and environmental organizations make progress in preventing and controlling releases that weren't explicitly or adequately addressed in the statute or implementing regulations. The resulting framework—specifying minimum controls and long-term control plan provisions—included a good balance of flexibility and accountability and was so widely used that the U.S. Congress eventually embraced it by explicitly requiring in 2000 that every permit, order, or consent decree involving CSOs under the CWA "shall conform" to the 1994 CSO control policy.[7]

One of the best examples today of the need for urgent and artful negotiation is "permit streamlining": getting billions of dollars for clean energy projects and transmission lines approved in months or years rather than decades. Finding the right mix of collaboration, efficiency, and equity among multiple parties, whether in the legislative, regulatory or nonregulatory context requires skillful negotiation.

IV. On Transparency, Effectiveness, and Equity

Professor Owen is right to suggest improvements while recognizing each has certain legal, practical, and financial constraints. Greater transparency in government agencies isn't always so simple; confidentiality agreements, disruptive political forces, and the basic desire at times not to negotiate through the media all lead to a certain amount of "secrecy" when negotiating. Of course, more frequently providing after-the-fact analysis of what was negotiated and why to the public should be encouraged. It leads to more informed and impactful results in future negotiations, too.

Machine learning, artificial intelligence, and other forms of information technology can help lead to more effective negotiation. In the end, though, machines are not the negotiators, at least not yet. It's people, sometimes very inexperienced or unskilled, who negotiate.

On equity, greater inclusion and engagement with underserved communities will help. Knowledge is power, but access to knowledge is not a given. Professor Owen understands that and suggests various ways to increase community access to agency decisionmaking such as increased agency funding for technical assistance and the use of outside foundations and philanthropic organizations. I agree and would supplement with more detail on three action areas:

1. **Classes and clinics on negotiation**. We need more of these. Law schools and agencies should continue to focus first on the basics of environmental programs from black letter law to foundations of standards, permits, enforcement, and finance. However, negotiation skills need more attention and support to bring the basics to life and help future and current practitioners deliver better environmental results. For example: improving timing and detail of negotiated outcomes, much greater investment in training and use of trained facilitators, and increased assistance for better access to information and a more informed process.
2. **Agency "centers" for negotiation and dispute resolution**. State agencies frequently don't have the resources or desire to add new offices, but they do often look at how to realign for better results. A center of excellence for negotiating skills and training within any agency for the benefit of all of its media offices (such as air, water, land, and chemicals) and its enforcement office makes sense. EPA established an office for alternative dispute resolution within its Office of General Counsel many years ago and a separate enforcement and compliance assistance office serving all the other offices. EPA offices have moved around and changed names over the years, but the needs for alternative dispute resolution and effective negotiation skills continue to play a central role.
3. **Funding and technical assistance for increased community engagement and access to power**. This has been one of the lessons learned from the re-authorization of Superfund in 1986 where Congress included a relatively new concept at the time: $50,000 technical assistance grants to communities to more effectively participate in design and selection of cleanup remedies. It is a model that has been applied to other programs over the years and led to more meaningful engagement by communities and their leaders.

7. 33 U.S.C. §1342(q)(1); ELR Stat. FWPCA §402.

PROTECTING ALL PEOPLE FROM POLLUTION IN A PLURALISTIC SOCIETY

by Vickie Patton

Vickie Patton is General Counsel for the Environmental Defense Fund.

Thank you to Prof. Dave Owen for his meditation on environmental law in a pluralistic society. It is about some core values. It is about some dialogue, and it is far more, right? Because one of the foundations that we depend upon to have functioning environmental law is to have some reliable, predictable statements that are very normative and that establish a framework that we can all depend upon and work within—and that is reflective of our values, our commitment as a society to clean air, clean water, and to equity and justice.

We need that stability, that framework, and that way for it to be expressed. And within that, there's been an enormous amount of innovation. You can call it negotiation; you can call it discussion; you can call it dialogue. What it really comes down to is people deciding to show up as problem solvers. People deciding to show up within that framework and a commitment to work together to listen to each other, to do what the Vanderbilt students are doing here—that is creating the space for dialogue on difficult issues. We need more and more of that duality in its most broad, expansive form—it has been the success of environmental law in American society.

We have huge challenges in trying to tackle the climate crisis and trying to advance equity in a way that is meaningful and sustained, so we need more tools, we need more people in the conversation, more innovation, more ways to try to figure this out together. Professor Owen has given us a really important framework to think about and build from. It is changing right now before our very eyes. We are seeing a sweeping, changing landscape in environmental law. For example, there are historic investments unleashed by the Inflation Reduction Act that fundamentally change the whole conversation and the possibilities of where environmental law can take us.

We are seeing new manufacturing being built across our country as part of the transition to clean energy. You're seeing it in Tennessee, and Kentucky, and Texas, and Ohio, and Michigan, and Nevada, and Arizona, and much more—thousands and thousands and thousands of jobs, and billions and billions and billions of dollars. As lawyers, how we show up in those conversations really matters. Are we doing that in a way that creates benefits for people's lives or runs roughshod over people's communities? This is hugely important. We can't get to net zero unless we are showing up in a way that is creating benefits for people's lives.

You are also seeing right now historic investments in rural energy. We have to bring everyone along. No communities left behind as part of these big, big grants. Yesterday, the U.S. Environmental Protection Agency announced a new massive grant to direct resources and unlock clean energy and opportunity in communities across our country.[1] This is how environmental law is changing within this framework that Professor Owen has laid out. We have new technologies from sensors to satellites that enable all sorts of possibilities in terms of accountability and progress and change in the conversation. As law students, as legal practitioners, it's an opportunity to show up as a problem solver, to show up and be innovative and part of the solution. You can have both. You can do that in a way that is committed to the foundations of environmental law, and you can do that in a way that is listening and learning from others, meeting them where they are, and trying to make important progress.

I want to touch on some of the key concerns that the article raised about equity and transparency and share a couple of examples that have emerged in the last few months that people are inventing to try to address this.

The Sabin Center for Climate Change Law has just launched a terrific platform where they are trying to col-

Editors' Note: Vickie Patton's Comment is based on an edited transcription of her remarks at the Environmental Law and Policy Annual Review conference. See 2023-2024 Environmental Law and Policy Annual Review Conference, available at https://www.eli.org/events/2024-environmental-law-and-policy-annual-review-elpar-conference.

1. U.S. Environmental Protection Agency, Biden-Harris Administration Announces $20 Billion in Grants to Mobilize Private Capital and Deliver Clean Energy and Climate Solutions to Communities Across America, https://www.epa.gov/newsreleases/biden-harris-administration-announces-20-billion-grants-mobilize-private-capital-and-0 (Apr. 4, 2024).

lect all of the community benefit agreements.[2] One of the key issues that Professor Owen highlighted is that communities need more information to understand and answer questions such as: What if someone shows up in my neighborhood with the big storage project?; What does that look like?; and How do I protect myself? You can go on the Sabin Center website and check out what other communities have done to assure that they benefit from a large-scale storage project showing up in their neighborhood. What did the developer provide in terms of emergency preparedness? What did the developer provide in terms of compensation on property values? What did the developer provide in terms of sustained engagement with the community? We need more of this—and it is one way people are inventing to provide greater transparency and greater equity.

I have some colleagues at Environmental Defense Fund who partnered with Blacks in Green[3] to create a whole new initiative called Community Voices in Energy,[4] and I invite you to check it out. One of the areas that the article does not spend as much time on that is really, really important is what happens in our public utility commissions—a place where communities have not been part of the dialogue. Community Voices in Energy is all about knocking down those barriers and trying to bring community voices into the conversation. This is where in environmental law and investments the rubber meets the road: Will the capital have benefits for people's lives or will it not have benefits for people's lives?

In Illinois a few months ago, the four largest gas utilities showed up before the Illinois Commerce Commission and said, "We want $872 million dollars of investments in new gas infrastructure." Community Voices in Energy came into that proceeding and shared their perspective that they would like the investment to be clean. They want to make sure that it doesn't saddle communities with higher costs. They want to be part of the conversation, and they provided expert testimony. How do you knock down some of those barriers to ensure greater transparency and equity? Don't let there be any limits on your imagination.

This is just one example of something transformative that happened within this architecture, this duality of a framework of rigorous environmental law anchored in core values and inventiveness.

Furthermore, California reached an agreement with a number of major automobile manufacturers in the last administration when there was an unprecedented attack on California's long-standing authority to establish emissions standards for motor vehicles. This is hugely important for California to be able to create healthier lives for 40 million people, hugely important for California to be able to attack and address the climate crisis, hugely important for the innovation happening in California on all these fronts. The state negotiated a voluntary and enforceable and accountable agreement with a number of major auto manufacturers that said, notwithstanding, whatever happens in all of this uncertainty that is being created, we have a path forward. We're committed to progress, to climate progress, to health protections, we are going to move forward together. That's people inventing and creating within the core framework of environmental law.

Don't let there be any limitations on what you think is possible. Anything is possible. A couple of weeks ago, Stellantis Chrysler said, "We want in, we want to be part of that agreement." And they further said, "We want to be part of that through 2030 because we're committed to a new initiative" at Stellantis Chrysler called "Dare Forward 2030: A Bold Strategic Plan"[5]—and so off they go committing to move forward in a big, bold way.

There are some dark clouds on the horizon—the darkest is the hostility that the U.S. Supreme Court has toward environmental law. We have this framework that we have depended upon in American society for decades that has been predictable and stable. Within that, people have invented and solved problems, and thank you to Professor Owen for knocking down the myth that we don't. We do—people show up to solve problems and to improve lives. The Supreme Court heard oral arguments in a major set of cases in January, and in her presentation to the Supreme Court, Solicitor General Elizabeth Prelogar said, if the Court headed down this pathway of changing some of the core doctrines of administrative law, it would be a shock to our legal system. She is a very understated person. She called it a potential shock to our legal system. And then Justice Amy Coney Barrett said during the course of that oral argument, if the court heads in this direction, it will unleash a flood of litigation.

We have to continue to work to help protect the core framework and foundations of environmental law to find ways to solve problems and to recognize that there are serious threats to the very foundations that enormous and important progress have depended upon.

2. Sabin Center for Climate Change Law, Community Benefits Agreements Database, https://climate.law.columbia.edu/content/community-benefits-agreements-database (accessed June 14, 2024).
3. Blacks in Green, https://www.blacksingreen.org/ (accessed June 14, 2024).
4. Community Voices in Energy, https://communityvoicesinenergy.org/ (accessed June 14, 2024).
5. Stellantis, Dare Forward 2030: A Bold Strategic Plan, https://www.stellantis.com/en/company/dare-forward-2030 (2024).

DESIGNING EFFECTIVE BORDER CARBON ADJUSTMENT MECHANISMS: ALIGNING THE GLOBAL TRADE AND CLIMATE CHANGE REGIMES

by Goran Dominioni and Daniel C. Esty

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I. Introduction

Under the 2015 Paris Agreement on climate change, countries determine their own action plans and define their own nationally determined contributions (NDCs) to the global response to climate change.[1] Jurisdictions that commit to stringent greenhouse gas (GHG) mitigation policies risk reducing the competitiveness of domestic industries. Relatedly, these jurisdictions also risk high-emissions production processes moving to low-standard nations, resulting in *carbon leakage*: an increase in GHG emissions elsewhere that negates the stringent requirements of the high-standard nations.

Policymakers are implementing border carbon adjustment (BCA) mechanisms on imports to prevent carbon leakage. BCA is a special tariff that targets the GHG emissions associated with imported products. The price applied to the embedded GHG emissions in these products would be a function of the difference between the climate change policy stringency in the two jurisdictions. In 2023, the European Union (EU) began the implementation of the Carbon Border Adjustment Mechanism (CBAM). Under CBAM, the relative stringency of the climate policies implemented in the EU and abroad is gauged by reference to the price of allowances in the EU emissions trading system and the level of carbon taxes and emissions trading system allowance prices in the non-EU countries.[2] In the meanwhile, several similar proposals have been put forward in the United States including a proposal for a BCA instrument that would instead compare a broader set of regulatory requirements that discourage GHG emissions[3] and legislation that would gauge the relative GHG emissions intensity of imported goods, which would of course reflect the full spectrum of emissions control strategies.[4]

We propose a taxonomy of approaches to comparing climate policies implemented in the importing and the exporting countries and analyze their relative strengths: (1) no crediting for any GHG emissions controls (*no crediting BCA mechanism*); (2) comparing only *explicit* carbon prices (costs that can be traced to carbon taxes and GHG emissions trading systems) (*explicit BCA mechanism*); (3) comparing *effective* carbon prices (the sum of explicit

Editors' Note: This Article is adapted from Goran Dominioni & Daniel C. Esty, *Designing Effective Border Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, 65 Ariz. L. Rev. 1 (2023), *and used with permission. It was discussed with new insights on a public webinar hosted by the Environmental Law Institute; a recording of the webinar may be viewed at this link: https://www.eli.org/events/designing-effective-border-carbon-adjustment-mechanisms-aligning-global-trade-and-climate.*

1. Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 13, 2015, in Rep. of the Conference of the Parties on the Twenty-First Session, U.N. Doc. FCCC/CP/2015/10/Add.1, Article 4(2) (2016) [hereinafter Paris Agreement].
2. Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism (CBAM), OJ 2023 L 130/52, Art. 3.29.
3. FAIR Transition and Competition Act of 2021, H.R. 4534, 117th Cong. §9904 (2021) [hereinafter FAIR Transition and Competition Act]; *see* Janet L. Yellen, U.S. Secretary of the Treasury, Remarks at the G20 Finance Ministers and Central Bank Governors Meeting's High-Level Symposium on International Tax (July 9, 2021) [hereinafter Yellen Remarks], https://home.treasury.gov/news/press-releases/jy0266 [https://perma.cc/G278-YKYS].
4. PROVE IT Act of 2023, S.1863, 118th Congress (2023-2024).

carbon prices and implicitly applied carbon prices) (*effective BCA mechanism*)[5]; and (4) comparing an even broader set of climate change policy actions including those that do not have any implicit or explicit price effect (*wide-open BCA mechanism*).

