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Presentation

The objective of the “French Yearbook of Public Law” is to narrow the gap which has tended to develop between the French and the international debate on public law. The former remains too often isolated from the latter, for various reasons, ranging from the conviction of the French model’s exemplary nature to an insufficient openness of French public lawyers to the international academic language, which English has undoubtedly become nowadays. This has two serious consequences. On the one hand French lawyers might often be unaware of developments in other legal systems, and on the other hand foreign lawyers face serious difficulties to follow French legal developments.

The French Yearbook of Public Law (FYPL) was created to mitigate precisely this mutual ignorance. This project has three main aims. On the one hand, it seeks to apprise English-speaking readers of important developments and scholarly debates in French public law. On the other hand, we wish to introduce French lawyers to key changes and academic discussions in foreign public laws. Lastly, it is our hope that the reciprocal information thus made available will foster international and comparative debates among legal scholars.

The FYPL is based at the Chair of French Public Law at Saarland University (Lehrstuhl für französisches öffentliches Recht - LFOER), headed by Professor Philippe Cossalter. Thus, the FYPL relies on the administrative and technical capacities of the LFOER without constituting a segment of it. Some of its researchers (Jasmin Hiry-Lesch, Enrico Buono, Sofia van der Reis, Lucca Kaltenecker) are especially involved.

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America's climate change policy: Federalism in action

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Abstract:

This article provides a survey of the diverse approaches adopted by various states and municipalities in the United States to address climate change, highlighting their role in driving progress despite federal gridlock. It also examines the challenges that arise due to the absence of national leadership, particularly the potential for regulatory competition among subnational jurisdictions to undermine the competitiveness of climate change leaders.

Part I outlines the American policymaking landscape, emphasizing the decentralized nature of the political system that empowers governors and mayors as climate change leaders and innovators. Part II catalogs the array of climate change policy tools employed by state and municipal governments, including greenhouse gas reduction targets, renewable energy standards, regional greenhouse gas pricing initiatives, public utility regulation, and state-level clean energy incentives. Part III delves into the political strategies underpinning these policymaking efforts, such as interstate agreements, private litigation, and state constitutional amendments.

Part IV raises concerns about the potential for multi-layer governance to impede policy progress, particularly in the context of deep national divisions on climate change.

Part V offers reflections on the advantages and disadvantages of the U.S. federalism model in addressing climate change, providing valuable insights into the intricate landscape of climate governance in the United States.

Keywords:

U.S. Environmental law, Climate governance, U.S. federalism

Introduction

Climate change presents an especially challenging policy problem with global scope, a multi-generational timeframe, and an extensive array of greenhouse gas (GHG)-emitting activities that must be addressed including power generation; transportation; the manufacturing; production, packaging, and distribution of goods; the heating, cooling, and lighting of buildings; agriculture, and land use. This scope demands a comprehensive policy that cuts across all departments of national governments (thus *horizontally* broad) and from policymakers at all levels of government—from global to local (thus *vertically* deep).¹ The ambitions articulated in the 2015 Paris Climate Accord and reiterated in the 2021 Glasgow Climate Pact lay out the steps necessary to avert the worst impacts of climate change and to avoid transgressing other planetary boundaries.² Across the world, progress on these goals has proceeded unevenly and inconsistently—with some countries offering leading-edge strategies and real GHG emissions control commitment and others lagging in both climate change vision and execution.³

In the United States, the same pattern of leading and lagging jurisdictions emerges across the sub-national governments, including 50 states and thousands of local governments. This multi-layered governance structure (often described as *federalism*) is both a strength and a weakness in terms of governance in general and the nation's ability to respond to climate change in particular. The multiple actors and institutional power centers make unified action harder to achieve, but the diversity of political leaders in power at the federal, state, and local levels at any time – each with their own zone of authority – diversifies the nation's policymaking structure and can serve as a backstop against policy failure. Specifically, when one layer of government or set of officials falters in response to a critical challenge, others will be positioned to take up the slack and advance the policy agenda within their own jurisdictions.

Indeed, the U.S. federal government has been hampered in its ability to respond to climate change over the past several decades by deep political divisions that have been extensively documented. In particular, while the 2015 Paris Climate Change Agreement galvanized policy action many nations, the redoubling of the global commitment to reduce GHGs occurred at a challenging moment in American politics. Barack Obama was in the twilight of his presidency, and his party had fallen into a minority position in both houses of Congress. And just days after the Paris Accord came into effect, Donald Trump was elected President, having campaigned on a platform that called climate change a hoax. Trump wasted no time in announcing that the United States would withdraw from the 2015 Paris Agreement—and his Administration backed up that commitment by backtracking on the Obama administration's environmental regulatory program, including the *Clean Power Plan*, meant to ensure the emissions reductions to which the United States had committed under its Paris Agreement *nationally determined contri-*

1 Esty, D.C. & Geradin, D., "Regulatory Co-Opetition", *Journal of International Economic Law* 2000, vol. 3, issue 2, pp. 235- 255.

2 See Rockström, J. et al., "Planetary Boundaries: Exploring the Safe Operating Space for Humanity", *Ecology & Society* 2009, vol. 14, issue 2, 1-33, p. 32. See also Rockström, J., *Big World, Small Planet*, 2015, Yale University Press.

3 See "Environmental Performance Index 2020," Yale Center for Environmental Law & Society. Available at: <https://envirocenter.yale.edu/2020-environmental-performance-index> (last visited 10 november 2022).

bution to global climate change action.⁴

In many countries, the inauguration of a government hostile to any meaningful action to combat climate change would spell the end of forward-thinking environmental policymaking in that nation – at least for that election cycle. But policy progress in the United States is determined not only by the direction set by the president but also by the policy choices and political leadership of governors and mayors. While the federal government has an outsized role in establishing the contours of environmental policy, sub-national governments—namely, states and municipalities—play a significant role in determining the direction and vigor of environmental protection efforts including GHG emissions control.

During the four years of the Trump administration, many states and municipalities pursued aggressive environmental policies and forward-leaning climate change policies—countering the weak commitment to action at the federal level. Ten states, as well as nearly three hundred cities and counties, joined the *We Are Still In Coalition* of entities committed to honoring the U.S. commitment to the 2015 Paris Accord. Many of those same states repeatedly sued the federal government to stop the rollback of environmental regulations and to protect their freedom to set standards higher than the federal government proposed. Many governors and mayors stepped up to the climate change challenge and undertook extensive efforts in their states and cities to expand renewable electricity generation, promote energy efficiency, develop adaptation plans, and invest in resiliency in the face of rising risk from climate change.

The election of Joe Biden as President in 2020 delivered not just a new President, but a new approach to environmental policymaking at the federal level. President Biden announced what he called an “all of government” approach to climate change, which sought to link together the different departments and policy tools of the federal government to develop a broad-gauge and cohesive response to climate change. While the new Administration was able to rally a bipartisan majority of the Congress to pass major infrastructure legislation – which includes investments in public transportation and infrastructure resilience – Congress remained deeply divided over the Biden Administration’s “Build Back Better” agenda that proposed to spend half a trillion dollars to advance the U.S. transition to a clean energy future.

Recognizing the limited potential for climate change policy progress in Washington, many governors and mayors continued to chart their own course on climate change and blaze paths toward deep decarbonization. This article surveys the approaches taken by different states and municipalities across the United States and explores how these initiatives have helped to ensure a measure of climate change progress despite gridlock in Washington. But it also highlights the challenges that arise when national leadership is lacking – noting in particular that *regulatory competition* across the subnational jurisdictions may undermine the competitiveness of the states and cities that have staked out climate change leadership positions.

Part I offers an overview of the policymaking landscape in the United States, focusing specifically on the unique features of the American political system that encourage the diffusion of power across several different levels of government—positioning governors and mayors to be climate change leaders and policy innovators. In Part II catalogues the

⁴ Sourgens, F.G., “The Paris Paradigm”, *University of Illinois Law Review* 2019, vol. 2019, issue 5, pp. 1637-1700; Davis Noll, B.A. & Revesz, R.L., “Regulation in Transition”, *Minnesota Law Review* 2019, vol. 104, issue 1.

climate change policy tools used by state and municipal governments across the country, focusing primarily on greenhouse gas reduction targets, renewable energy standards, regional GHG pricing initiatives, and public utility regulation, as well as state government clean energy incentives and financing. Part III explores the broader political strategies behind different policymaking efforts—including interstate agreements and coalitions, private litigation, and state constitutional amendments. Part IV acknowledges the risk that multi-layer governance will slow – rather than advance – policy progress and may result in policy stasis when the nation is deeply divided on an issue as it has been for several decades with regard to climate change. Part V concludes with some reflections on the advantages and disadvantages of America’s *federalism* in the climate change context.

I. America’s *federalist* policymaking landscape

Before jumping into the specific policies enacted, and strategies pursued, by state and local governments in the United States in response to climate change, some notes about the American political system and policymaking structure are in order. Most notably, America’s *federalism* distributes power among federal, state, and local governments in a unique and rather complex fashion that results in a policymaking process that is *highly diffuse, deeply democratic*, and in *constant flux* – as policy leadership ebbs and flows across these multiple levels of decision-making and authority.

America’s policymaking structure is highly diffuse in that authority is distributed both vertically (among agencies and departments at the same level of government) and horizontally (among different governments at the federal, state, and local levels).⁵ At the national level, environmental policy is shaped by a number of federal agencies, departments, and commissions—including the Environmental Protection Agency, the Department of the Interior, the Department of Energy, the National Oceanic and Atmospheric Administration, Federal Energy Regulatory Commission, and (perhaps surprisingly) the Department of Defense – not to mention the energy and environmental advisors within the White House. A similar horizontal distribution of power exists at the state and local levels with state-level departments of environmental protection, energy officials, natural resource management agencies, and public utility commissions jockeying for policy leadership and influence – under the direction of a governor and their political team.

Note, however, that at the state and local levels, there are considerably more divisions of government that make and set policy. Not only is there an overarching *state* government, but in most states, there are also *county* and *city* (collectively, *municipal*) governments. And some states have authorized *special districts* that transcend city and county boundaries and provide services and governance functions – such as schools, water supply, electricity, sewage treatment, or waste management – in a particular geographic area.⁶ In some places, these special districts play a critical role in developing local responses to climate change—and are worth noting as key environmental policymakers.⁷

5 See, e.g., Esty, D.C. & Geradin, D. (2000), op. cit.; Esty, D.C. & Geradin, D., *Regulatory Competition and Economic Integration: Comparative Perspectives*, 2001, Oxford, Oxford University Press.

6 Mullin, M., *Governing the Tap: Special District Governance and the New Local Politics of Water*, 2009, MIT, MIT Press, pp. 191–93.

7 Ibid.

Relatedly, the vertical and horizontal distribution of policymaking authority in the United States is constantly in flux—as political leadership changes with each election cycle and dominant personalities come and go. This fluid leadership structure layers even more complexity onto an already-complicated system. On some issues (but not all) higher-level governments have the power to *pre-empt* lower-level government policymaking. The conditions under which the federal government can pre-empt state governments are complicated (and outside the scope of this article), but worth noting nonetheless.⁸ At the state level, local governments like counties and cities are considered to be *creatures of the state*—that is, that they exist only by virtue of the state government that authorized their existence and delegated certain powers to them. The supremacy of state government over local government allows the state government (in most cases) to both invalidate locally determined policies and to ban localities from setting certain kinds of policies, including environmental policies.⁹

II. State and municipal climate change governance

In 1932, Supreme Court Justice Louis Brandeis coined the term “laboratory of democracy”—referring to the possibility that particular U.S. states might adopt “novel social and economic experiments without risk to the rest of the country.”¹⁰ The vision of fifty states trying out different policy approaches to a problem and providing a test bed for a range of strategies and technologies has had enduring impact – including on America’s response to climate change.

Although the history of state-level environmental regulation goes back to the 1950s and 1960s, state-level climate change governance traces back to the early 2000s, when a number of states began adopting individual and collective policies to combat climate change in the face of perceived federal inaction. And in the past 15 years, states have begun to assert themselves in the realm of energy policy—an area previously understood to be in the domain of the federal government. Once again, this sub-national leadership can be traced to frustration with the perceived failures of the federal government to adequately promote the expansion of renewable power and energy efficiency. In recent years, sub-national climate change policies have grown more ambitious and encompassing—and have been adopted with enthusiasm by more states (and cities) around the country. Though many of the conversations taking place today in sub-national policy circles still center on direct ways to reduce GHG emissions, the initiatives have also begun to encompass indirect efforts to use state powers to drive climate change progress. For example, a number of states have started to put environmental/social/governance (ESG) screens on their pension fund investments—aiming to spur the private sector to-

8 See Weiland, P.S., “Federal and State Preemption of Environmental Law: A Critical Analysis”, *Harvard Environmental Law Review* 2000, vol. 24, pp. 237-86. For an example of how federal environmental law can preempt state-level environmental regulations, see United States Court of Appeals for the Second Circuit, 1 Aug. 2003, F.3d 388, 82, *Clean Air Markets Group v. Pataki* (striking down New York’s restriction on acid-rain cap-and-trade system under federal preemption).

9 Turner, A., “When State Preemption of Local Climate Laws Undermines Equity”, Columbia Law School Sabin Center for Climate Change Law: Climate Law Blog, 5 March 2021. Available at: <http://blogs.law.columbia.edu/climatechange/2021/03/05/when-state-preemption-of-local-climate-laws-undermines-equity/>.

10 SCOTUS, 21 March 1932, U.S. 285, 262, *New State Ice Company v. Liebmann*.

ward more meaningful, climate-conscious business models. In this Part, we explore climate change governance, adaptation, and resilience policies in a series of distinct, but interrelated, areas: (a) greenhouse gas emissions regulations; (b) renewable energy standards; (c) use of various state government tools to align finance with sustainability goals; (d) the adoption of *green banks* by some states and cities to flow resources to energy efficiency and clean energy infrastructure; and (e) city-scale climate change programs.

A. State Efforts to Reduce Greenhouse Gas Emissions

In the early 2000s, with prospects for bold environmental policies at the federal level dimmed by the George W. Bush Administration’s ongoing commitment to fossil fuel extraction, a coalition of states sued the federal government to force a more robust response to climate change. This litigation, which came to be known as *Massachusetts v. EPA*, culminated in 2007 with the U.S. Supreme Court ordering the EPA to reconsider its decision not to regulate GHGs.¹¹

But the Bush Administration’s reluctance to combat climate change and the trouble the Obama Administration had in the following years galvanizing congressional majorities for real climate change action, opened the door to subnational leadership. Indeed, as of 2022, 23 states and the District of Columbia have adopted GHG reduction targets as have more than 600 municipalities.¹² Two efforts are worth special mention: (a) the Regional Greenhouse Gas Initiative (RGGI) and (b) the California Global Warming Solutions Act.