Effective BCA mechanisms can yield better environmental outcomes, gain broader political support, and are more likely to be compatible with World Trade Organization (WTO) law than explicit BCA mechanisms. Although effective BCA mechanisms pose additional administrative challenges, many jurisdictions have trade policy experience that they could deploy. The other two approaches—*no crediting BCA* mechanism and *wide-open BCA mechanism*—are instead impractical from a political, legal, or administrative point of view.

Additionally, we propose that BCA mechanisms designed to allow for greater ambition in climate action should be seen as acts of "multilateral unilateralism [and] . . . should be subject to lighter WTO scrutiny."[6] To ensure the policy frameworks that nations have developed in furtherance of their climate commitments are WTO-consistent, we propose creating a review mechanism under the auspices of the WTO (and perhaps the United Nations Framework Convention on Climate Change (UNFCCC)) to assess whether the policy instruments used serve to advance implementation of the 2015 Paris Agreement and do not impose disproportionate burdens on trade compared to the environmental gains achieved. A finding of alignment with the Paris goals and proportionality would bar further WTO scrutiny of the policy.

II. Border Carbon Adjustment Mechanisms Explained

BCA mechanisms aim to prevent carbon leakage by imposing a tariff on imports from countries with less ambitious climate policies than the importing country.[7] The tariff level is established based on the difference between the stringency of policies in the importing and exporting countries.[8]

Carbon leakage can be the consequence of three different effects.[9] First, mitigation policies can increase domestic production costs, reducing the competitiveness of domestic producers who lose sales to imports from low-standard countries. This can result in a net increase of GHG emissions as production shifts to relatively more-polluting jurisdictions.[10] Second, implementing strict GHG control policies may reduce the profitability of domestic carbon-intensive industries, leading to systematically lower investment in these enterprises over time to the benefit of industries in low-standard countries.[11] Third, mitigation policies that reduce the consumption of fossil fuels in one jurisdiction may decrease fossil fuel prices, thereby stimulating higher fossil fuel consumption in trading partners.[12]

A well-designed BCA mechanism can "level the playing field" between domestic and foreign producers for products consumed domestically.[13] If imported goods are cheaper than domestically produced ones due to lower GHG constraints in the exporting country, a BCA mechanism will increase the price of imported goods as if these products were subject to the GHG controls that apply to domestic production.

BCA strategies can also induce trade partners to implement more ambitious climate policies.[14] Rather than having their exporters pay duties to importing nations, low-standard exporting countries have the incentive to implement carbon charges domestically to reduce the burden of the BCA mechanism.

III. Selecting Options to Credit for Policies Abroad

One approach would be to offer no border adjustment credit for the exporting nation's climate policies. However, giving BCA credit for a range of climate policies abroad is more likely to be compatible with the Global Agreement on Tariffs and Trade (GATT) and is more likely to face less resistance from trade partners.

Second, *explicit* BCA mechanisms, such as the EU CBAM regulation, only credit the exporting nation's climate policies that explicitly put a price on GHG emissions—carbon taxes and emissions trading systems.[15] In this context, the charge would equal the difference between explicit carbon price levels in the two jurisdictions.

A third approach, an *effective* BCA mechanism, would credit a broader set of climate change policy instruments that impose costs on GHGs. BCA credit would extend to instruments that increase the marginal cost of emitting GHGs even though they do not directly target the carbon content of fossil fuels or the GHGs embedded in products (*implicit carbon pricing*), such as energy taxes. The border adjustment would occur based on the levels of effective carbon prices (the sum of explicit and implicit carbon prices)[16] in the importing and exporting jurisdictions.

Fourth is the *wide-open* approach whereby the border tariff adjustment would credit all climate policies that

5. *See* Goran Dominioni, *Pricing Carbon Effectively: A Pathway for Higher Climate Change Ambition*, 22 Climate Pol'y 897 (2022).
6. Daniel C. Esty, Greening the GATT: Trade, Environment, and the Future 139-41 (1994) (explaining the concept of multilateral unilateralism).
7. [7]Michael A. Mehling et al., *Designing Border Carbon Adjustments for Enhanced Climate Action*, 113 Am. J. Int'l L. 433, 442 (2019).
8. *See* Aaron Cosbey et al., *Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs From the Literature*, 13 Rev. Env't Econ. & Pol'y 3, 16 (2019).
9. *Id.* at 5.
10. *Id.*
11. *Id.*
12. *Id.*
13. Andrei Marcu et al., *Border Carbon Adjustments in the EU: Issues and Options*, Euro. Roundtable on Climate Change & Sustainable Transition 3, 7 (2020), https://ercst.org/border-carbon-adjustments-in-the-eu-issues-and-options [https://perma.cc/TD2C-V4UJ].
14. *See* Joseph E. Stiglitz, *A New Agenda for Global Warming*, *in* The Economists' Voice: Top Economists Take on Today's Problems 22 (2011).
15. EU CBAM Regulation, *supra* note 2.
16. *See* Dominioni, *supra* note 5, at 898.

reduce GHG emissions.[17] This approach is problematic because it requires estimating the GHG price equivalence of diverse climate change policies, some of which may be challenging to quantify.[18]

The remainder of the Article focuses on two design options. We put aside the *no-credit* option as likely too divisive and disruptive to efforts to get countries to work together to reduce GHG emissions—and inconsistent with the long-time trade system principles that diversity in policy choices must be respected and that form should not trump substance. We also drop the *wide-open* BCA approach as administratively difficult and politically problematic for the reasons noted above. Our analysis thus seeks to evaluate the relative merits of *explicit* BCA mechanisms (which establish a border tariff based entirely on comparing explicit GHG prices in the importing and exporting countries) versus an *effective* BCA mechanism (which compares explicit and implicit GHG prices in the two jurisdictions). We compare these two approaches regarding their climate and other environmental benefits, political and administrative viability, and compliance with the GATT.

IV. Delivering Climate and Other Environmental Benefits

One could argue that explicit BCA mechanisms will yield better climate outcomes than effective BCA mechanisms because—through the crediting mechanism—the former incentivizes the adoption of carbon taxes and emissions trading schemes in trading partner countries. These instruments sharply focus on GHG mitigation.[19] Instead, an effective BCA mechanism incentivizes exporting countries to implement a broader set of policies, some of which may only indirectly increase the price of burning fossil fuels.

While explicit carbon prices provide sharper incentives to mitigate emissions, it does not follow that explicit BCA mechanisms will deliver better GHG mitigation. This result emerges for two main reasons. First, effective BCA mechanisms leave exporting countries wider latitude to determine how best to address climate change in their own political context. This wider latitude is likely to result in greater climate—and more broadly environmental—action in exporting jurisdictions. Second, effective BCA mechanisms increase the transparency of climate change actions undertaken in different jurisdictions by allowing countries to track net changes in the stringency of climate policies that may increase trust and spur *co-opetition* (a mix of cooperation and competition) between countries.[20]

A. Incentivizing Climate Change Policy Domestically and Abroad

In many countries, implicitly pricing GHG may be the only viable climate change policy option. Thus, effective BCA mechanisms might lead to greater overall GHG reductions than explicit BCA mechanisms.[21] While explicit BCA mechanisms may incentivize the use of explicit carbon pricing, the flexibility of effective carbon prices allows for better alignment with national policy priorities and political realities.

Financial, technological, and administrative capacity constraints may also hinder implementing explicit carbon pricing in many jurisdictions.[22] Policies that increase implicit carbon prices tend to pose fewer capacity constraints than explicit carbon pricing mechanisms.[23] Indeed, implementing implicit carbon prices is often a more feasible option than explicit carbon pricing schemes, especially for low-capacity governments.[24] Effective BCA mechanisms may, therefore, lead to more stringent climate change action in countries that struggle to implement explicit carbon prices due to financial, technological, or administrative capacity constraints.

B. Creating Transparency, Trust, and Co-Opetition

The Paris Agreement's bottom-up approach to global climate policy can only function if trust exists among member countries. Effective BCA mechanisms are well-suited to create trust among countries because they reduce the risk of deceitful environmental tax reforms that seek to raise apparent GHG pricing but offer hidden rebates.

Effective BCAs can be a tool to incentivize the monitoring and public reporting of accurate data on the GHG pricing policies implemented in exporting countries.[25] In particular, an effective BCA mechanism can stimulate the exporting jurisdiction to establish, through monitoring and reporting, a validated estimate of their domestic implicit carbon price. This additional transparency on effective carbon prices in various countries is itself valuable. However, such transparency can also contribute to

17. Yellen Remarks, *supra* note 3.
18. Marcu et al., *supra* note 13, at 37-38; Cosbey et al., *supra* note 8, at 16.
19. Organisation for Economic Co-operation and Development, Effective Carbon Rates: Pricing CO_2 through Taxes and Emissions Trading Systems 22-25 (2018) [hereinafter OECD], https://www.oecd.org/tax/effective-carbon-rates-9789264260115-en.htm [https://perma.cc/FT72-44GP].
20. *See* Daniel C. Esty & Damien Geradin, *Regulatory Co-Opetition*, 3 J. Int'l Econ. L. 235 (2000).
21. Barry G. Rabe & Christopher P. Borick, *Carbon Taxation and Policy Labeling: Experience From American States and Canadian Provinces*, 29 Rev. Pol'y Res. 358, 370-72 (2012); Goran Dominioni, *Motivated Reasoning and Implicit Carbon Prices: Overcoming Public Opposition to Carbon Taxes and Emissions Trading Schemes*, 13 Eur. J. Risk Regul. 158, 169-70 (2022).
22. A notable example of the challenges faced in implementing emission allowance trading schemes is the Kazakhstan Emissions Trading System (ETS). The Kazakhstan ETS, launched in 2013, was temporarily suspended in 2016-2017 to address operational challenges and amend rules on the allocation of emission allowances. *See* Kazakhstan Emissions Trading System, International Carbon Action Partnership, https://icapcarbonaction.com/en/ets/kazakhstan-emissions-trading-system [https://perma.cc/85KN-UU9E] (last visited Dec. 30, 2022).
23. Paasha Mahdavi, Cesar B. Martinez-Alvarez & Michael L. Ross, *Why Do Governments Tax or Subsidize Fossil Fuels?*, Ctr. For Glob. Dev. (Aug. 2020), https://www.jstor.org/stable/pdf/resrep29812.pdf?acceptTC=true&coverpage=false&addFooter=false [https://perma.cc/MRM5-MRFA].
24. Dominioni, *supra* note 5, at 901.
25. *Id.*

increased trust and co-opetition among countries on climate change action undertaken abroad.

For effective carbon pricing approaches to increase trust and maintain legitimacy, estimates must be based on well-established calculation methodologies, publicly available and verifiable data, and a process that is transparent, fair, and open to review and challenge. Countries have adopted third-party verification and peer review to pursue their efforts to phase out inefficient fossil fuel subsidies and could replicate them to develop credible estimates of effective carbon prices.[26]

V. Addressing Political Constraints

Three dimensions of political viability are particularly relevant: (1) avoiding WTO disputes and retaliation from trading partners, (2) reducing the risk of disrupting existing international cooperation on climate change, and (3) supporting new sub-global cooperation on climate change action.

Implementing an effective BCA mechanism is less likely to create an intense backlash from trading partners than crediting only explicit carbon prices. The more flexible approach of crediting for effective carbon prices aligns more closely with the spirit of the 2015 Paris Climate Accord and its emphasis on NDCs to control emissions. At its core, an effective BCA mechanism respects other countries' unique circumstances and sovereignty to a greater degree and better acknowledges the right of each nation to address climate change in light of its own specific circumstances.

This flexibility might be particularly useful in reducing opposition from the United States, a key player in international climate change negotiations. The United States may be more amenable to BCA mechanisms implemented abroad that incentivize the adoption of higher fuel taxes than it would be to mechanisms exclusively tied to explicit carbon prices.

There has been increasing international attention toward forming a climate club, an agreement among a group of countries with high ambitions for curbing climate change who seek to avoid carbon leakage and competitive disadvantage.[27] BCA mechanisms can help prevent carbon leakage, and the threat of carbon tariffs may incentivize other countries to join the climate club.[28] Effective BCA mechanisms may provide the flexibility needed to ensure that club membership can be open to enough countries to achieve viability.[29] The United States' scale of economic output, GHG production, and diplomatic leadership make its participation crucial to the success of any climate club.[30]

VI. Addressing Administrative Complexities

One reason for adopting explicit rather than effective BCA mechanisms is administrative simplicity. The administrative burden of effective BCA mechanisms may, however, be overstated.[31]

Implementing BCA mechanisms of any sort will require a significant amount of data and processing capacity.[32] Importing countries require data on the emissions released in producing and transporting imported goods and those released in producing goods used as input. Furthermore, crediting for climate change policies implemented in the exporting jurisdiction requires data on the stringency of these policies.

Many jurisdictions have substantial experience analyzing policies implemented in countries from which they import products and calculating how these policies affect production costs. Indeed, governments of various countries frequently engage in subsidies and anti-dumping investigations and already possess significant capacity to analyze and compare policies implemented in exporting countries. This internal capacity, if harnessed, could gradually overcome difficulties in imposing effective BCA mechanisms.

In addition, international institutions[33] and private-sector actors[34] can produce standard methodologies for calculating effective carbon prices. These methodologies could serve as a basis for further refinements.

Once adequate estimates of effective carbon prices become available from international institutions, they could serve as default values to estimate the level of adjustment per ton of GHGs embedded in imported products. Organizations such as the International Trade Centre, Organisation for Economic Co-operation and Development, International Monetary Fund, and World Bank could help countries that lack adequate capacity to produce and verify estimates of effective carbon prices.

Certain policies that implicitly price carbon, such as negative credits for fossil fuel subsidies, might be more challenging to credit than others. The first countries to implement effective BCA mechanisms may initially only credit implicit carbon pricing policies that are easier to account for and expand crediting to more policies as they overcome administrative barriers.