In 2005, a group of Mid-Atlantic and New England states created RGGI, “the first mandatory cap-and-trade program for carbon dioxide in the U.S.”¹³ On the opposite side of the country, California adopted the Global Warming Solutions Act of 2006, which required an 80% reduction from 1990 levels in greenhouse gas (GHG) emissions by 2050—and empowered the California Air Resources Board to set up a cap-and-trade regime to deliver the mandated GHG reductions.¹⁴

1. Regional Greenhouse Gas Initiative (and Other Regional Efforts)

RGGI—which currently includes the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia—is designed to reduce carbon emissions from the power sector by setting emissions-reduction targets and issuing carbon dioxide *allowances* based on those targets. Allowances are sold to power plants at quarterly regional auctions – and can be traded and

11 See SCOTUS, 2 April 2007, U.S. 549, 497, *Massachusetts v. Environmental Protection Agency*.

12 See, e.g., “U.S. State Greenhouse Gas Emissions Targets”, Center for Climate Change & Energy Solutions, March 2021. Available at: <https://www.c2es.org/document/greenhouse-gas-emissions-targets/>; Pulver, D.V., Bowman, S. & Wilson, J., “Hundreds of Cities Have Adopted Climate Plans”, USA Today, 10 Aug. 2021. Available at: <https://eu.usatoday.com/story/news/investigations/2021/08/10/hundreds-u-s-cities-already-adopted-climate-plans-what-happened/5541049001/>.

13 Thompson, V.E. & Arroyo, V., “Upside-Down Cooperative Federalism: Climate Change Policymaking and the States”, *Virginia Environmental Law Review* 2011, vol. 29, issue 1.

14 Nichols, M.D., “California’s Climate Change Program: Lessons for the Nation”, *Journal of Environmental Law and Policy* 2009, vol. 27, issue 2, pp. 185-212.

resold on secondary markets. State proceeds from the allowances are, in turn, directed to improving energy efficiency and increasing the availability of renewable energy.¹⁵ The allowances are also subject to some fluidity based on market forces. If the trading prices of allowances exceed a built-in maximum—which, in 2021, was set at 13 USD per allowance—then additional allowances will be released from the Cost Containment Reserve to avoid a dramatic increase in energy prices. Alternatively, if trading prices fall below a built-in *minimum*—set at 6 USD per allowance in 2021—then allowances will be removed from the market to the Emissions Containment Reserve – thus establishing a price floor.

Participation in RGGI has ebbed and flowed based on political developments in the current and prospective member states. Though New Jersey was one of the original members of RGGI, the defeat of Democratic Governor Jon Corzine for re-election in 2009 by Republican Chris Christie subsequently resulted in New Jersey’s withdrawal from the Initiative.¹⁶ Likewise, the election of Democrat Phil Murphy as Christie’s successor in 2017 resulted in New Jersey’s *re*-entrance.¹⁷ In Virginia, Ralph Northam’s election as Governor in 2017, followed by Democratic control of the state legislature in the 2019 elections, resulted in its joining RGGI, as well¹⁸—but Virginia’s participation has been reversed by Republican Glenn Youngkin, who was elected Governor in 2021.¹⁹ But participation does not always follow party lines. For example, the election of moderate Republicans Larry Hogan and Charlie Baker as governors of Maryland and Massachusetts, respectively, in 2014 did not meaningfully alter their states’ participation in RGGI; both continued to push for further cuts in carbon emissions.²⁰

Policy analyses have shown that RGGI has resulted in lower carbon emissions in member states without substantial increases in the energy prices enjoyed by consumers.²¹ The

15 “Elements of RGGI”, Regional Greenhouse Gas Initiative, 2022. Available at: <https://www.rggi.org/program-overview-and-design/elements>.

16 Navarro, M., “Christie Pulls New Jersey from 10-State Climate Initiative”, New York Times, 26 May 2011. Available at: <https://www.nytimes.com/2011/05/27/nyregion/christie-pulls-nj-from-greenhouse-gas-coalition.html>.

17 Plumer, B., “New Jersey Embraces an Idea It Once Rejected: Make Utilities Pay to Emit Carbon”, New York Times, 29 Jan. 2018. Available at: <https://www.nytimes.com/2018/01/29/climate/new-jersey-cap-and-trade.html>.

18 Vogelsong, S., “Virginia Lawmakers Agreed to Join a Regional Carbon Market. Here’s What Happens Next”, Virginia Mercury, 14 April 2020. Available at: <https://www.virginiamercury.com/2020/04/14/virginia-lawmakers-agreed-to-join-a-regional-carbon-market-heres-what-happens-next/>.

19 Larsen, P., “Governor Youngkin Faces Opposition, Legal Questions Over Order to Pull VA out of Carbon Market”, Virginia Public Media, 26 Jan. 2022. Available at: <https://vpm.org/news/articles/29219/governor-youngkin-faces-opposition-legal-questions-over-order-to-pull-va-out-of>.

20 See, e.g., Abel, D., “In Landmark Agreement, Mass., Eight Other States Vow to Cut Transportation Emissions”, Boston Globe, 18 Dec. 2018. Available at: <https://www.bostonglobe.com/metro/2018/12/18/landmark-agreement-mass-eight-other-states-vow-cut-transportation-emissions/kzsX7xUw3l5R2x5AIC47UK/story.html>; Wood, P., “Maryland Joins 8 Other States in Carbon Emission Cuts”, Baltimore Sun, 23 Aug. 2017. Available at: <https://www.baltimoresun.com/news/environment/bs-md-hogan-carbon-emissions-20170823-story.html>.

21 E.g., Murray, B.C. & Maniloff, P.T., “Why Have Greenhouse Gas Emissions in RGGI States Declined? An Economic Attribution to Economic, Energy Market, and Policy Factors”, *Energy Economics* 2015, vol. 51, pp. 581-589; Hibbard, P.J., Tierney, S.F., Darling, P.G. & Cullinan, S., “The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States”, Analysis Group, April 2018. Available at: https://www.analysisgroup.com/globalassets/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_april_2018.pdf.

emissions allowance auctions have also generated billions of dollars in revenue for the RGGI state clean energy programs. However, as might be expected in a federal system like that of the United States, the creation of RGGI has resulted in some amount of *carbon leakage*²² as GHG-emitting manufacturing activities shifted from states with stricter environmental rules—like RGGI member states—to those without climate change regulations in place. A 2018 study suggested that the greenhouse gas emission reductions brought about by RGGI have been “partially offset by increase[s] in emissions” in non-member states.²³ Although RGGI did result in some amount of leakage, “the policy motivated a reduction of emissions-intensive generation in the regulated region *and* an expansion of relatively cleaner generation in the unregulated region leading to an aggregate reduction of emissions across the regulated and neighboring unregulated regions.”²⁴ The extent to which RGGI results in counterproductive carbon leakage, however, requires further study and highlights the risk of competitive disadvantage to jurisdictions that step out in front of their trade partners and competitors in terms of climate change policy commitments—a challenge the EU has also faced.²⁵

Some observers feared that RGGI might face a challenge as to its constitutionality insofar as the U.S. Constitution prohibits states from “enter[ing] into any agreement or compact with another state” without congressional permission.²⁶ But given that RGGI is entering its third decade of operation, the likelihood of such a challenge now seem unlikely. Moreover, the U.S. Supreme Court’s current test for evaluating the constitutionality of such compacts suggests that RGGI is permissible.²⁷

Despite RGGI’s success with regard to electric utilities, efforts to expand GHG pricing to other sectors across the RGGI states has faltered. In 2020, a coalition of states and municipalities tentatively agreed to form the Transportation and Climate Initiative (TCI), which would have created a similar cap-and-trade program for greenhouse gas emissions from cars.²⁸ But concerns about the effects of the initiative on fuel prices and competitiveness resulted in a number of states declining to join TCI. And in 2021, Connecticut withdrew from the Initiative,²⁹ in turn triggering withdrawals from other states and

22 Dominiononi, G. & Esty, D.C., “Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes”, *Arizona Law Review* forthcoming 2023, 53.

23 Ferll, H. & Maniloff, P., “Leakage in Regional Environmental Policy: The Case of the Regional Greenhouse Gas Initiative”, *Journal of Environmental Economics and Management* 2018, vol. 87, issue C, pp. 1-23.