VII. Compliance With GATT Rules

Scholarship and policy debates commonly assert that BCA mechanisms are unilateral measures that can restrict

26. *OECD—IEA Analysis of Fossil Fuels Support*, Org. for Econ. Coop. & Dev., https://www.oecd.org/fossil-fuels/publication/ [https://perma.cc/WHE4-NLMK].
27. *See* Robert Faulkner et al., *Climate Clubs: Politically Feasible and Desirable?*, 22 Climate Pol'y 480 (2021).
28. William Nordhaus, *Climate Clubs: Overcoming Free Riding in International Climate Policy*, 105 Am. Econ. Rev. 1339, 1370 (2015).
29. Dominioni, *supra* note 5.
30. Michael Jakob et al., *How Trade Policy Can Support the Climate Agenda*, 375 Sci. 1401, 1401-03 (2022); Dominioni, *supra* note 5.
31. *See* Marcu et al., *supra* note 13, at 37-38.
32. Sam Kortum & David Weisbach, *Border Adjustments for Carbon Emissions: Basic Concepts and Designs* 22 (Res. for Future, Discussion Paper 2016), https://media.rff.org/documents/RFF-DP-16-09.pdf [https://perma.cc/9RY7-KM65].
33. OECD, *supra* note 19.
34. Vivid Econ. & Overseas Dev. Inst., Estimating Effective Carbon Prices: Accounting for Fossil Fuel Subsidies (2019), http://www.vivideconomics.com/wp-content/uploads/2019/08/Vivid-Economics-ODI-Estimating-Effective-Carbon-Prices.pdf [http://perma.cc/4V2L-RPTB].

trade and, therefore, need to comply with core provisions on nondiscrimination in the GATT. We believe that adequately designed BCA mechanisms should be seen as an example of "multilateral unilateralism" that should be understood to be tacitly condoned by exporting countries that have ratified the Paris Agreement.[35] Since all WTO members are part of the Paris Agreement,[36] BCA mechanisms adequately designed to allow for Paris-aligned ambition in climate policy have arguably been (tacitly) approved by WTO members.

Ideally, an ex-ante review mechanism could determine whether a BCA mechanism aligns with the Paris Agreement before implementation. This mechanism could operate under the auspices of the WTO—perhaps in conjunction with the UNFCCC—and a multilateral body could assess whether actions undertaken by the relevant jurisdictions qualify as "sufficiently multilateral" to bar scrutiny under the GATT. The implementation of such an ex-ante review mechanism could be part of a broader remaking of the trading system to align it with the international climate change regime and the sustainability imperative, such as the WTO reform agenda recently proposed in the Villars Framework[37] advanced by the Remaking Trade for a Sustainable Future Project.[38]

In the absence of such review mechanisms or tacit approval, BCA mechanisms will need to comply with the fundamental nondiscrimination obligations of the GATT: Article I[39] and Article III.[40] Alternatively, they would need to be justifiable under Article XX of the GATT.[41]

Below, we argue that effective BCA mechanisms are more likely to comply with Article I and Article III, §2 of the GATT and are more likely to be justified under Article XX of the GATT.

A. *Article III, §2 GATT*

Under Article III, §2(a), countries may impose a charge on an imported product if that charge is equivalent to an internal tax the country already imposes on a "like" domestic product. Article III, §2's national treatment obligation also prohibits importing countries from applying internal charges or taxes in excess of those that apply to domestic "like" products.

The relevant question becomes whether the BCA mechanism imposes a higher charge on imported products than is imposed on like domestic products. A BCA mechanism's compatibility with Article III, §2 relies on the finding that two otherwise "like" products are, in fact, not "like" if their production resulted in different degrees of GHG emissions.

Factors relevant to whether two products are "like" include whether consumers see them as such, as well as the products' use, "properties, nature and quality,"[42] and competitive relationship. A few cases suggest that products with different levels of embedded GHG emissions may not be "like" products.[43]

Effective BCA mechanisms are less likely to be considered de facto discriminatory because they account for a broader set of carbon constraints imposed on imported and domestic products. Under effective BCA mechanisms, producers from virtually any country would see the price they pay domestically recognized in the BCA mechanism.

While there is uncertainty about whether a BCA mechanism that results in a higher carbon price applied on imported products would be compatible with this provision,[44] some case law suggests that the two products would not be considered "like." If we follow this interpretation, BCA mechanisms that impose charges proportional to the GHG emissions embedded in products may be deemed as complying with the national treatment clause.

B. *GATT Article I Comparison of Effective and Explicit Carbon Prices*

Article I establishes that the importing country must grant equal treatment to "like" imported products regardless of the country of provenance. Likeness is determined by various factors, especially whether the products are in a competitive relationship.[45] A BCA mechanism might be incompatible with Article I if like products are subject to different tariffs due to differences in embedded emissions. However, as discussed above, there are good reasons to believe that two products with different levels of embedded emissions are not "like" one another.

Another key concern on the compatibility of BCA mechanisms with Article I is that tying duties on otherwise-"like" imported products to climate policies could constitute discrimination between exporting countries.

35. Esty, *supra* note 6, at 139-40.
36. The only exceptions are Taiwan and China's Special Administrative Regions of Hong Kong and Macau.
37. Joel P. Trachtman et al., *Villars Framework for a Sustainable Global Trade System* (2023), https://remakingtradeproject.org/villars-framework.
38. *See Remaking Trade for a Sustainable Future Project*, Remaking Trade for a Sustainable Future, https://remakingtradeproject.org.
39. General Agreement on Tariffs and Trade 1994, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S 194 [hereinafter GATT]; General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S 187 [hereinafter Marrakesh Agreement].
40. GATT *supra* note 39, at Art. III.
41. *Id.*
42. Working Party Report, *Border Tax Adjustments* (1970), BIDS 18S/97, ¶ 18.
43. *See, e.g.*, Panel Report, Complaint by Canada, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products* (2000) WTO Doc. WT/DS135/R, ¶ 8.126; Appellate Body Report, Canada—*Measures Relating to the Feed-In Tariff Program*, ¶ 5.63 WT/DS412/AB/R WT/DS426/AB/R (adopted May 6, 2013), https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds426_e.htm [https://perma.cc/R8UV-JPV5].
44. *See*, for instance, Howard Chang, Import Taxes Based on Climate Policies and International Trade Law, U of Penn, Inst for Law & Econ Research Paper No. 24-03, (unpublished manuscript), *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4734612.
45. Joachim Englisch & Tatiana Falco, EU Carbon Border Adjustments for Imported Products and WTO Law (June 2021) (unpublished manuscript), *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3863038 [https://perma.cc/BJ4B-U367].

This key concern is a position commonly held in scholarly research,[46] grey literature,[47] and existing case law.[48]

An effective BCA mechanism is less likely to be seen as de facto discriminatory than an explicit BCA mechanism because the former accounts for a broader set of carbon constraints—allowing most countries to see their policies credited in the BCA mechanism.

Overall, Sections VII, §§A and B show that if a BCA mechanism is scrutinized under the GATT, it is more likely to comply with Article I and Article III, §2 if it credits for effective carbon pricing. It is uncertain whether any BCA mechanism could be compatible with Article I.

Article XX (b) and (g) provide two relevant provisions that may justify BCA mechanisms despite conflict with the non-discrimination provisions.

C. GATT Article XX Exception (b)

Exception (b) allows for measures that are "necessary to protect human, animal or plant life or health."[49] There is overwhelming evidence of the severe risk that climate change poses to human, animal, and plant life and health.[50] Thus, Exception (b) is likely to apply to BCA mechanisms.

To meet the requirements of Exception (b), the measure must also make a "material contribution" to protecting human, animal, or plant life or health, which requires a "genuine relationship of ends and means between the objective pursued and the measure at issue."[51] Because of their potential GHG mitigation outcomes, effective BCA mechanisms are likely to be seen as making a material contribution.

Complying with Exception (b) requires that no reasonably available and less trade-restrictive alternatives exist.[52] Effective BCA mechanisms are likely to increase the administrative and compliance costs of the measure compared to explicit mechanisms, particularly in countries with lower levels of capacity. To address this, a share of the revenues from the BCA could support countries with limited capacity to estimate domestic effective carbon prices. Moreover, the flexible nature of the effective BCA mechanism indicates they may be the least trade-restrictive alternative.

Exception (b) also requires that the measure be proportional to the values it aims to achieve: the more critical the interests pursued, the more likely the measure is to pass the weighing and balancing test.[53] Addressing climate change is one of the fundamental priorities of our time. Both types of mechanisms can support this endeavor.

D. GATT Article XX Exception (g)

Exception (g) protects measures relating "to the conservation of exhaustible natural resources."[54] BCA mechanisms relate to this, as they mitigate climate change. Effective BCA mechanisms relate to conserving exhaustible natural resources more strongly because these instruments incentivize environmental action beyond mitigation.

Another requirement of this provision—that the BCA mechanism must "relate to" conserving exhaustible natural resources—would be easily met.[55] Because the Appellate Body has held that as long as the measure is not merely "incidentally" aimed at the conservation of exhaustible natural resources, well-designed BCA mechanisms should meet this requirement.[56]

Finally, under Exception (g), the measure should be "made effective in conjunction with restrictions on domestic production or consumption." Case law suggests that this element requires evenhanded—though not *identical*—treatment of domestic and imported products.[57] Arguably, the evenhandedness of treatment is better assured by effective BCA mechanisms because they encompass a broader set of measures and are, therefore, better able to capture restrictions imposed on domestic and imported products.

E. GATT Article XX Chapeau

Article XX will only justify a measure if it complies with the Chapeau provision. The Chapeau provision requires that a measure not be applied in a way that constitutes arbitrary or unjustifiable discrimination between countries where similar conditions prevail, or that constitutes a disguised restriction on international trade.[58]

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46. Steve Charnovitz, *Border Tax Equalization*, *in* The World Trade System: Trends and Challenges 40 (Jagdish N. Bhagwati et al., eds., 2017), at 40; Englisch & Falcao, *supra* note 45; Joost Pauwelyn, U.S. Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade Law (Duke Univ. Nicholas Inst. for Env't Pol'y Sols. 2007), https://nicholasinstitute.duke.edu/climate/policydesign/u.s.-federal-climate-policy-and-competitiveness-concerns-the-limits-and-options-of-international-trade-law [https://perma.cc/N9G2-BHT5]; Alice Pirlot, Environmental Border Tax Adjustments and International Trade Law 240 (2017), at 240; Joel P. Trachtman, *WTO Law Constraints on Border Tax Adjustment and Tax Credit Mechanisms to Reduce the Competitive Effects of Carbon Taxes*, 70 Nat'l Tax J. 469 (2017), at 477.
47. Brian P. Flannery et al., *Framework Proposal for a US Upstream GHG Tax With WTO-Compliant Border Adjustments: 2020 Update*, Res. for the Future (2020), https://www.rff.org/publications/reports/framework-proposal-us-upstream-ghg-tax-wto-compliant-border-adjustments-2020-update [https://perma.cc/AJ66-FXA8].
48. *See, e.g.*, Panel Report, *United States—Taxes on Petroleum and Certain Imported Substances*, ¶ 5.2.8, GATT Doc. (June 17, 1987).
49. GATT, *supra* note 39, at Article XX (b).
50. Intergovernmental Panel on Climate Change, Special Report: Global Warming of 1.5º C (2018), https:/www.ipcc.ch/sr15/ [https://perma.cc/P9TU-9XND] [hereinafter IPCC Special Report].
51. Appellate Body Report, *Brazil—Measures Affecting Imports of Retreaded Tyres*, ¶¶ 145, 210, WT/DS332/AB/R (Dec. 3, 2007) [hereinafter AB Report, Brazil—Retreaded Tyres].
52. Appellate Body Report, *United States—Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, ¶ 309, WT/DS285/AB/R (adopted Apr. 20, 2005).
53. Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, 172, WT/DS135/AB/R (adopted Mar. 12, 2001).
54. GATT, *supra* note 39, at Article XX (g).
55. Joost Pauwelyn, *Carbon Leakage Measures and Border Tax Adjustments Under WTO Law*, *in* Research Handbook on Environment, Health and the WTO 448, 500 (Geert van Calster & Denise Prevost eds., 2013).
56. Appellate Body Report, United States—Import Prohibition of Certain Shrimp and Shrimp Products, ¶ 129, WT/DS58/AB/R (adopted Nov. 6, 1998) [hereinafter AB Report, Shrimp-Turtle I], at ¶ 136.
57. Appellate Body Report, United States—*Standards for Reformulated and Conventional Gasoline*, ¶ 21, WTO Doc. WT/DS2/R (adopted May 20, 1996).
58. GATT, *supra* note 39, at Article XX.

Effective BCA mechanisms may better meet this requirement because they incorporate climate policies beyond explicit GHG pricing, thus avoiding arbitrary, unfair distinctions between countries that strictly impose an explicit carbon pricing scheme and countries that achieve similar results using other policies.

The Chapeau provision also requires that the measure not discriminate against countries where the same conditions prevail.[59] Thus, importing countries cannot require exporting countries to adopt their domestic regulatory programs. To meet this requirement, BCA mechanisms should account for the climate policies the exporting country implements and the level of development.[60] Effective BCA mechanisms may better meet the Chapeau requirement because they do not dictate *how* standards are to be met.

VIII. Conclusion

This Article elaborates a taxonomy of approaches to compare policies implemented by the importing and exporting countries under a BCA mechanism and argues that BCA mechanisms that consider both explicit and implicit carbon prices could yield more significant GHG emission reductions across the board, are more likely to be compatible with the GATT, and are more likely to support international cooperation on climate change than BCA instruments that consider exclusively explicit carbon prices. Many jurisdictions have significant capacity to impose this administratively more complex form of BCA mechanism and can, therefore, work toward gradually expanding the set of policies credited under BCA mechanisms.

In light of the 2015 Paris Agreement, well-designed BCA mechanisms should be understood as acts of multilateral unilateralism—and thus should be regarded as approved by all parties to the Paris Agreement. We call for a review mechanism under the UNFCCC or WTO to assess proposals for climate change policy measures that affect trade, such as BCA mechanisms. Measures aligned with the Paris Accord that are transparently specified, rigorously justified, not structured as a disguised barrier to trade, and with a trade burden that is not disproportionate to the climate policy gain should not be subject to further legal scrutiny under the GATT.[61]

59. Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products Recourse to Article 21.5 of the DSU by Malaysia*, ¶ 149 WT/DS58/AB/RW (adopted Oct. 22, 2001).
60. Pauwelyn, *supra* note 55, at 502-03.
61. For more on these sustainability disciplines, see Elena Cima & Daniel C. Esty, *Making International Trade Work for Sustainable Development: Toward a New WTO Framework for Subsidies*, J. Int'l Econ. Law (Feb. 22, 2024) "yellow box" discussion.

EFFICIENCY AND EQUITY IN REGULATION

by Caroline Cecot

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The Joseph Biden Administration has signaled an interest in ensuring that regulations appropriately benefit vulnerable and disadvantaged communities. Prior presidential administrations have focused on ensuring that regulations are efficient, maximizing the net benefits to society, without considering who benefits or who loses from these policies. Supporters of the current process are concerned that pursuing equity will come at significant cost to efficiency and ultimately leave everyone worse off.

This framework—efficiency versus equity—is misguided and counterproductive in many cases. All regulations have distributional consequences, and the traditional arguments for ignoring these consequences are outdated or wrong. In addition, current agency practice is often far from efficient, and there are opportunities to advance equity by improving the efficiency of regulations. In fact, neutral procedures such as cost-benefit analysis are more likely to benefit disadvantaged groups than is raw politics, whatever the intention, at least based on experience in regulatory policy. Furthermore, cost-benefit analysis and efficiency considerations more generally could help avoid outcomes that are, in their implementation, inequitable.

This Article supports these arguments by drawing on examples from the environmental context, where considerations of equity and efficiency have often been thought to conflict. Based on such examples, this Article proposes two rules of thumb for agencies to follow in order to promote both equity and efficiency using their existing authorities and avoid lose-lose scenarios. First, agencies should not leave society, from the aggregate perspective, worse off. In other words, agencies should pursue cost-benefit-justified actions. Second, within such cost-benefit justified actions, agencies should ensure that their actions do not leave disadvantaged groups worse off. In doing so, agencies should pay attention to the incidence of regulatory costs on such groups and consider deploying transfers under the agency's authority where appropriate and available to offset costs. This Article then compares this approach to proposals to consider equity in regulation more generally.

Editors' Note: This abstract is adapted from Caroline Cecot, *Efficiency and Equity in Regulation*, 76 VAND. L. REV. 361 (2023)*, and used with permission.*

GOING CONCERNS AND ENVIRONMENTAL CONCERNS: MITIGATING CLIMATE CHANGE THROUGH BANKRUPTCY REFORM

by Alexander Gouzoules

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This Article examines how legislative reforms to the Bankruptcy Code could mitigate the effects of climate change, speed the adoption of renewable energy, and contribute to the United States' compliance with the Paris Agreement of 2015. This Article analyzes the benefits derived by the fossil fuel industry from Chapter 11 of the Bankruptcy Code, which allows firms that extract fossil fuels to survive boom-and-bust cycles caused by volatile oil and gas prices. Through reorganization proceedings, insolvent polluters are preserved as going concerns during price collapses, only to resume and expand production as prices recover. This Article proposes novel legislative reforms to the Bankruptcy Code that would require insolvent fossil fuel producers to liquidate under Chapter 7 rather than reorganize under Chapter 11. These proposed reforms would also mandate the appointment of an environmental trustee during these liquidation proceedings, whose considerations would focus on the public interest. The public interest would weigh in favor of reserving certain assets for climate remediation, rather than selling them to other extractive firms for the benefit of creditors. This Article explores models for these proposals in existing insolvency law. Under the Securities Investor Protection Act and accompanying bankruptcy provisions, stockbrokers are required to liquidate rather than reorganize to protect the investing public. In railroad bankruptcies, special trustees and judicial consideration of the public interest have long been required, primarily due to the historical significance of railroads in the U.S. economy. Finally, the bankruptcy system has reorganized entities responsible for mass torts into those able to mitigate the harms they once imposed. This Article advances legislative reforms to the Bankruptcy Code that would facilitate the key societal goal of combatting climate change by bringing the treatment of insolvent fossil fuel firms more in line with the Code's treatment of entities in the critical industries identified above.

Editors' Note: This abstract is adapted from Alexander Gouzoules, *Going Concerns and Environmental Concerns: Mitigating Climate Change Through Bankruptcy Reform*, 62 B.C. L. Rev. 2169 (2022), *and used with permission.*

FORGOTTEN WATERS

by Michele Okoh

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Over 43 million Americans rely on private wells for drinking water, do not have access to public water systems, and are not protected by the Safe Drinking Water Act. These individuals are instead left with a set of widely differing state laws regulating their drinking water wells. Most of these states do not have any standards related to drinking water quality. Well owners are instead responsible for monitoring and maintaining the safety of their water. This problem is often characterized as a rural issue: hard to solve because of the large distance to treated water infrastructure. This assumption is wrong. Many homes are located in peri-urban communities, close to public water systems. These systems often have been excluded from public water systems due to racial and ethnic discrimination and poverty. Using the example of communities surrounding Mebane, North Carolina, this Article argues that approaches to addressing access to safe drinking water must account for this legacy of discrimination and discusses why the Rural Electrification Act (REA) provides a promising model to provide safe drinking water to well-dependent populations. The REA moves away from relying on the localities that have historically excluded these populations by instead presenting a cooperative example where these communities can gain direct access to funding for increasing their access to public water systems. In addition to the REA's model, it is important that well-dependent, municipally underbound communities are prioritized and are not placed in a position where they must compete against underserved communities that are serviced by public water systems. These communities require their own water infrastructure initiative which gives them the power to decide whether they have access to safe drinking water instead of having to rely on the same localities that exclude them.

Editors' Note: This abstract is adapted from Michele Okoh, *Forgotten Waters*, 111 GEO. L.J. 723 (2022), *and used with permission.*

IN CASE YOU MISSED IT . . .

In the Courts

"In the Courts" contains full summaries of court cases reported in *ELR Update* during the month of June 2024. They are listed under the following categories: Air, Climate Change, Energy, Governance, Natural Resources, Toxic Substances, Water, and Wildlife. The summaries are then arranged alphabetically by case name within each category. To access *ELR*'s entire collection of court cases and summaries, visit https://www.elr.info/judicial.

AIR

Ohio v. Environmental Protection Agency, No. 23A349, 54 ELR 20095 (U.S. June 27, 2024). The U.S. Supreme Court, 5-4, granted three states' and several industry groups' applications to stay enforcement of EPA's 2023 rule issuing a federal implementation plan (FIP) for 23 states whose SIPs the Agency determined had failed to adequately address new air quality standards for ozone levels under the CAA's "good neighbor" provision. EPA based the FIP on which emission control measures would maximize cost-effectiveness in improving ozone levels in downwind states and on the assumption the FIP would apply to all covered states. It also designed the plan to be severable, such that if any state dropped out, the plan would apply unchanged to the remaining states. Lower courts subsequently stayed 12 of the SIP disapprovals, precluding EPA from imposing the FIP on those states. The applicants challenged the FIP, arguing the decision to apply the plan after 12 states had "dropped out" was arbitrary and capricious, and sought to stay any effort to enforce the FIP against them pending appeal. The Court found EPA did not address whether and how measures found to maximize cost-effectiveness in achieving downwind ozone air quality improvements with the participation of 23 states would continue to do so when fewer states were subject to the plan, despite the concern having been raised during the public comment period. Finding the applicants were likely to succeed on their claim, it stayed enforcement of the rule pending disposition of petitions for review in the D.C. Circuit and any petitions for writ of certiorari. Gorsuch, J., delivered the opinion of the Court, in which Roberts, C.J., and Thomas, Alito, and Kavanaugh, JJ., joined. Barrett, J., filed a dissenting opinion, in which Sotomayor, Kagan, and Jackson, JJ., joined.

CLIMATE CHANGE

Multnomah, County of v. Exxon Mobil Corp., No. 3:23-cv-01213-YY, 54 ELR 20085 (D. Or. June 10, 2024). A district court adopted a magistrate judge's findings and recommendations to remand to state court a climate liability lawsuit brought by an Oregon county against oil and gas companies. The county initially sued in state court, arguing the companies failed to warn consumers about the negative effects of their products. The companies removed the suit to federal court on federal jurisdiction and diversity jurisdiction grounds, and the county moved to remand. The magistrate judge found the court did not have federal jurisdiction over the suit and that the companies failed to show one of the defendants was fraudulently joined, and recommended that the county's motion be granted. The court adopted the judge's findings and recommendations, and remanded the suit.

ENERGY

Tohono O'odham Nation v. United States Department of Interior, No. CV-24-00034-TUC-JGZ, 54 ELR 20083 (D. Ariz. June 6, 2024). A district court granted BLM's motion to dismiss tribes' and environmental groups' challenge to the Bureau's approval of a 550-mile transmission line route through the San Pedro Valley. Plaintiffs argued BLM violated the National Historic Preservation Act by failing to identify the San Pedro Valley as a "traditional cultural property" and failing to meaningfully consult with the tribes, and sought to vacate the Bureau's limited notices to proceed (LNTPs) and underlying record of decision (ROD) in order to reroute the line out of the valley. BLM moved to dismiss. The court found plaintiffs failed to state a claim because their challenges to the 2015 ROD were time barred by the six-year APA statute of limitations. Further, the 2023 LNTPs were not challengeable because they did not constitute "final agency action." It dismissed the suit.

GOVERNANCE

BlueRibbon Coalition v. Garland, No. 4:23-cv-00505-DCN, 54 ELR 20090 (D. Idaho June 20, 2024). A district court granted in part and denied in part an outdoor recreation group's motion to preliminarily enjoin the National Park Service's (NPS') regulations governing commercial filming on public lands. The group argued the regulations' land use fee and permitting requirements violated the First Amendment.

The court found the group persuasively argued the regulations suffered from content-based discrimination in light of a speaker-based distinction, and that while NPS had compelling reasons for the requirements, it was questionable whether NPS' methods were sufficiently tailored to those reasons. It preliminarily enjoined the regulations as applied to the group.

Loper Bright Enterprises v. Raimondo, Nos. 22-451 and 22-1219, 54 ELR 20097 (U.S. June 28, 2024). The U.S. Supreme Court, 6-3, held the APA requires courts to exercise independent judgment in deciding whether an agency has acted within its statutory authority and that courts may not defer to an agency's interpretation of the law simply because a statute is ambiguous, overruling *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984), in two lawsuits concerning application of the *Chevron* framework to a rule promulgated by NMFS pursuant to the Magnuson-Stevens Act (MSA). In both suits, commercial fishing companies challenged the rule, arguing the MSA did not authorize the agency to mandate that they pay for observers required by a fishery management plan. Two district courts granted summary judgment for NMFS, deferring to the agency's interpretation under *Chevron*. Two appellate courts affirmed, deferring to the agency's interpretation as a "reasonable" construction of the MSA in one of the suits and as not "exceed[ing] the bounds of the permissible" in the other. The Supreme Court granted certiorari in both, limiting the question to whether *Chevron* should be overruled or clarified. The Court found the deference *Chevron* required of courts reviewing agency action could not be squared with the APA, which directs courts to "decide legal questions by applying their own judgment." According to the majority, "*Chevron* defies the command of the APA that 'the reviewing court'—not the agency whose action it reviews—is to 'decide *all* relevant questions of law' and 'interpret . . . statutory provisions,'" and when it comes to statutory ambiguities, even those involving technical or scientific questions that fall within an agency's area of expertise, "Congress expects courts to handle technical statutory questions." It overruled *Chevron*, vacated the appellate judgments in both suits, and remanded for further proceedings. Roberts, C.J., delivered the opinion of the Court, in which Thomas, Alito, Gorsuch, Kavanaugh, and Barrett, JJ., joined. Thomas, J., and Gorsuch, J., filed concurring opinions. Kagan, J., filed a dissenting opinion, in which Sotomayor, J., joined, and in which Jackson, J., joined as it applies to No. 22-1219. Jackson, J., took no part in the consideration or decision of the case in No. 22-451.

Mid Valley Pipeline Co., L.L.C. v. Rodgers, No. 23-60536, 54 ELR 20082 (5th Cir. June 5, 2024). The Fifth Circuit affirmed dismissal of a constitutional challenge brought by a pipeline company concerning a 1949 permit a local levee board granted to the company to construct and maintain two pipelines across a levee in Mayersville, Mississippi. The company argued the board violated the Contracts Clause by imposing annual pipeline crossing fees on the company that were not contemplated by the permit because the permit was a contract that the board could not modify. The appellate court found the permit's straightforward, unambiguous text made clear that the parties lacked the mutuality of assent to have entered a contract, and thus that the company's claim necessarily failed. It affirmed dismissal.

Securities and Exchange Commission v. Jarkesy, No. 22-859, 54 ELR 20096 (U.S. June 27, 2024). The U.S. Supreme Court, 6-3, held the Seventh Amendment entitled an investment advisor to a jury trial in an enforcement action initiated by the Securities and Exchange Commission (SEC) seeking civil penalties for securities fraud. The SEC adjudicated the matter administratively, and determined the advisor had committed securities violations and levied a $300,000 civil penalty. The advisor petitioned for review, and the Fifth Circuit vacated the order on the ground that the agency adjudication violated the advisor's right to a jury trial. The Supreme Court found the action implicated the Seventh Amendment because the SEC's antifraud provisions replicated common-law fraud and it was well established that common-law claims must be heard by a jury; and that the "public rights" exception did not apply because the action here did not fall within any of the distinctive areas involving governmental prerogatives where the Court has concluded that a matter may be resolved outside of an Article III court, without a jury. It held the Seventh Amendment applied and a jury was required. The Court affirmed the Fifth Circuit ruling and remanded for further proceedings. Roberts, C.J., delivered the opinion of the Court, in which Thomas, Alito, Gorsuch, Kavanaugh, and Barrett, JJ., joined. Gorsuch, J., filed a concurring opinion, in which Thomas, J., joined. Sotomayor, J., filed a dissenting opinion, in which Kagan and Jackson, JJ., joined.