24 Ibid.

25 See, e.g., Bednar-Friedl, B., Schinko, T. & Steininger K.W., “The Relevance of Process Emissions for Carbon Leakage: A Comparison of Unilateral Climate Policy Options with and without Border Carbon Adjustment”, *Energy Economics* 2012, vol. 34, issue S2, pp. S168-S180; Kama, K., “On the Borders of the Market: EU Emissions Trading, Energy Security, and the Technopolitics of ‘Carbon Leakage’”, *Geoforum* 2014, vol. 51, pp. 202-212.

26 Constitution of the United States of America, art. I, s 10, cl. 3; Ferrey, S., “Goblets of Fire: Potential Constitutional Impediments to the Regulation of Global Warming”, *Ecology Law Quarterly* 2008, vol. 35, 835-905, pp. 900-03.

27 See, e.g., “The Compact Clause and the Regional Greenhouse Gas Initiative”, *Harvard Law Review* 2007, vol. 120, 1958-1979, pp. 1960-68.

28 Storrow, B., “Northeast States Abandon Cap-and-Trade Plan for Cars”, *Energy and Environment News: ClimateWire*, 22 Nov. 2021. Available at: <https://www.eenews.net/articles/northeast-states-abandon-cap-and-trade-plan-for-cars/>.

29 Altamari, D. & Keating, C., “Gov. Lamont Says He Will No Longer Push for Climate Change Legislation That Republicans Say Could Raise Gasoline Prices”, *Hartford Courant*, 16 Nov. 2021. Available at: <https://www.courant.com/politics/hc-pol-ned-lamont-tolls-tci-20211116-q2t7u2kp7bhm3bwhktajgobsfm-story.html>.

the death of the TCI program.³⁰ The unraveling of TCI shows that Governors remain very focused on the possibility that GHG pricing initiatives will be perceived as a tax increase and further worried that burdening business with higher costs than exist in other (less climate change-minded) states will result in competitive disadvantage.

2. California's Global Warming Solutions Act(s)

As states in the Northeast banded together to form the Regional Greenhouse Gas Initiative, California charted its own path. Under the leadership of then-Governor Arnold Schwarzenegger, a Republican, the state legislature passed the Global Warming Solutions Act in 2006, which required a reduction to 1990 levels of greenhouse gas emissions by 2020—and then an 80% reduction thereafter by 2050. The legislature further strengthened its reduction targets by passing the Global Warming Solutions Act of 2016, which accelerated the timeline and required a 40% reduction of emissions by 2030.

The 2006 Act faced stiff opposition from industry groups in the state – who took their case to the public. Notably, California gives voters a potentially significant role in the legislative process—by allowing citizens to petition (by gathering signatures to put a *proposition* before the voters in the next election) for repeal of legislative enactments and to propose their own statutes. In 2010, in a show of public support for stricter environmental rules, an industry-backed effort to weaken Proposition 23 was defeated by a wide margin.

The implementation of the Act—and its supplements—has been largely placed in the hands of the California Air Resources Board (CARB), the state's air pollution control authority. In the past several decades, CARB has moved aggressively to limit greenhouse gas emissions under the leadership of its longtime chairwoman, Mary Nichols.³¹ In addition to overseeing the state's emission reduction targets generally, it has also set higher standards than the federal government for vehicle emissions. Though states are generally barred from setting emissions standards (including vehicle fuel economy requirements) more restrictive than the federal government's, the Clean Air Act expressly grants California the right to set higher standards,³² which it has repeatedly done. And when the Trump Administration tried to block California from exercising this right, California pushed back aggressively with a series of lawsuits. The transition from the Trump to Biden administrations ultimately obviated the conflict, with the EPA continuing California's waiver in 2022.³³ In further advancing the California's climate change action agenda, CARB adopted in 2019 a Tropical Forest Standard, which requires that any GHG emissions credits (intended to offset carbon dioxide emissions) used in the state's allowance trading system must comply with strict environmental safeguards.³⁴

30 Prevost, L., "Transportation Pact is Likely Totaled, But Equity Components Could Be Salvaged", Energy News Network, 23 Nov. 2021. Available at: <https://energynews.us/2021/11/23/transportation-pact-is-likely-totaled-but-equity-components-could-be-salvaged/>.

31 Purdum, T.S., "The 'Queen of Green's' Coming Bout with Trump", Atlantic, 2 Oct. 2018. Available at: <https://www.theatlantic.com/politics/archive/2018/10/trumps-coming-showdown-with-californias-queen-of-green/571051/>.

32 United States Code 42, s 7543.

33 Newburger, E., "Biden Restores California's Ability to Impose Stricter Auto Pollution Limits", CNBC News, 9 March 2022. Available at: <https://www.cnbc.com/2022/03/09/biden-restores-california-ability-to-set-its-own-auto-pollution-rules.html>.

34 Moench, M., "California Approves Controversial Tropical Forest Offsets Plan", San Francisco Chronicle, 19

3. Cumulative State-Level Clean Energy Regulatory Requirements

Given that 12% of Americans live in California and another 16% live in RGGI states, more than a quarter of all Americans face some form of GHG pricing. In addition, 38 states and the District of Columbia have adopted *renewable portfolio standards* (RPS), which require their power companies to ensure that an ever-increasing percentage of the electricity that they sell comes from clean-energy sources. Thus, while America's federal climate change policies lag behind many European nations, its actual on-the-ground GHG emissions reductions have been substantial with 2020 emissions down 20% from 2005.³⁵

C. Aligning Finance with Sustainability Goals

Global progress on climate change requires not just on government action, but investments, innovation, and behavioral change from private parties as well. In recent years, a growing number of sustainability-minded investors, consumers, and community leaders have mounted efforts to spur GHG emissions reductions. As a result, corporate leaders come to see their role as requiring more than delivering maximal returns to their stockholders. They increasingly recognize that their *social license to operate* requires a commitment to stakeholder responsibility.³⁶ In 2019, for example, the Business Roundtable redefined its "Statement on the Purpose of a Corporation" to go beyond *shareholder primacy* to include corporate responsibilities to workers, suppliers, consumers, and society as a whole. In parallel, both consumers and investors have begun to demand more information on the Environmental, Social, and Governance (ESG) performance of the companies from which they purchase goods or in which they buy shares. This sea change in attitudes toward the corporate role in society has led to dramatically expanded ESG reporting—with investment advisors insisting on more complete voluntary disclosure of sustainability metrics for the companies in their portfolios and governments beginning to mandate ESG reporting frameworks for all publicly traded entities.³⁷

In the United States, efforts to standardize ESG reporting have lagged at the federal level—though with the inauguration of the Biden Administration, the U.S. Securities and Exchange Commission appears likely to adopt some form of ESG requirements, particularly related to corporate climate change performance. Though state-level governments are not able to totally step into the void left by the federal government, they have taken significant steps in recent years to adjust their own conduct and practices to align with the goals of sustainable finance—not least with significant policy innovations relating to management of investment funds.

Sept. 2019. Available at: <https://www.sfchronicle.com/business/article/California-approves-controversial-tropical-forest-14454158.php>.

35 "U.S.A.," Climate Action Tracker, 16 Aug. 2022. Available at: <https://climateactiontracker.org/countries/usa/>.

36 Esty, D.C. & Cort, T., "Sustainable Investing at a Turning Point", in Esty, D.C. & Cort, E. (eds.), *Values at Work: Sustainable Investing and ESG Reporting*, 2020, Palgrave Macmillan, p.3.

37 Esty, D.C. & Cort, T., "Corporate Sustainability Metrics: What Investors Want and Don't Get", *Journal of Environmental Investing* 2017, vol. 47, pp. 11-53; Esty, D.C. & Arriba-Sellier, N., "Zeroing in on Net-Zero: Matching Hard Law to Soft Law Commitments", *Colorado Law Review* forthcoming 2023, 94; Esty, D.C. & Cort, T., "Toward Enhanced Corporate Sustainability Disclosure: Making ESG Reporting Serve Investor Needs", *Virginia Law & Business Review*, forthcoming 2022, 16.

Public employee pension funds and other state investments constitute a significant portion of the country's overall investments. As of 2021, public employee pension funds hold \$4.5 trillion in assets,³⁸ and public university endowment funds comprise several hundred billion dollars.³⁹ The size of these assets, as well as the fact that many of them are invested in carbon-intensive industries, have spurred climate activists to call for fossil fuel divestment.⁴⁰

In the past decade, state and municipal investment funds have started to divest from fossil fuel. Some of the most significant developments have taken place in the last year. In 2020, the New York State Comptroller announced that the state's pension fund, which controls \$226 billion in assets, would shift away from fossil fuel-based investments.⁴¹ And in 2021, Maine adopted legislation *requiring* divestment from fossil fuels by the state treasury and pension fund.⁴²

But *divestment* is just one part of the equation. Many funds throughout the country have started integrating ESG-based considerations into the management of their funds, seeking to leverage their funds as levers for effecting change in the private sector. California's state-run pension funds—the Public Employees' Retirement System and the State Teachers' Retirement System—have long incorporated ESG considerations into their investment strategy.⁴³ The teachers' pension system developed a comprehensive set of “risk factors” to guide their investments,⁴⁴ which have become a benchmark for other funds.⁴⁵ Other states, including Colorado, Connecticut, the District of Columbia, Maine, Maryland, New York, and Oregon, have similarly adopted ESG-based considerations (which include climate change action elements) in the management of their pension funds.⁴⁶ Illinois adopted an even more ambitious requirement, effective in 2020, which requires that pension fund boards of trustees “adopt a written investment policy,” which must “in-

38 “National Data”, Public Plans Data. Available at: <https://publicplansdata.org/quick-facts/national/> (last visited 10 November 2022).

39 “Fast Facts”, National Center for Education Statistics. Available at: <https://nces.ed.gov/fastfacts/display.asp?id=73> (last visited 10 November 2022).

40 See, e.g., Gillis, J., “To Stop Climate Change, Students Aim at College Portfolios”, *New York Times*, 4 December 2012. Available at: <https://www.nytimes.com/2012/12/05/business/energy-environment/to-fight-climate-change-college-students-take-aim-at-the-endowment-portfolio.html>.

41 Barnard, A., “New York's \$226 Billion Pension Fund Is Dropping Fossil Fuel Stocks”, *New York Times*, 9 Dec. 2020. Available at: <https://www.nytimes.com/2020/12/09/nyregion/new-york-pension-fossil-fuels.html>.

42 Tuttle, R., “Maine Becomes First State to Order Public Fossil-Fuel Divestment”, *Bloomberg Green*, 17 June 2021. Available at: <https://www.bloomberg.com/news/articles/2021-06-17/maine-becomes-first-state-to-order-public-fossil-fuel-divestment>.

43 See, e.g., Vizcarra, H.V., “Reasonable Investors' Growing Awareness of Climate Risk and Its Impact on U.S. Corporate Disclosure Law”, in Esty, D.C. & Cort, T. (eds.), *Values at Work: Sustainable Investing and ESG Reporting*, 2020, Palgrave Macmillan, 181-193, pp. 184–85.

44 See “Attachment A: Investment Policy for Mitigating Environmental, Social, and Governance Risks (ESG)”, California State Teachers' Retirement System. Available at: https://www.calstrs.com/files/b956aa967/calstrs_esg_policy.pdf (last visited 10 November 2022).

45 Zaidi, A., “States Take Lead on ESG Investment Regulations While Feds Stand Still”, *Bloomberg Law*, 4 October 2019. Available at: <https://news.bloomberglaw.com/banking-law/insight-14>.

46 Fonseca, J., “The Rise of ESG Investing: How Aggressive Tax Avoidance Affects Corporate Governance & ESG Analysis”, *Illinois Business Law Journal* 2020, vol. 25, n° 1:7.

clude a statement that material, relevant, and decision-useful sustainability factors have been or are regularly considered by the board,” including “environmental factors.”⁴⁷

Although many states -- under the leadership of largely Democratic sustainability-minded governors, treasurers, and related officers -- have overseen significant reforms to pension management, many Republican-led states have not. Indeed, as the Biden Administration has pushed banks to remove investments in carbon-intensive processes, Republican state treasurers (and other asset managers in state governors) have threatened to divest from any bank or financial institution that divests from fossil fuels.⁴⁸

D. Green Banks and Clean Energy Funding Mechanisms

Investment reforms in state pension funds and beyond represent just one avenue that states and municipalities have pursued in their *sustainable finance* efforts. A number of states have launched *green banks* to increase the flow of funds to renewable power projects and investments in energy efficiency at the residential, commercial, and industrial sectors. Led by Connecticut in 2011,⁴⁹ thirteen states (and a number of cities and counties) have now set up clean energy finance structures of one sort or another.⁵⁰ These Banks make investments in renewable energy projects that were usually too small to attract private capital on their own. Since its inception in 2011, the Connecticut Green Bank has leveraged its modest allocation of public funds by 7-fold to generate nearly \$2 billion in clean energy projects.⁵¹

The Connecticut Green Bank’s approach to funding renewable energy production has spurred similar efforts across the country—chief among them the New York Green Bank.⁵² Separately, at the local level, Montgomery County, Maryland, and the cities of New Orleans and Cleveland have also established green banks with a goal of funding their transition to a clean energy future.⁵³ Collectively, green banks in the United States have generated tens of billions of dollars for energy efficiency, wind and solar power generation, and other aspects of clean energy infrastructure.

47 Illinois Compiled Statutes Annotated 40 s 5/1-113.6 (also known as the Sustainable Investing Act).

48 Markay, L., “Scoop: States Warn Banks – Drop Coal, and We Drop You”, Axios, 25 May 2021. Available at: <https://www.axios.com/states-banks-drop-coal-warning-biden-carbon-278bb3fb-2254-41b2-9b94-f986c1c9a3d2.html>.

49 See, e.g., Esty, D.C. “Regulatory Transformation: Lessons from Connecticut’s Department of Energy and Environmental Protection”, *Public Administration Review* 2016, vol. 76, issue 3, pp. 403-412.

50 Leonard, W.A., “Clean Is the New Green: Clean Energy Finance and Deployment Through Green Banks”, *Yale Law & Policy Review* 2014, vol. 33, issue 1, pp. 197-299; “Coalition for Green Capital”, available at: <https://coalitionforgreencapital.com> (last visited 10 November 2022).

51 Nilsen, E., “The Smartest Way to Finance Clean Energy That You’ve Never Heard of”, Vox, 1 June 2021. Available at: <https://www.vox.com/2021/6/1/22454779/green-banks-biden-american-jobs-plan>.

52 “Green Banks”, National Renewable Energy Laboratory. Available at: <https://www.nrel.gov/state-local-tribal/basics-green-banks.html> (last visited 10 November 2022).

53 Gileo, A. & Stickles, B., “Green Bank Accounting: Examining the Current Landscape and Tallying Progress on Energy Efficiency”, American Council for an Energy-Efficient Economy, 2016. Available at: https://neo.ne.gov/info/pubs/pdf/ACEEE-Green_Bank_Accounting-DollarEnergy_Savings_Loans.pdf; “Cuyahoga County Green Bank Opportunity Report (Spring 2016)”, Coalition for Green Capital, last visited 10 November 2022. http://coalitionforgreencapital.com/wp-content/uploads/2020/04/4420_CGC_Cuyahoga_Report_20_Web.pdf (last visited 10 November 2022).