NATURAL RESOURCES

Earthworks v. United States Department of the Interior, No. 20-5382, 54 ELR 20093 (D.C. Cir. June 25, 2024). The D.C. Circuit, 2-1, affirmed summary judgment for BLM in a challenge to the agency's 2003 final rule withdrawing a proposed rule that would have limited the maximum size of "mill sites" for mining claims on federal lands and instead codifying the agency's historical understanding that the governing statute imposed no such limit. Environmental groups argued BLM's interpretation of §42 of the 1872 Mining Law was unreasonable because §42 unambiguously limited a claimant to one five-acre mill site per mining claim. The appellate court concluded the operative words of §42 plainly contained no limit on the number of mill sites a claim owner might locate. The groups next argued BLM violated NEPA by failing to prepare an EIS. The court found the final rule was not a "major federal action," and thus BLM was not required to prepare an EIS. The groups also argued BLM violated the notice provision of the APA by issuing the final rule without an additional notice-and-comment cycle, but the court found the rule to be a "logical outgrowth" of the proposed rule. It affirmed summary judgment for BLM.

Food & Water Watch v. Federal Energy Regulatory Commission, No. 22-1214, 54 ELR 20087 (D.C. Cir. June 14, 2024). The

D.C. Circuit denied petitions to review FERC's approval of a project that would expand service on a natural gas pipeline running from western Pennsylvania to the New York metropolitan area. A nonprofit group argued FERC's EIS failed to quantify greenhouse gas (GHG) emissions from upstream drilling for the extra gas, failed to quantify ozone emissions from its downstream burning, and failed to categorize emissions impacts as significant or insignificant. It further argued the Commission did not adequately consider state and city laws in mandating reductions in carbon dioxide emissions. The court found FERC reasonably concluded there was too much uncertainty regarding the number and location of additional upstream wells, reasonably explained its decision to not give a quantitative estimate of how much ozone would be produced, and amply discussed the "significance" of GHG emissions despite not having attached a specific label. It further found the New York State Climate Leadership and Community Protection Act did not undercut FERC's finding of need. The court denied the group's petitions.

Nessel v. Enbridge Energy, LP, No. 23-1671, 54 ELR 20088 (6th Cir. June 17, 2024). The Sixth Circuit reversed a district court ruling in a lawsuit concerning the Line 5 Pipeline that runs underwater across the Straits of Mackinac between Michigan's Lower and Upper Peninsulas. Michigan's attorney general (AG) initially sued the pipeline owner in state court, seeking to enjoin continued operation of the pipeline based on alleged violations of the public trust doctrine, common-law public nuisance, and Michigan Environmental Protection Act. The owner removed the suit to federal court, invoking federal question jurisdiction. The AG moved to remand for lack of subject matter jurisdiction and untimely removal. The district court denied the motion, holding it had federal question jurisdiction under *Grable* because resolution of the claims necessarily required interpretation of federal law, namely the Submerged Lands Act, the Pipeline Safety Act, and a 1977 treaty. The appellate court found the pipeline owner failed to timely remove the suit, and that there were no equitable exceptions to the deadline. It reversed the district court ruling and remanded the suit to state court.

TOXIC SUBSTANCES

Center for Environmental Health v. Regan, No. 23-1476, 54 ELR 20084 (4th Cir. June 10, 2024). The Fourth Circuit affirmed dismissal of a TSCA citizen suit concerning EPA's decision on a petition to require testing for 54 per- and polyfluoroalkyl substances (PFAS). Four citizen groups argued that EPA's decision, which granted the petition and agreed to require testing on PFAS as a class through its own testing protocol, was effectively a denial of their petition because the Agency did not require direct testing on 47 of the substances identified and did not adopt their testing strategy. A district court dismissed for lack of jurisdiction, finding the decision was a grant in fact because EPA reasonably chose to grant the request to test the 54 PFAS as a category and that the groups did not have the right to compel adoption of their specific testing program. The appellate court agreed, finding EPA followed TSCA's requirements when choosing to treat the 54 PFAS as a class and that it did not effectively deny the petition by declining to adopt the proposed testing program. It affirmed dismissal for lack of jurisdiction.

WATER

Puget Soundkeeper Alliance v. Port of Tacoma, Nos. 21-35881, 21-35899, and 22-35061, 54 ELR 20086 (9th Cir. June 10, 2024). The Ninth Circuit reversed in part summary judgment for the operators of a marine cargo terminal on Puget Sound in a CWA citizen suit concerning stormwater discharges. An environmental group argued the operators were liable for discharges from the facility's entire footprint, including an area known as the "wharf." A district court granted partial summary judgment for the operators, holding the terminal's 2010 and 2015 industrial stormwater general permits (ISGPs) did not extend to the entire footprint of facilities that conducted industrial activity. The appellate court found the plain text of the two ISGPs required a transportation facility conducting industrial activities to implement stormwater controls across the entire facility, that the terminal was conducting industrial activities, and that the operators needed to implement appropriate stormwater controls across the footprint of the terminal while the ISGPs were in effect. It reversed summary judgment for the terminal operators on this issue.

Texas v. New Mexico, No. 141, Orig., 54 ELR 20091 (U.S. June 21, 2024). The U.S. Supreme Court, 5-4, denied two states' motion to enter into a consent decree in a lawsuit concerning a 1938 interstate agreement that apportions the waters of the Rio Grande River among Colorado, New Mexico, and Texas. Texas initially sued Colorado and New Mexico, arguing excessive groundwater pumping in New Mexico was depleting supplies of Rio Grande water bound for Texas. The U.S. government moved to intervene, and the Court allowed it because it found the government had its own distinct interests in holding New Mexico to its obligations under the agreement, which was "inextricably intertwined" with the government's operation of the irrigation system in southern New Mexico. Texas and New Mexico subsequently sought approval of a proposed consent decree that would resolve the suit and codify a methodology for allocating each state's share of the river's waters. A special master recommended that the Court approve the consent decree. The U.S. government objected and filed an exception, arguing the decree would dispose of its claims that New Mexico's groundwater pumping was violating the agreement. The Court held that since the proposed decree would dispose of the government's valid claims without its consent, the motion to enter the decree was denied. It sustained the government's exception. Jackson, J., delivered the opinion of the Court, in which Roberts, C.J., and Sotomayor, Kagan, and Kavanaugh, JJ., joined. Gorsuch, J., filed a dissenting opinion, in which Thomas, Alito, and Barrett, JJ., joined.

White v. United States Environmental Protection Agency, No. 2:24-CV-00013-BO, 54 ELR 20089 (E.D.N.C. June 18, 2024). A district court denied a commercial fisherman's motion to preliminarily enjoin the Army Corps of Engineers and EPA from enforcing a 2023 rule that revised the definition of "waters of the United States." The fisherman argued the agencies did not faithfully implement the *Sackett v. Environmental Protection Agency*, 598 U.S. 651 (2023) test for adjacent wetlands because their definition omitted a key element, and moved to enjoin enforcement of the rule against him and his properties. The court found it could not square the fisherman's view of what *Sackett* required for a wetland to be "adjacent"—that a continuous surface connection is necessary but not sufficient for a wetland to be practically indistinguishable and thus adjacent to a jurisdictional water—with what *Sackett* actually requires—that the adjacent body of water is "waters of the United States" and that the wetland has a continuous surface connection with that water, making it difficult to determine where the water ends and the wetland begins. Finding that the rule faithfully conformed to the definition of "waters of the United States" as interpreted by *Sackett*, the court denied the fisherman's motion.

WILDLIFE

Cascadia Wildlands v. Scott Timber Co., No. 22-35764, 54 ELR 20094 (9th Cir. June 26, 2024). The Ninth Circuit affirmed a district court's permanent injunction in an ESA citizen suit concerning a proposed timber harvesting project on private property in Oregon. Environmental groups argued the project would cause a "take" of marbled murrelets in violation of the ESA by clearing acres of trees used for breeding. The district court found the project would eliminate 49 acres of old growth forest occupied by the species, which qualified as a "significant habitat modification or degradation," and permanently enjoined implementation of the project. The appellate court concluded the district court applied the correct injury standard and committed no factual error in holding that the timber harvest would cause actual injury and therefore "harm" under the ESA. It further held the evidence more than supported the district court's conclusion that the project would specifically cause injury to the species on the property. The court affirmed the permanent injunction.

Center for Biological Diversity v. National Marine Fisheries Service, No. 22-5295, 54 ELR 20092 (D.C. Cir. June 21, 2024). In an unpublished per curiam judgment, the D.C. Circuit affirmed summary judgment for NMFS in a challenge to the Service's 2019 rule regarding turtle excluder devices. Environmental groups argued the final rule was not adequately explained, that it was not a logical outgrowth of the proposed rule that preceded it, and that NMFS was required by NEPA to conduct a species-by-species analysis of the protected turtle population rather than an analysis of the aggregate population. A district court granted summary judgment for NMFS. The appellate court found NMFS adequately explained why it chose to require fewer shrimpers to use turtle excluder devices in the final rule than in the proposed rule—to impose a smaller economic burden on the fishing industry—and that the final rule fell squarely within the range of options in the proposed rule. It further found the NEPA claim was forfeited because the groups failed to raise it during the administrative process. The court affirmed summary judgment for NMFS.

In the Federal Agencies

"In the Federal Agencies" contains summaries of notable agency activity during the month of June 2024. Citations are to the *Federal Register* (FR). Entries below are organized by Final Rules, Proposed Rules, and Notices. Within each section, entries are further subdivided by the subject matter area, with entries listed chronologically. To see ELR's entire collection, visit https://www.elr.info/federal-register.

FINAL RULES

AIR

EPA established requirements for commercial refrigerating appliances and commercial ice machines, safe use of flammable refrigerants, and safe design, construction, installation, and operation of refrigeration systems; and listed several substitutes as acceptable for retail food refrigeration, commercial ice machines, industrial process refrigeration, cold storage warehouses, and ice skating rinks, pursuant to the Agency's significant new alternatives policy program. 89 FR 50410 (6/13/24).

GOVERNANCE

Th National Highway Traffic Safety Administration finalized corporate average fuel economy standards for passenger cars, light trucks, heavy-duty pickup trucks, and vans. 89 FR 52540 (6/24/24).

WASTE

The Pipeline and Hazardous Materials Safety Administration amended the Hazardous Materials Regulations to require railroads that carry hazardous materials to generate in electronic form, maintain, and provide to first responders, emergency response officials, and law enforcement personnel, certain information regarding hazardous materials in rail transportation to enhance emergency response and investigative efforts. 89 FR 52956 (6/24/24).

WATER

NOAA issued final regulations for the designation of the Lake Ontario National Marine Sanctuary in eastern Lake Ontario to recognize the national significance of the area's historical, archaeological, and cultural resources and to manage this area as part of the National Marine Sanctuary System. 89 FR 48272 (6/6/24).

WILDLIFE

FWS determined threatened species status under the ESA for the Suwannee alligator snapping turtle, and finalized a rule issued under §4(d) of the Act that provides for the conservation of the species. 89 FR 53507 (6/27/24).

PROPOSED RULES

AIR

EPA proposed amendments to several new source performance standards and NESHAPs under the CAA; the amendments would remove the affirmative defense provisions associated with violation of emission standards due to malfunctions. 89 FR 52425 (6/24/24).

GOVERNANCE

The Internal Revenue Service proposed regulations relating to the clean electricity production credit and the clean electricity investment credit established by the Inflation Reduction Act of 2022 to provide rules for determining greenhouse gas emissions rates resulting from the production of electricity; petitioning for provisional emissions rates; and determining eligibility for these credits in various circumstances. 89 FR 47792 (6/3/24).

LAND USE

The National Park Service (NPS) proposed to revise regulations governing the application, processing, and issuance of right-of-way permits for lands and waters administered by NPS. 89 FR 48850 (6/10/24).

WATER

FERC proposed to amend regulations to clarify that for all proceedings before the Commission that require a water quality certification pursuant to §401(a)(1) of the CWA, the reasonable period of time during which the certifying authority may act on the water quality certification request is one year from the certifying authority's receipt of the request. 89 FR 48351 (6/6/24).

NOTICES

AIR

EPA designated one new equivalent method for measuring concentrations of ozone in ambient air. 89 FR 49874 (6/12/24).

NATURAL RESOURCES

DOI proposed to revise seven categorical exclusions under NEPA in the Bureau of Reclamation's NEPA implementing procedures. 89 FR 48674 (6/7/24).

WATER

EPA announced the availability of revised guidelines for eligible recipients (states, territories, and the District of Columbia) awarded federal grants under §319 of the CWA for the implementation of nonpoint source management programs. 89 FR 53995 (6/28/24).

In the Congress

"In the Congress" covers notable environment-related activities reported in the *Congressional Record* during the month June 2024. Entries are arranged by bill number, with Senate bills listed first. To see all environment-related bills that are introduced, reported out of committee, passed by either house, or signed by the president, including environmental treaties ratified by the Senate, visit *ELR*'s website at https://elr.info/legislative/congressional-update.

BILLS INTRODUCED

AIR

H.R. 8676 was introduced by Rep. Jasmine Crockett (D-Tex.) on June 11, 2024. The bill would reduce enteric methane emissions. It was referred to the Committee on Agriculture. 170 Cong. Rec. H3724 (daily ed. June 11, 2024).

GOVERNANCE

S. 4462 was introduced by Sen. Mazie Hirono (D-Haw.) on June 5, 2024. The bill would provide for the establishment of a National Interagency Seed and Restoration Center. It was referred to the Committee on Environment and Public Works. 170 Cong. Rec. S3990 (daily ed. June 5, 2024).

H.R. 8618 was introduced by Rep. Bennie Thompson (D-Miss.) on June 4, 2024. The bill would require EPA to assess the life-cycle greenhouse gas emissions associated with forest biomass combustion for electricity when developing relevant rules and regulations and to carry out a study on the impacts of the forest biomass industry. It was referred to the Committee on Energy and Commerce. 170 Cong. Rec. H3655 (daily ed. June 4, 2024).

H.R. 8682 was introduced by Rep. Jared Huffman (D-Cal.) on June 11, 2024. The bill would amend the Internal Revenue Code to expand the exclusion for certain conservation subsidies to include subsidies for water conservation or efficiency measures, stormwater management measures, and wastewater management measures. It was referred to the Committee on Ways and Means. 170 Cong. Rec. H3724 (daily ed. June 11, 2024).

LAND USE

H.R. 8790 (Fix Our Forests Act) was introduced by Rep. Bruce Westerman (R-Ark.) on June 18, 2024. The bill would expedite under NEPA and improve forest management activities on National Forest System lands, on public lands under the jurisdiction of BLM, and on tribal lands to return resilience to overgrown, fire-prone forested lands. It was referred to the Committees on Natural Resources, Agriculture, and Science, Space, and Technology. 170 Cong. Rec. H4113 (daily ed. June 18, 2024).

TOXIC SUBSTANCES

H.R. 8747 was introduced by Rep. Norma Torres (D-Cal.) on June 13, 2024. The bill would require disclosure of asbestos hazards in the sale and lease of residential dwellings. It was referred to the Committees on Financial Services and Energy and Commerce. 170 Cong. Rec. H4062 (daily ed. June 13, 2024).

WATER

H.R. 8831 was introduced by Rep. Raul Ruiz (D-Cal.) on June 25, 2024. The bill would amend the SDWA to require drinking water distribution systems to be flushed under certain circumstances. It was referred to the Committee on Energy and Commerce. 170 Cong. Rec. H4151 (daily ed. June 25, 2024).

WILDLIFE

H.R. 8632 was introduced by Rep. Glenn Grothman (R-Wis.) on June 5, 2024. The bill would require the Secretary of the Interior to withdraw a proposed rule relating to the biological integrity, diversity, and environmental health of the National Wildlife Refuge System. It was referred to the Committee on Natural Resources. 170 Cong. Rec. H3672 (daily ed. June 5, 2024).

H.R. 8704 was introduced by Rep. Earl Carter (R-Ga.) on June 12, 2024. The bill would require the Secretary of Commerce to establish a grant program to foster enhanced coexistence between ocean users and North Atlantic right whales and other large cetacean species. It was referred to the Committees on Transportation and Infrastructure and Natural Resources. 170 Cong. Rec. H3973 (daily ed. June 12, 2024).

H.R. 8788 was introduced by Rep. Mary Peltola (D-Alaska) on June 18, 2024. The bill would amend the Magnuson-Stevens Fishery Conservation and Management Act to establish the Fisheries and Ecological Resilience Program, and direct the Comptroller General of the United States to submit to Congress a report on the competitiveness of domestic seafood producers in domestic and global seafood trade. It was referred to the Committees on Natural Resources and Ways and Means. 170 Cong. Rec. H4113 (daily ed. June 18, 2024).

In the State Agencies

"In the State Agencies" contains summaries of notable state regulatory developments reported during the month of June 2024. The entries are arranged by state, and within each section, entries are further subdivided by subject matter. To access *ELR*'s entire collection of state regulatory developments, visit https://elr.info/administrative/state-updates.

ALASKA

ENERGY

The Department of Natural Resources adopted amendments to regulations governing the carbon offset program. The amendments add a new chapter on carbon offset projects on state land, addressing project identification, feasibility evaluation, land use planning, best interest finding, and application, registration, and management of projects. *See* https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=215806 (June 20, 2024).

WATER

The Department of Environmental Quality announced the availability of the State Fiscal Year 2025 (SFY25) Intended Use Plans and Project Priority Lists for the Base and Bipartisan Infrastructure Law Capitalization Grants. The draft plans outline the State Revolving Fund Program's plan for administering the base capitalization grant funding associated with the Clean Water State Revolving Fund and the Drinking Water State Revolving Fund, and include the general supplemental funding made available through the Infrastructure Investment and Jobs Act of 2021 for SFY25. The plans specifically identify the available funding, the types of projects eligible for this funding, and the associated requirements. *See* https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=215574 (May 31, 2024).

The Department of Natural Resources adopted amendments to regulations governing water management. The amendments clarify commissioner actions regarding pending water right applications and time frames for extending an authorization for temporary use of water. *See* https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=215679 (June 10, 2024).

The Department of Environmental Conservation proposed amendments to regulations governing state water quality standards. The amendments would clarify that, in addition to use of the Guidance for the Implementation of Natural Condition-Based Water Quality Standards to establish water quality-based effluent limits, the Department may establish water quality-based effluent limits for groundwater discharges based on the monitoring and corrective action requirements set out under Alaska Admin. Code tit. 18, ch. 60. *See* https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=215681 (June 20, 2024).

The Department of Environmental Conservation proposed to issue an Alaska Pollutant Discharge Elimination System general permit for discharges of backwash and reject water from conventional/direct, membrane filtration, and ion exchange treatment systems into fresh or marine surface water in the state. *See* https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=215873 (June 27, 2024).

The Department of Environmental Conservation seeks comment on its draft 2024 Integrated Water Quality Monitoring and Assessment Report, which describes the health of the state's waters and includes the list of impaired waters. The proposed changes to water body classifications include identifying healthy waters, removing two waters from the impaired list, implementing an alternative water body restoration plan, and adding a new pollutant of concern to two waters already on the impaired list. *See* https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=215800 (June 21, 2024).

ARKANSAS

GOVERNANCE

The Department of Agriculture adopted amendments to regulations governing conservation districts. The amendments incorporate legislative changes resulting from Acts 690 and 691 regarding the appointment and election of conservation district board members. *See* http://170.94.37.152/REGS/238.01.24-001F-24500.pdf (June 3, 2024).

WASTE

The Pollution Control and Ecology Commission adopted amendments to regulations governing storage tanks. The amendments, among other things, conform to new payment requirements from the Petroleum Storage Tank Trust Fund established in Act 422 and incorporate provisions for lapsed licenses and reinstatement and reciprocity and provisional certificates. *See* http://170.94.37.152/REGS/118.01.24-002F-24583.pdf (June 13, 2024).

The Oil and Gas Commission adopted amendments to regulations governing underground natural gas storage projects. The amendments, among other things, expand the regulation to also encompass other gas storage projects and add definitions such as "gas storage reservoir." *See* http://170.94.37.152/REGS/118.03.24-002F-24584.pdf (June 17, 2024).

COLORADO

NATURAL RESOURCES

The Energy and Carbon Management Commission proposed to adopt regulations governing cumulative impacts of oil and gas development. The amendments would evaluate and address the cumulative impacts of oil and gas operations and implement enhanced systems and practices to reduce emissions of ozone precursors from newly permitted oil and gas operations in the ozone nonattainment area. A hearing will be held September 3, 2024. *See* https://www.sos.state.co.us/CCR/RegisterContents.do?publicationDay=06/25/2024&Volume=47&yearPublishNumber=12&Month=6&Year=2024 (June 25, 2024).

WASTE

The Department of Public Health and Environment adopted amendments to regulations governing the remediation of closed solid waste landfills. The amendments establish how the Department will administer the grant program for the remediation of closed solid waste landfills owned by eligible local governments in Colorado. *See* https://www.sos.state.co.us/CCR/Upload/AGORequest/AdoptedRules02024-00189.docx (June 10, 2024).

The Department of Public Health and Environment adopted amendments to regulations governing solid and hazardous waste commission fees. The amendments do not change the amounts of the annual commission fees, but change the regulations to reflect the 2024-2025 fiscal year. *See* https://www.sos.state.co.us/CCR/Upload/AGORequest/AdoptedRules02024-00188.rtf (June 10, 2024).

WATER

The Water Quality Control Commission adopted amendments to water quality control division cash fees. The amendments increase drinking water cash fees, as well as commerce and industry fees, by 13%. *See* https://www.sos.state.co.us/CCR/Upload/AGORequest/AdoptedRules02023-00812.docx (June 25, 2024).

WILDLIFE

The Oil and Gas Conservation Commission adopted amendments to certain high-priority habitat maps, including those for raptors, Colorado Parks and Wildlife-owned properties, grouse, big game, aquatic, and other wildlife. *See* https://www.sos.state.co.us/CCR/RegisterContents.do?publicationDay=06/25/2024&Volume=47&yearPublishNumber=12&Month=6&Year=2024 (June 25, 2024).

CONNECTICUT

WASTE

The Department of Energy and Environmental Protection adopted amendments to regulations governing the use, control, and possession of ionizing radiation. The amendments update the regulatory framework concerning the use, control, and possession of ionizing radiation for consistency with current technologies and federal standards and repeal outdated existing regulations. *See* https://eregulations.ct.gov/eRegsPortal/Search/getDocument?guid={70E4F38F-0000-CE18-9216-29AA0DF7C440} (June 7, 2024).

FLORIDA

WATER

The Department of Agriculture and Consumer Services proposed amendments to regulations governing best management practices for Florida sod. The amendments would adopt by reference the updated 2024 edition of the Water Quality/Quantity Best Management Practices for the Florida Sod manual, remove duplicative language, clarify the intent of the best management practices program enrollment and checklist requirements, and outline terms for equivalent program enrollments. *See* https://www.flrules.org/Gateway/View_notice.asp?id=28463697 (June 19, 2024).

IDAHO

WASTE

The Department of Environmental Quality proposed amendments to regulations governing individual/subsurface sewage disposal and septic tank cleaning. The amendments would, among other things, remove and replace definitions, revise and simplify septic tank approvals, remove specific requirements for large septic tanks, reduce setbacks to surface water,

combine the cleaning of septic tank sections into one section, and simplify the permitting process for service providers. *See* 24-6 Idaho Admin. Bull. 99 (June 5, 2024).

ILLINOIS

WASTE

The Pollution Control Board adopted amendments to regulations governing sewer discharge criteria. The amendments align Illinois wastewater pretreatment requirements with regulations adopted by EPA during the second half of 2023, update incorporations by reference, and make non-substantive corrections. *See* 48 Ill. Reg. 8106 (May 31, 2024).

KANSAS

GOVERNANCE

The Department of Health and Environment proposed amendments to an existing rule and to adopt a new rule concerning health and environmental laboratory certification. The amendments to the existing rule would, among other things, clarify defined terms, modify rules for field laboratories, and update fees, and the new rule would describe requirements for environmental laboratories to achieve and maintain certification, maintain the two-tier certification system, and provide detailed requirements for applications, assessments, proficiency testing, and certification changes. A hearing will be held September 17, 2024. Comments are due August 26, 2024. *See* https://sos.ks.gov/publications/Register/Volume-43/Issues/Issue-26/06-27-24-52259.html (June 27, 2024).

KENTUCKY

AIR

The Department for Environmental Protection proposed amendments to regulations governing air emissions fees. The amendments would remove the 4,000-ton limit per pollutant and exempt a source from invoicing if the source's only applicable requirement is 40 C.F.R. Part 60, Subpart JJJJ, Subpart IIII, or 40 C.F.R. Part 63 Subpart ZZZZ, or any combination of those, which is required for fire suppression purposes. *See* 50 Ky. Admin. Reg. 2473 (June 1, 2024).

LOUISIANA

NATURAL RESOURCES

The Department of Energy and Natural Resources proposed amendments to regulations governing pipeline safety. The amendments would modify carbon dioxide rules and codify federal regulations related to carbon dioxide transmission facilities. *See* 50 La. Reg. 837 (June 20, 2024).

MAINE

NATURAL RESOURCES

The Department of Environmental Protection adopted amendments to regulations governing metallic mineral exploration and advanced exploration and mining. The amendments create a process for exclusion from Chapter 200 requirements (i.e., physical extraction, crushing, grinding, sorting, and storage of metallic minerals), and require ongoing water quality monitoring in cases where an exclusion is granted. *See* https://www.maine.gov/sos/cec/rules/notices/2024/060524.html (June 5, 2024).

TOXIC SUBSTANCES

The Board of Pesticides Control seeks comment on a request to designate a critical pesticide control area around two public drinking water wellheads on Eagle Lake. The zone would prevent the use of pesticides within a 500-foot radius of the two drinking water wellheads. *See* https://www.maine.gov/sos/cec/rules/notices/2024/06262024.html (June 26, 2024).

MISSISSIPPI

WATER

The Department of Health proposed to adopt the FYY-2023 Intended Use Plan for the Drinking Water Systems Improvements Revolving Loan Fund Lead Service Line Replacement program. The plan outlines proposed projects to be funded and the terms of assistance for the program. *See* https://www.sos.ms.gov/adminsearch/ACProposed/00027518a.pdf (June 4, 2024).

The Department of Health proposed to adopt the FFY-2024 Intended Use Plan for the Drinking Water Systems Improvements Revolving Loan Fund. The plan outlines proposed projects to be funded and the terms of assistance

for the program. *See* https://www.sos.ms.gov/adminsearch/ACProposed/00027517a.pdf (June 3, 2024).

MISSOURI

NATURAL RESOURCES

The Department of Natural Resources proposed amendments to regulations governing geologic resources fees. The amendments would increase the geologic resources fees for surface mining activities pursuant to Mo. Rev. Stat. §256.700. *See* 49 Mo. Reg. 884 (June 17, 2024).