E. State Subsidies for Clean Energy Projects

In the last several decades, state support for clean energy projects has grown markedly. From modest origins in 1975 (in the wake of the 1973 Arab Oil Embargo and ensuing energy crisis), when New York's state legislature established the New York State Energy Research and Development Authority (NYSERDA) to support renewable energy technologies and to lower the state's oil consumption to the present moment when nearly every state has some sort of funding or subsidies for business and residential investments in clean energy.⁵⁴ As the nation's longest-standing and one of the best-funded state energy agencies, NYSEDA runs over 75 programs, ranging from residential solar rebates and offshore wind procurement to a green bank. Its missions and direction has evolved over the decades. For example, it now has a special environmental justice-focused project, EmPower New York, which offers efficiency improvements (e.g., insulation and heat pump installations) to low-income New York residents at no cost.

Another prominent state level entity is the Massachusetts Clean Energy Center (Mass-CEC), established in 2009, it now supports forty different clean energy programs. Mass-CEC operates within the Executive Office of Energy and Environmental Affairs. Mass-CEC is funded primarily by the Massachusetts Renewable Energy Trust Fund (RETF), which levies a surcharge of 0.05¢ per kWh on electric utility ratepayers. This *system benefit charge* amounts to each household contributing about \$0.29 per month – topped up in recent years with additional funding voted by the state legislature – to allow an aggregate of \$44 million for renewable power and energy efficiency grants, operating expenses, and major capital expenditures.

Elsewhere across the country, most states have some form of financial support for renewable energy programs. 48 states have loan programs for renewable energy or efficiency programs, 45 states have tax incentives for renewable energy (most commonly credits or exemptions), and 17 have tax incentives for energy efficiency (usually in the form of a state income tax credit). 24 states have grant programs for renewable energy, 26 have grant programs for energy efficiency – with 31 states having at least one of the two.

F. Public Utility Commissions

In the United States, energy regulation is largely decentralized – with state-level public utility commissions (PUCs) setting the rates and terms on which electric utilities sell power to residential, commercial, and industrial customers. While the precise regulatory framework varies somewhat from state to state, a PUC's primary responsibility is to secure "just and reasonable" rates for their consumers – goals which have historically subordinated broader priorities such as GHG reductions and investments in clean energy. But in recent years, PUCs in many parts of the country have begun to incorporate climate change and clean energy goals in the incentive structures they establish for the utilities within their jurisdiction.

Some states, for example, have adopted *decoupling* rules to incentivize power compa-

54 Shurtz, N.E., "Eco-Friendly Building from the Ground Up: Environmental Initiatives and the Case of Portland, Oregon", *Journal of Environmental Law & Litigation* 2012, vol. 27, n° 1, 237-353, pp. 244-46; Sovacool, B.K., "The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change", *Stanford Environmental Law Review* 2008, vol. 27, 397-476, pp. 437-38.

ny efforts to promote energy efficiency. Others PUCs have implemented incentives for utilities to ensure that the companies promote the clean energy transition, such as performance bonuses for speedy interconnection for residential solar arrays on their customers' homes. Many PUCs have required that utilities create *demand response* programs that reduce peak electricity loads and avoid the need to fire up the dirtiest old fossil fuel burning power plants. Similar demand management programs are being developed to integrate variable renewable energy (notably wind and solar power) into the electric grid. When wind and solar production varies throughout the day, grid operators have flexibility to mobilize additional power plants to begin to generate electricity or call upon those enrolled in the demand response program to reduce their consumption.

PUCs across the nation have also begun to require the utilities that they regulate to invest in smart meters (and sometimes smart appliances as well) that can be used to modulate power supply/demand imbalances in a manner that avoids the traditional spikes in emissions as power companies turn call up their oldest and most inefficient coal-fired or diesel power plants to meet peak demand.

G. City-Level Climate Change Policies

Though most attention is focused on state-level climate change initiatives, cities and localities play a significant role in setting many of the environmental policies that affect Americans on a day-to-day basis. The sprawling nature of U.S. cities and suburbs has created a high level of dependence on individual automobile usage—which mayors across the country are now seeking to counteract with investments in better public transportation, bike lanes, as well as walking paths and pedestrian streets. The goal of many city and county officials is to make their communities more livable and climate-friendly.

Planning and zoning rules offer another local governance tool that is increasingly being used to change America's housing and transportation patterns. Zoning maps and development requirements – which designate some parts of a city or town as *residential* while other parts are established as *commercial* or *industrial* – frequently serve to separate residential neighborhoods from commercial areas. And in many places, some zones were set aside for single-family houses with a mandatory amount of land around each home (often an acre or two and times as much as 10 acres – four hectares). Historically seen as a way to keep homes away from polluting activities, today these restrictions are seen as hostile to sustainable lifestyles and municipal-scale GHG emissions reduction strategies.

Many mayors are therefore working with state officials to rewrite their Planning and Zoning rules to permit construction of higher-density housing, such as multifamily houses or apartment buildings, and mixed-use developments, where residential buildings and commercial establishments are blended – making it possible for more residents to walk or bike to work, stores, or restaurants. All of this is meant to combat the *sprawl*, that has long defined American housing patterns and translated into higher than necessary GHG emissions. Minneapolis has led the way in undoing restrictive zoning rules, moving in 2018 to allow taller buildings and denser housing (including triplexes on single lots).⁵⁵ In 2021, California's legislature voted to end single-family residential zoning—

55 “Minneapolis Upzones for Greater Density in Residential and Transit Areas”, National League of Cities. Available at: <https://www.nlc.org/resource/minneapolis-upzones-for-greater-density-in-residential-and-transit-areas/> (last visited 10 November 2022).

thereby allowing more homes to be built per unit of land.⁵⁶ Zoning reform has therefore emerged as a critical tool for shifting American housing and development patterns toward creating communities that are more walkable, bikeable, and accessible on public transit – and thus more compatible with efforts to advance deep decarbonization.⁵⁷

Cities have also developed ambitious climate plans of their own, seeking to capitalize on the opportunity for policy innovation where their state governments have lagged behind. Prior to the inauguration of negotiations at the 2021 Conference of the Parties in Glasgow, over 130 U.S. cities joined the “Cities Race to ZERO,” a United Nations initiative that organizes municipalities around net-zero greenhouse gas emissions goals.⁵⁸ Many examples of Mayors leading the charge on climate change can be found. In New York City, for example, beginning under the leadership of former Mayor Michael Bloomberg (who helped to found C-40, the coalition of major cities across the world working together on climate change), the city developed a sustainability strategy called “PlaNYC” – and launched efforts to switch to lower GHG fuels, promote energy conservation, improve air quality, and increase public spaces.⁵⁹

Similarly, Pittsburgh has been out front on climate change action at the municipal scale. Mayor Bill Peduto’s leadership has been seen as somewhat ironic insofar as President Trump infamously observed that he intended to withdraw from the Paris Agreement because: “I was elected to represent the citizens of Pittsburgh, not Paris.”⁶⁰ In a clear demonstration of countervailing leadership, Mayor Peduto joined the *We Are Still In* coalition (that included more than 3000 mayors and governors committed to upholding the goals of the Paris Agreement even as the federal government backed away), set local GHG emissions targets, signed Pittsburgh up to report its emissions on the CDP website, rewrote building codes to promote energy efficiency, and changed the Pittsburgh’s zoning rules to put the city on a path to a more sustainable future.⁶¹

56 “California Ends Single-Family Zoning”, *Economist*, 23 Sept. 2021. Available at: <https://www.economist.com/united-states/2021/09/23/california-ends-single-family-zoning>; Hase, G., “New Law Signals Change in How California Legislators Are Attacking the Housing Crisis”, *Washington Post*, 8 Oct. 2021. Available at: https://www.washingtonpost.com/national/new-law-signals-change-in-how-california-legislators-are-attacking-the-housing-crisis/2021/10/07/9a2d2056-2310-11ec-b3d6-8cdebe60d3e2_story.html.