MONTANA

AIR

The Department of Environmental Quality proposed amendments to regulations governing the incorporation by reference of federal air quality regulations. The amendments would update references to the *Code of Federal Regulations* and the U.S. Code, including, among other things, incorporating the North American Industry Classification System of 2022, reflecting the transfer of rulemaking authority from the Board of Environmental Review to the Department, and aligning with current industry standards and EPA guidelines. *See* 11 Mont. Admin. Reg. 1278 (June 7, 2024).

WATER

The Department of Environmental Quality proposed to readopt, with amendments, the Department Circular DEQ-8 Montana Standards for Subdivision Storm Water Drainage. The standards would, among other things, clarify stormwater drainage design standards for subdivisions, exclude subdivisions crossing large drainageways, introduce new methods for determining retention pond sizes and culvert requirements, update terminology and calculations for facility volumes, and establish minimum distance requirements for stormwater facilities. *See* 11 Mont. Admin. Reg. 1259 (June 7, 2024).

The Department of Environmental Quality proposed to readopt, with amendments, Circular DEQ-1 governing ultraviolet (UV) treatment of groundwater sources of public water systems. The standards would, among other things, impose sampling, monitoring, and reporting requirements for public water supply systems using UV treatment for groundwater sources, as well as update the incorporation by reference year to 2024. *See* 12 Mont. Admin. Reg. 1418 (June 21, 2024).

The Department of Natural Resources and Conservation proposed amendments to regulations governing dam safety hazard determinations. The amendments would allow dam owners to choose between providing their own evaluation or a simplified Department evaluation, clarify that fees are for the application rather than inspections, and acknowledge that the Department's costs for classification changes include more than just inspection expenses. *See* 12 Mont. Admin. Reg. 1438 (June 21, 2024).

NEVADA

WILDLIFE

The Board of Wildlife Commissioners proposed amendments to regulations governing wildlife conservation projects. The amendments would move the deadline for completion of certain conservation projects from the end of the fiscal year to June 30 while providing provisions for a deadline extension under specified circumstances. *See* https://www.leg.state.nv.us/Register/2024Register/R112-24P.pdf (June 26, 2024).

NEW JERSEY

WILDLIFE

The Department of Environmental Protection proposed amendments to regulations governing endangered and nongame species. The amendments would, among other things, update the list of endangered species and the list providing conservation status of Indigenous nongame wildlife species. Comments are due August 5, 2024. *See* http://www.lexisnexis.com/hottopics/njoal/ (June 3, 2024).

NEW MEXICO

AIR

The Albuquerque-Bernalillo County Air Quality Control Board proposed amendments to regulations governing Title V operating permits. The amendments would remove Title V operating permit affirmative defense provisions pursuant to changes in 40 C.F.R. 70.6(g) and 71.6(g). A hearing will be held August 14, 2024. Comments are due the same date. *See* https://www.srca.nm.gov/nmac/nmregister/xxxv/CABQnotice_xxxv12.html (June 25, 2024).

OREGON

ENERGY

The Department of Environmental Quality proposed to adopt regulations governing noise control for solar energy facilities. The amendments would allow solar energy generation facilities to demonstrate compliance with state noise regulations in the same manner as currently allowed for wind electrical generation facilities. *See* https://records.sos.state.or.us/ORSOSWebDrawer/Recordhtml/10198908 (May 30, 2024).

WASTE

The Department of Environmental Quality proposed to adopt regulations governing plastic pollution and recycling. The regulations would establish the requirements for the comingled recycling processing facility (CRPF) permit program and ensure that CRPF facilities meet the new requirements of the Plastic Pollution and Recycling Modernization Act. *See* https://records.sos.state.or.us/ORSOSWebDrawer/Recordhtml/10198936 (May 29, 2024).

WILDLIFE

The Department of Agriculture adopted amendments to the state list of endangered and threatened plants. The amendments add a subset of six plant species (Castilleja mendocinensis, Lasthenia ornduffii, Lomatium bentonitum, Penstemon hesperius, Pyrrocoma scaberula, and Rorippa columbiae) to the list. *See* https://records.sos.state.or.us/ORSOSWebDrawer/Recordhtml/10199569 (May 2, 2024).

UTAH

WASTE

The Department of Environmental Quality proposed amendments to regulations governing petroleum storage tanks. The amendments would, among other things, allow the Environmental Response and Remediation agency to continue issuing certificates of compliance to and require leak detection at all regulated facilities. *See* 2024-11 Utah Bull. 87 (June 1, 2024).

The Department of Environmental Quality proposed amendments to regulations governing administrative procedures. The amendments would clarify the types of licensing actions that are major licensing actions and thus require an EA. *See* 2024-11 Utah Bull. 99 (June 1, 2024).

The Department of Environmental Quality proposed amendments to regulations governing uranium mills and source material mill tailings disposal facilities. The amendments would, among other things, clarify when an application for a new license, license renewal, or major licensing action that involves construction must be filed with the director and that the application must include an environmental report. *See* 2024-11 Utah Bull. 102 (June 1, 2024).

WASHINGTON

WASTE

The Department of Ecology adopted amendments to regulations governing municipal solid waste (MSW) landfills. The amendments establish requirements for MSW landfills that have received solid waste after January 1, 1992. *See* https://lawfilesext.leg.wa.gov/law/wsr/2024/11/24-11-052.htm (May 13, 2024).

The Pollution Liability Insurance Agency proposed to adopt a new rule establishing the state financial assurance program for owners and operators of petroleum USTs. The rule would establish criteria and procedures for the payment of costs from the program to remediate contamination caused by releases from petroleum USTs in addition to program eligibility and coverage limits for owners and operators of commercial petroleum UST systems seeking an alternative financial responsibility mechanism. *See* https://lawfilesext.leg.wa.gov/law/wsr/2024/12/24-12-082.htm (June 4, 2024).

WATER

The Department of Ecology proposed amendments to the state's surface water quality standards. The amendments would, among other things, add definitions for a performance-based approach method and local and regional sources of human-caused pollution, update aquatic life criteria for temperature and dissolved oxygen, and update natural conditions criteria. *See* https://lawfilesext.leg.wa.gov/law/wsr/2024/11/24-11-047.htm (May 10, 2024).

WILDLIFE

The Department of Fish and Wildlife adopted amendments to regulations governing hydraulic project approval permits. The amendments incorporate standards for the containment of foam flotation from SHB 1085 and remove erroneous language regarding plastic "wrap." *See* https://lawfilesext.leg.wa.gov/law/wsr/2024/12/24-12-003.htm (May 22, 2024).

In the World

"In the World" features notable developments reported in the international section of *ELR Update* during the month of June 2024. Current and archived materials, and links to primary news sources, can be found on *ELR*'s website at https://elr.info/international/international-update.

CLIMATE CHANGE

UN CHIEF URGES URGENT CLIMATE ACTION, PROPOSES FOSSIL FUEL TAX

United Nations (U.N.) Secretary-General António Guterres called for urgent action on climate change by proposing a "windfall" tax on profits of fossil fuel companies in a speech in New York on World Environment Day (AP, Reuters). He labeled these companies the "godfathers of climate chaos," emphasizing the need to prioritize the fight against global warming amidst elections and conflicts in various regions (AP). Guterres cited data showing record-breaking temperatures and projected future increases, stressing that human activity, particularly the burning of fossil fuels, is the primary driver of global warming (Reuters).

Despite global agreements to curb emissions, carbon dioxide levels hit record highs in 2023, emphasizing that the world is "way off track" from its goal of limiting warming to 1.5 degrees Celsius, as outlined in the Paris Accord (Reuters). Guterres warned of significant economic losses, ecological damage, and threats to human life and biodiversity if action is not taken promptly (AP, Reuters). The Secretary-General also called for media and technology companies to stop advertising from fossil fuel corporations and criticized government subsidies to the industry. He emphasized the necessity of reducing carbon emissions rapidly to meet the Paris targets (AP, Reuters).

Guterres highlighted the importance of global finance and called for innovative funding sources to support climate action. His remarks coincide with increased scrutiny of the oil and gas industry's actions by activist shareholders and lawmakers, particularly in the United States. He urged banks and investors to transition funding from fossil fuels to clean energy, and advocated for implementing carbon prices and ending fossil fuel subsidies to finance climate action initiatives (Reuters).

Guterres outlined priorities for the next 18 months, including emissions reduction, climate finance, and protection against climate extremes. He reiterated calls for taxing fossil fuel companies' windfall profits and redirecting subsidies toward clean energy and climate resilience measures, emphasizing that climate finance is essential for a sustainable future (AP, Reuters).

SWISS PARLIAMENT REJECTS EUROPEAN COURT CLIMATE DEMANDS

On June 12, the lower house of the Swiss parliament rejected a ruling from the European Court of Human Rights (ECHR) that ordered Switzerland to take stronger measures against climate change (BBC, Reuters). In April, the court held that the city of Bern had violated the human rights of a group of older Swiss women by failing to address climate change.

Lawmakers criticized the court's decision as overreach, arguing that Switzerland was already taking sufficient action against climate change, despite warming at a rate double the global average (Reuters). The decision sparked emotional debates, with some politicians criticizing the perceived interference by "foreign judges," while others viewed it as a populist move (BBC, Reuters). Despite concerns about Switzerland's failure to meet its climate goals, many Swiss citizens supported the parliament's decision, reflecting the country's pride in its system of direct democracy (BBC).

The final decision on compliance rests with the Swiss government, and is expected to be announced in August (BBC). The ECHR ruling did not prescribe specific actions, but called for Switzerland to take further steps to address climate change (BBC). The government may offer a compromise to the court, highlighting measures taken since the case's inception. If not accepted, the plaintiffs, known as "climate seniors," may consider returning to court (BBC). This incident highlighted the growing tension between national sovereignty and global efforts to address climate change, amidst a backdrop of increasing far-right influence in European politics.

EU CITIES COMMIT TO NET-ZERO EMISSIONS BY 2030, SEEK $695 BILLION IN INVESTMENT

A coalition of 112 cities across Europe pledged to achieve net-zero greenhouse gas emissions by 2030, a goal that surpasses the targets set by most national governments (Reuters, europa). This ambitious initiative, part of the European Union's (EU's) "100 Climate Neutral and Smart Cities'

Mission," would require a staggering $695 billion in investments, according to a statement released by EU officials on June 26 (Reuters).

Out of 377 cities that applied to join the program, 100 from EU Member States and an additional 12 from associated countries were selected to participate (Reuters, europa). Each city is developing a detailed climate action plan with support from the EU and nonprofit advisory firm Bankers Without Boundaries. These plans are scrutinized by the European Commission and independent experts before cities receive formal approval (Reuters).

Thirty-three cities, including Lyon, Seville, Malmö, Lisbon, and Florence, had their plans endorsed. Projects under consideration included upgrading buildings for energy efficiency and bolstering infrastructure to withstand severe weather events exacerbated by climate change (Reuters). Recognizing the need for substantial financial backing, the EU launched a "Climate City Capital Hub" aimed at leveraging national guarantees to attract private-sector investments. The initiative sought to pool resources for smaller projects that might struggle to secure funding individually (europa).

Cities are identified as major contributors to global carbon dioxide emissions, accounting for 70% of the world's total (Reuters). They also face heightened risks from climate impacts, particularly in urban "heat islands" where densely packed infrastructure exacerbates heat-related health risks. The European Investment Bank committed to supporting these efforts with financial and technical advice, underlining its role as Europe's climate bank (Reuters).

RECENT JOURNAL LITERATURE

"Recent Journal Literature" lists recently published law review and other legal periodical articles. Within subject-matter categories, entries are listed alphabetically by author or title. Articles are listed first, followed by comments, notes, symposia, surveys, and bibliographies.

AIR

Al-Hajjaji, Shams, *Coastal State vs. Flag State: Countries' Mitigation of Environmental Harm From Scrubbers?*, 47 Tul. Mar. L.J. 185 (2023).

Burns, Wil, *Governance of Ocean-Based Carbon Dioxide Removal Research Under the United Nations Convention on the Law of the Sea*, 75 Me. L. Rev. 37 (2023).

Davis, Bryce A., *A Climate Solution on Shaky Ground: The Voluntary Carbon Market and Agricultural Sequestration*, 2023 U. Ill. L. Rev. 955 (2023).

Dominioni, Goran & Daniel C. Esty, *Designing Effective Border Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, 54 ELR 10686 (Aug. 2024).

Esty, Daniel C. & Nathan de Arriba-Sellier, *Zeroing in on Net-Zero: From Soft Law to Hard Law in Corporate Climate Pledges*, 94 U. Colo. L. Rev. 635 (2023).

Everhart, Sarah, *Growing Carbon Credits: Strengthening the Agricultural Sector's Participation in Voluntary Carbon Markets Through Law and Policy*, 31 N.Y.U. Env't L.J. 65 (2023).

Ozymy, Joshua & Melissa Jarrell Ozymy, *The Politics of the Criminal Enforcement of the U.S. Clean Air Act*, 47 Wm. & Mary Env't L. & Pol'y Rev. 197 (2022).

Spiegel-Feld, Danielle, *Frontiers in Regulating Building Emissions: An Agenda for Cities*, 47 Wm. & Mary Env't L. & Pol'y Rev. 103 (2022).

CLIMATE CHANGE

Dilling, Lisa, *Nudge Strategies: The Need for a Systematic Approach*, 54 ELR 10644 (Aug. 2024).

Hirst, Scott, *Saving Climate Disclosure*, 28 Stan. J.L. Bus. & Fin. 92 (2023).

Metcalf, Cherie & Jonathan R. Nash, *Beliefs, Information, and Institutions: Perception of Climate Change Information Provided by Government Versus the Market*, 47 Wm. & Mary Env't L. & Pol'y Rev. 1 (2022).

Mormann, Felix, *Climate Choice Architecture*, 54 ELR 10638 (Aug. 2024).

Narang, Anjali, *Optimizing Nudges for Climate Change: Insights From Behavioral and Environmental Economics*, 54 ELR 10646 (Aug. 2024).

Rossi, Jim & J.B. Ruhl, *Adapting Private Law for Climate Change Adaptation*, 76 Vand. L. Rev. 827 (2023).