57 Tomer, A., Kane, J.W., Schuetz, J. & George, C., “We Can’t Beat the Climate Crisis Without Rethinking Land Use”, *Brookings Institute*, 12 May 2021. Available at: <https://www.brookings.edu/research/we-cant-beat-the-climate-crisis-without-rethinking-land-use/>.

58 “Cities Race to Zero”, *C40 Cities*. Available at: <https://www.c40.org/what-we-do/building-a-movement/cities-race-to-zero/> (last visited 10 November 2022).

59 See Bagley, K. & Gallucci, M., *Bloomberg’s Hidden Legacy: Climate Change and the Future of New York City*, 2013, *InsideClimate News*.

60 Merica, D., “Pittsburgh Over Paris: Trump’s Nationalist Decision”, *CNN Politics*, 1 June 2017. Available at: <https://www.cnn.com/2017/06/01/politics/paris-pittsburgh-trump-nationalist-decision/index.html>.

61 Goldstein, A., “A Year Ago Trump’s ‘Pittsburgh Not Paris’ Comment ‘Galvanized a Response,’ Mayor Says”, *Pittsburgh Post-Gazette*, 1 June 2018. Available at: <https://www.post-gazette.com/news/environment/2018/06/01/Trump-Pittsburgh-comment-paris-accord-mayor-peduto/stories/201806010092>; Ribeiro, D., “US Cities Adopt Stricter Building Energy Codes”, *American Council for an Energy-Efficient Economy*, 9 Sept. 2019. Available at: <https://www.aceee.org/blog/2019/09/us-cities-adopt-stricter-building>.

III. Other mechanisms for sub-national climate change impact

The strategies identified in Part II represent a significant share of how states and municipalities are responding to the threat of climate change. But beyond these actions taken through formal policy processes, states and municipalities have banded together through alliances and coalitions to compare notes, share best practices, and present a unified climate change front against a lagging federal government. The more informal actions constitute a further dimension of American federalism and competing political leadership.

A. Coalitions of State Actors and Governments

Constitutions, statutes, and regulations form the basis of legal power in the United States, from which state and local governments—along with their constituent officials—derive their authority. The scope, exercise, and balance of this power is hotly contested, frequently requiring state and federal courts to intervene to resolve difficult questions. But beyond these *de jure* powers, governments and officials have a large measure of *de facto* power and leadership capacity.

Beginning primarily in the last century, states, counties, cities, and individual elected officials have banded together to develop shared practices—and to use their collective power to lobby the federal government to enact their preferred policies. One of the most prominent examples of this is the National Governors Association, a bipartisan group of every governor in the United States, which advocates for state interests.⁶² Similar organizations, like the National Conference of State Legislatures and the United States Conference of Mayors, have also formed. Today, almost every statewide elected official is represented by some sort of national organization: the National Association of Attorneys General, the National Association of Secretaries of State, the National Association of State Treasurers, and so on.

While some statewide officials have little environmental policymaking authority, many others do—and have started developing best practices for their policymaking responsibilities through these associations. The National Association of Insurance Commissioners (NAIC), for example, assembled the Climate and Resiliency (EX) Task Force, which coordinates “discussion and engagement on climate-related risk and resiliency issues, including dialogue among state insurance regulators, industry, and other stakeholders.”⁶³ Since 2010, the NAIC has published the Insurer Climate Risk Disclosure Data Survey to “provide regulators with information about the assessment of risks posed by climate change to insurers and the actions insurers are taking in response to their understanding of climate change risks.”⁶⁴ Similarly, the National Association of State Departments of Agriculture (NASDA) has developed policy on climate resiliency,⁶⁵ and formed the Food

62 Jensen, J.M., *The Governors' Lobbyists*, 2016, University of Michigan Press, pp. 58–73.

63 “Climate and Resiliency (EX) Task Force”, National Association of Insurance Commissioners. Available at: https://content.naic.org/cmte_ex_climate_resiliency_tf.htm (last visited 10 November 2022).

64 “NAIC Assesses, Provides Insight from Insurer Climate Risk Disclosure Survey Data”, National Association of Insurance Commissioners, 23 Nov. 2020. Available at: https://content.naic.org/article/news_release_naic_assesses_provides_insight_insurer_climate_risk_disclosure_survey_data.htm.

65 “Climate Resiliency (2022 Priorities)”, National Association of State Departments of Agriculture. Available at:

and Agriculture Climate Alliance with several industry groups to develop recommendations on the development of climate legislation at the federal level.⁶⁶

Subsets of these organizations have formed to advance policy for ideologically sympathetic elected officials. State attorneys general frequently play a role in enforcing their states' environmental laws, representing their states in environmental litigation – and in some cases challenging the federal government where they disagree with the posture of authorities in Washington, including on climate change policies. A number of associations or supporting organizations have been formed to support environmental enforcement actions. A network of regional environmental enforcement associations exists— including the Northeast Environmental Enforcement Project, the Southern Environmental Enforcement Network, and the Western States Project—to provide training to the offices of state attorneys general on these issues. And the State Energy and Environmental Impact Center at the New York University School of Law provides support to attorneys general pursuing environmental actions – including climate change litigation -- as well.⁶⁷

In addition, state treasurers, who play a significant role in the management of state funds, have organized to take actions that promise to address climate change – notably through requests for more information on the ESG performance of companies in which the state has investments. While the National Association of State Treasurers has not focused on ESG metrics in managing state investments as one of its primary policies, an association of primarily Democratic State Treasurers, has formed to provide best practices to its members about sustainable finance and other avenues for progressive policy changes.⁶⁸

To some extent, organizations like these have attempted to use their collective power and influence to oppose rollbacks of environmental safeguards and commitments by the federal government. In the early 2000s, following the Bush Administration's opposition to ratifying the Kyoto Protocol, municipal leaders and members of the U.S. Conference of Mayors began organizing to implement the Protocol themselves. A handful of mayors drafted the Climate Protection Agreement in 2005,⁶⁹ which now has over 1,000 signatories today, and resulted in the creation of the Mayors Climate Protection Center to provide advice and support to cities across the country.⁷⁰

As noted earlier, thousands of state and local political leaders joined the *We Are Still In* initiative, following the Trump Administration's withdrawal from the Paris Agreement,

<https://www.nasda.org/climate-resiliency> (last visited 10 November 2022).

66 See “Food and Agriculture Climate Alliance Presents Joint Policy Recommendations”, Food and Agriculture Climate Alliance. Available at: https://agclimatealliance.com/files/2020/11/faca_recommendations.pdf (last visited 10 November 2022).

67 “About the Center”, NYU School of Law State Energy & Environmental Impact. Available at: <https://www.law.nyu.edu/centers/state-impact/about> (last visited 10 November 2022).

68 See, e.g., “Thinking About the Long Term”, For the Long Term. Available at: <https://www.forthelongterm.org/home> (last visited 10 November 2022). See also Connley, C., “17 State Treasurers Urge Congress to Include Federal Paid Family Leave in Biden's American Families Plan”, CNBC News, 21 April 2021. Available at: <https://www.cnbc.com/2021/04/21/17-state-treasurers-urge-congress-to-pass-federal-paid-family-leave.html> (detailing role of For the Long Term in organizing state treasurers around issue of paid family leave).

69 Resnik, J., Civin, J. & Frueh, J., “Sovereignism, Federalism, and Translocal Organizations of Government Actors (TOGAs)”, *Arizona Law Review* 2008, vol. 50, 709-784, pp. 718-20.