Scott, Tabitha A., *Leveraging Climate Choice Architecture for Effective Behavior Change*, 54 ELR 10649 (Aug. 2024).

Spencer, Elizabeth & Chris McGrath, *Currents of Change in Climate Litigation in Australia*, 47 Wm. & Mary Env't L. & Pol'y Rev. 121 (2022).

Stump, Nicholas F., *COVID, Climate Change, and Transformative Social Justice: A Critical Legal Research Exploration*, 47 Wm. & Mary Env't L. & Pol'y Rev. 147 (2022).

Sussman, Reuven, *Choice Architecture Is One Piece of the Climate Action Puzzle*, 54 ELR 10652 (Aug. 2024).

Wold-McGimsey, Jack, *Climate Change and Modern State Common Law Nuisance and Trespass Tort Claims*, 94 U. Colo. L. Rev. 815 (2023).

Symposium, *The "E" in ESG*, 56 UC Davis L. Rev. 1875 (2023).

ENERGY

Aagaard, Todd, *24/7 Clean Energy*, 94 U. Colo. L. Rev. 571 (2023).

Clark, Hilary, *Reinforcing the Positive Benefits and Attitudes*, 54 ELR 10662 (Aug. 2024).

Eisen, Joel B. & Heather E. Payne, *Rebuilding Grid Governance*, 48 BYU L. Rev. 1057 (2023).

Guruswamy, Lakshman & Jenna Trost, *Legislation Codifying Energy Justice: Access to Energy for Drinking Water, Sanitation, and Agriculture*, 44 U. Haw. L. Rev. 204 (2022).

Hammond, Scarlett, *How Can Oil End the Venezuelan Presidential Crisis?*, 31 Tul. J. Int'l & Comp. L. 205 (2023).

Hersom, Andrew D., *Our Biggest Fans: Nuisance Immunity for Grid-Scale Wind Energy Projects in Maine*, 75 Me. L. Rev. 117 (2023).

Lantz, Eric, *Broad Understanding as a Starting Point for Constructive Solutions for Siting Wind Energy Projects*, 54 ELR 10664 (Aug. 2024).

Mandelbaum, Josh, *Principles for Siting Renewable Energy Projects. A Response to* Deals in the Heartland, 54 ELR 10667 (Aug. 2024).

McLean, Christopher, *Comment on* Deals in the Heartland: Renewable Energy Projects, Local Resistance, and How Law Can Help, 54 ELR 10670 (Aug. 2024).

Ochoa, Christiana et al., *Deals in the Heartland: Renewable Energy Projects, Local Resistance, and How Law Can Help*, 54 ELR 10654 (Aug. 2024).

Sourgens, Frederic Gilles, *The Dark Sun Network*, 94 U. Colo. L. Rev. 681 (2023).

Walters, Daniel E. & Andrew N. Kleit, *Grid Governance in the Energy-Trilemma Era: Remedying the Democracy Deficit*, 74 Ala. L. Rev. 1033 (2023).

Weisbach, David & Sam Kortum, *Climate Change Policy in the International Context: Solving the Carbon Leakage Problem*, 31 N.Y.U. Env't L.J. 1 (2023).

GOVERNANCE

Anderson, Jerry L. & Amy Grace Vaughan, *Environmental Penalties: Discretion and Disparity*, 42 Stan. Env't L.J. 3 (2023).

Babcock, Sara C., *Death by Committee: Reviving Federal Environmental Justice Legislation to Mitigate Disproportionate Impacts on Vulnerable Communities*, 40 Pace Env't L. Rev. 1 (2022-2023).

Bereday, Halina R., West Virginia v. EPA: *Majorly Questioning Administrative Agency Action and Authority*, 82 Md. L. Rev. 820 (2023).

Breggin, Linda et al., *Analysis of Environmental Law Scholarship: 2022-2023*, 54 ELR 10631 (Aug. 2024).

Cruden, John, *Implementing Environmental Laws: "Negotiating Everything,"* 54 ELR 10679 (Aug. 2024).

Davila, Sarah A., *The Escaza Agreement: The Last Piece of the Tripartite Normative Framework in the Right to a Healthy Environment*, 42 Stan. Env't L.J. 63 (2023).

Grumbles, Ben, *The Art and Science of Environmental Negotiation*, 54 ELR 10682 (Aug. 2024).

Kakade, Seema, *Environmental Evidence*, 94 U. Colo. L. Rev. 757 (2023).

Landzert, John, *Green New Appeal?: The Due Process Clause as a Defense Against State Preemption of Municipal Environmental Laws*, 64 B.C. L. Rev. 1243 (2023).

Losito, Logan J., *Decentralizing Sustainably—How Blockchain Can Benefit Environmental Goals*, 47 Wm. & Mary Env't L. & Pol'y Rev. 249 (2022).

Maratos, Alexa, *The Fast Fashion Industry: Formulating the Future of Environmental Change*, 40 Pace Env't L. Rev. 137 (2022-2023).

McGarity, Thomas O., *The Major Questions Wrecking Ball*, 41 Va. Env't L.J. 1 (2023).

Munhoz, Leonardo, *The Brazilian Environmental Regulatory Framework and the Paris Agreement: Challenges for the Forest Code as a Tool to Tackle Climate Change*, 44 U. Haw. L. Rev. 263 (2022).

Owen, Dave, *The Negotiable Implementation of Environmental Law*, 54 ELR 10673 (Aug. 2024).

Patton, Vickie, *Protecting All People From Pollution in a Pluralistic Society*, 54 ELR 10684 (Aug. 2024).

Rule, Troy, *Positive-Sum Water-Energy-Food Nexus Governance*, 31 N.Y.U. Env't L.J. 117 (2023).

LAND USE

Elefante, Leah M., *Serving Up the Truth on America's Failing Organic Food System*, 88 Brook. L. Rev. 887 (2023).

Gocke, Alison, *A Tale of Two Delegations: Some Reflections on* Penn East, 41 Va. Env't L.J. 62 (2023).

Wright, Callah, *Smells Like Money: A Proposal to Re-Examine the Illinois Right-to-Farm Act*, 47 S. Ill. U. L.J. 411 (2023).

NATURAL RESOURCES

Halbleib, Kasha, *Examining Uranium Mining in the Canyon Mine*, 40 Pace Env't L. Rev. 104 (2022-2023).

Putfark, Elizabeth, *Wood Pellets, Carbon Credits, and When One Problem Solves Another*, 41 Va. Env't L.J. 86 (2023).

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Carey, Molly, *Fatal Fertilizer: PFAS Contamination of Farmland From Biosolids and Potential Federal Solutions*, 40 Pace Env't L. Rev. 29 (2022-2023).

WATER

Birchfield, Thomas, *China's Maritime Traffic Safety Law May Disrupt the Established Global Rules-Based Maritime Order of UNCLOS*, 47 Tul. Mar. L.J. 267 (2023).

Casco, Hi'ilei K. et al., *Water and Justice for Maui's Communities: Lessons and Lasting Impacts From a Decade of Litigating* Maui County v. Hawai'i Wildlife Fund, 44 U. Haw. L. Rev. 345 (2022).

Lu'uwai, Kaulu, Ho'okahe Wai: *An Analysis of a Proposed Exemption From Hawai'i's Water Leasing Process for Kalo Farming and Consistency With Hawai'i's Public Trust Doctrine*, 44 U. Haw. L. Rev. 145 (2022).

Ness, Susan Emily, *Water We Cannot See: Codifying a Progressive Public Trust to Protect Groundwater Resources From Depletion*, 76 Vand. L. Rev. 953 (2023).

WILDLIFE

Coccoli, Andrew, *Could a More Limited Environmental Goods Agreement Resolve Continued Issues in CITES Compliance?*, 47 Wm. & Mary Env't L. & Pol'y Rev. 283 (2022).

Robertson, Hannah M., *A Proposed Tourism Cap on the Galapagos Islands: Beyond the Wildlife*, 47 Wm. & Mary Env't L. & Pol'y Rev. 225 (2022).

Soinski, Saylor S., *Repatriating the Buffalo: NAGPRA's Applicability to Yellowstone Bison Management*, 40 Pace Env't L. Rev. 173 (2022-2023).

VOLUME 54 CUMULATIVE INDEX

Below are all Articles, Comments, and Dialogues published in *ELR—The Environmental Law Reporter* in 2024. To access the entire *ELR* archive online, visit https://elr.info/articles.

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TOXIC SUBSTANCES

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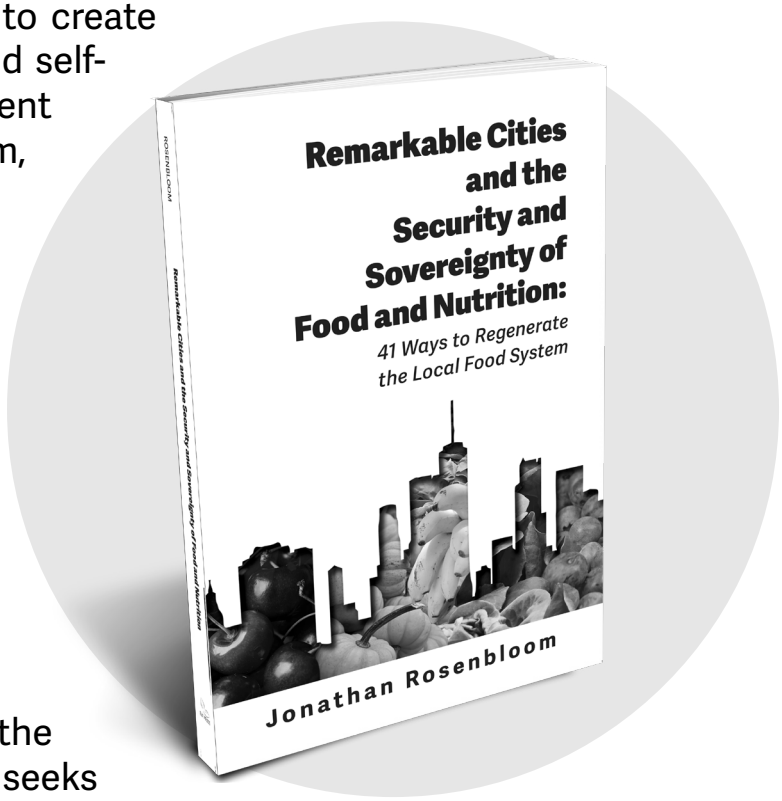
Remarkable Cities and the Security and Sovereignty of Food and Nutrition:

41 Ways to Regenerate the Local Food System

by Jonathan Rosenbloom

Development is not sustainable if it fails to create and support food and nutrition secure and self-supporting neighborhoods. Development impacts many aspects of the food system, including where food is grown, how far food must travel before it is consumed, where distributors and retailers of food are placed, and who has access to fresh and nutritious food. By viewing development and its associated impacts through a sustainability lens, we can rethink the role of development and how communities can grow while fostering a strong, inclusive, affordable, accessible, and healthy food system.



This book, the second in a series under the Sustainability Development Code project, seeks to jumpstart a move toward healthier, more equitable, and more environmentally friendly communities. Examining the way local governments regulate development and how that impacts the food system, the book offers 41 recommendations to amend development codes to increase food and nutrition security and sovereignty and create healthier communities.

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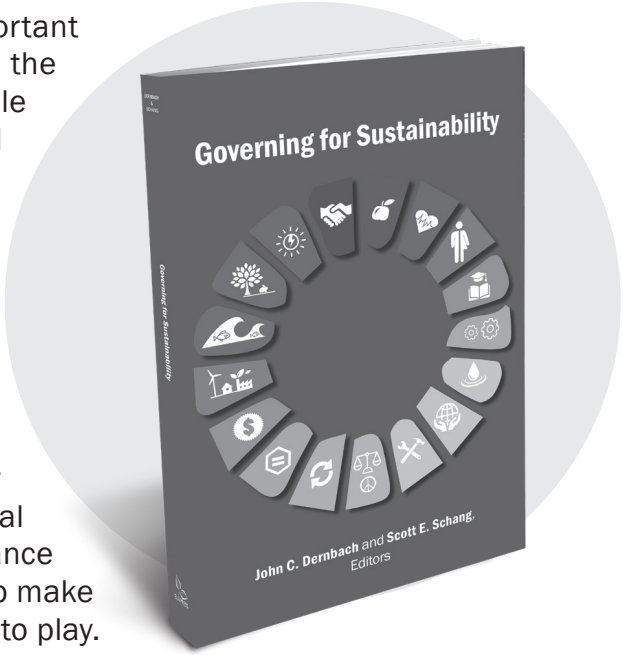
Governing for Sustainability

John C. Dernbach and **Scott E. Schang**
Editors

Sustainable development may be one of the most important and potentially transformational ideas to come out of the last century. The ultimate objectives of sustainable development are freedom, opportunity, justice, and quality of life for everyone in this and future generations. While the United States has a substantial body of environmental and social protection laws, we are far from being a sustainable society. The question is what to do.



Governing for Sustainability provides a detailed set of recommendations for federal, state, tribal, territorial, and local governments, as well as the private sector and civil society. The various contributions that personal behavior can make toward both public and private governance are included as well. These recommendations would help make America a better place for all. Every American has a role to play.

Dernbach and Schang have brought together a rich, diverse set of voices to outline how the United States can build a more sustainable economy and society. Small-gauge sustainability targets are not enough. As with recent administrative and legislative breakthroughs in climate, leaders can and must craft solutions that simultaneously advance multiple sustainability goals such as job creation and economic growth, public health, and social justice.

—David Hayes, Lecturer, Stanford Law School; former Special Assistant to the President for Climate Policy; and former Deputy Secretary of the Interior

Governing for Sustainability *offers an inspired, timely, and important roadmap for meeting the wide ranging political, economic, and social justice challenges our nation faces in achieving sustainability. Each chapter, authored by one or more of the nation's leading experts, is a treasure to be mined.*

—Richard Lazarus, Howard J. and Katherine W. Aibel Professor of Law, Harvard Law School

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