70 “Mayors Climate Protection Center”, The United States Conference of Mayors. Available at: <https://www.usmayors.org/programs/mayors-climate-protection-center/> (last visited 10 November 2022).

to demonstrate their collective commitment to robust climate change action.⁷¹ A similar organization, the United States Climate Alliance, organized a group of bipartisan governors to establish their states' commitments to the Paris Agreement's emissions-reduction targets.⁷²

Though the constitutionality of states and municipalities actually signing onto international treaties remains contested,⁷³ the value of subnational commitments and the associated organizations designed to reinforce a unified policy stance cannot be doubted. These entities – dubbed *translocal organizations of government actors* (or TOGAs) by my Yale colleague Judith Resnik -- provide a powerful political signal with particular impact when their policy posture runs counter to that of the party in power in Washington. By working together to develop policy arguments, share best practices, gather data, and document results these officials highlight alternative paths forward, demonstrate the vitality of their competing vision for America's future, and mobilize opposition to the federal government's policy direction.

B. Voter- and Citizen-Initiated Action

Many states in the United States are notable for devolving a significant amount of policymaking authority to voters and citizens themselves. Drawn conceptually from Greece's direct democracy and with domestic origins in the tradition of New England town halls in which all citizens gather to debate, most U.S. states have procedures for voters to initiate constitutional amendments or statutes of their own drafting—or to repeal statutes enacted by their elected state legislatures. These tools have begun to be used in the climate change context – and might well expand if the federal government continues to be paralyzed by deep partisan divides.

Private litigation offers another avenue for opposition to federal policies – and can play a significant role in challenging the party in power and their policy agenda. Since the 1960s, citizens have frequently sued federal, state, and local governments over environmental issues, seeking to use the judicial branch to force compliance with environmental statutes and opposing rollbacks of environmental progress. In the last decade, however, these efforts have evolved in new and interesting ways, as citizens have sought to invoke judicial authority to protect them from federal and state inaction on climate change.

71 "About", We Are Still In. Available at: <https://www.wearestillin.com/about>, (last visited 10 November 2022).

72 "Alliance Principles", United States Climate Alliance. Available at: <http://www.usclimatealliance.org/alliance-principles> (last visited 10 November 2022).

73 See, e.g., McCarthy, K., "An American (State) in Paris: The Constitutionality of U.S. States' Commitments to the Paris Agreement", *Environmental Law Reporter* 2018, n° 48-11, pp. 10978- 10988; But Cf. Esty, D.C. & Adler, D.P., "Changing International Law for a Changing Climate", *American Journal of International Law* 2018, vol. 112, pp. 279-284.

1. At the Ballot Box

More than half of the states in the United States allow voters to initiate a state constitutional amendment or a state statute.⁷⁴ The rules and procedures vary from state to state—in terms of what sort of voter support is required, what subjects (and how many) can be proposed, and how the initiated statutes or constitutional amendments are insulated from state legislative modifications. Regardless of the differences in procedure, however, in the past several decades, voters have used their powers to force state governments to adopt their preferred environmental policies.

Though we do not endeavor to provide a comprehensive list of all environmental policies adopted as a result of voter initiatives, several are worth noting. In 1996, Colorado voters, with the support of then-Governor Roy Romer, formed “Citizens to Save Colorado’s Public Lands,” which put Amendment 16 on the ballot. The amendment proposed an overhaul of the state’s management of its public lands, requiring a shift from extracting the greatest value possible from the land to preserving natural beauty and natural ecosystems, along with the creation of a 300,000-acre stewardship trust.⁷⁵ The amendment ultimately passed—and though challenged as unconstitutional in federal court,⁷⁶ came into effect.

Florida voters have been particularly active in amending their state constitution to protect the environment. In the 1990s, voters proposed a series of amendments intended to protect the Florida Everglades from pollution associated with the state’s sugarcane industry. The proposed amendments levied taxes on the sugar industry and imposed a partial “polluter-pays” requirement—though these efforts were ultimately weakened by the state legislature’s enactment of them and the state supreme court’s narrow interpretation of their force.⁷⁷ In the 2010s, voters approved amendments to the state constitution ostensibly requiring that the state use dedicated revenue to purchase and preserve land⁷⁸ (though its ambit was narrowed by the state courts⁷⁹) and banning offshore oil drilling.⁸⁰

A growing area of interest has emerged around state constitutional protections of environmental rights. A handful of state constitutions recognize these rights, but their force has been weakened by restrictive interpretations by state courts. More recent decisions in Hawai‘i and Pennsylvania, however, have breathed new life into these protections,⁸¹ inspiring environmental advocates to pursue them in other states. In 2021, New York voters

74 “Initiative and Referendum States”, National Conference of State Legislatures. Available at: <https://www.ncsl.org/research/elections-and-campaigns/chart-of-the-initiative-states.aspx> (last visited 10 November 2022).

75 Constitution of the State of Colorado, art. IX, ss 9-10; see also “Romer: Profit Should Not Be Primary Focus of Land Board”, *Daily Sentinel* (Grand Junction, Colorado), 21 June 1996, at 3A.

76 See, e.g., United States Court of Appeals for the Tenth Circuit, 20 Nov. 1998, F.3d 161, 619, *Branson School District RE-82 et al. v. Romer* (upholding Amendment 16’s constitutionality).

77 See, e.g., Supreme Court of Florida, 11 April 2002, So.2d 823, 73, p. 83, *Barley South Florida Water Management District*; Supreme Court of Florida, 26 November 1997, 706 So.2d 706, 278, p. 281, *Advisory Opinion to the Governor*.

78 Constitution of the State of Florida, art. X, s 28.

79 Florida First District Court of Appeal, 9 Sept. 2019, So.3d 281, 531, p. 535, *Oliva v. Florida Wildlife Federation*.

80 Constitution of the State of Florida, art. II, s 7(c).

81 Supreme Court of Hawai‘i, 14 Dec. 2017, P.3d 408, 1, pp. 5–17, in *re Maui Electric Company*; Supreme Court of Pennsylvania, 19 Dec. 2013, A.3d 83, 901, pp. 951–52, *Robinson Township. v. Commonwealth*.

approved an expansive environmental rights amendment to their state constitution.⁸² Although its effects will ultimately be determined by the scope of its interpretation by the state court system, this new provision could provide a platform for legal action to force both the state government and private companies operating in New York to take action in response to climate change.⁸³

2. In the Courthouse

Private litigation has been a crucial part of the modern environmental movement—beginning in its contemporary form with litigation in the 1970s and 1980s around the “public trust” doctrine, an old common-law idea that the government had the responsibility to keep the water (and some land) in “trust” for its citizens.⁸⁴ But in recent years, this idea has taken on a new and interesting form, as youth climate activists have attempted to raise “public trust” claims against the federal and state governments for inaction on climate change.

Much attention has been focused on *Juliana v. United States*, a potentially landmark case involving youth climate plaintiffs. In *Juliana*, activists filed suit against the federal government, arguing that its failure to take action against climate change threatened them with extinction—thereby violating their federal constitutional rights and running afoul of the public trust doctrine. The plaintiffs saw initial success in the federal district court, but the Ninth Circuit Court of Appeals—which hears appeals of cases in the Western United States—ultimately concluded that the plaintiffs did not have standing to bring their claims.

Similar cases have been litigated in Alaska, Oregon, and Washington state, sometimes with the same plaintiffs. But the cases have been no more successful in state courts. In *Sagoonick v. Alaska*, decided by the Alaska Supreme Court in 2022; *Chernaik v. Brown*, decided by the Oregon Supreme Court in 2020; and *Aji P. v. State*, decided by the Washington Court of Appeals in 2021, plaintiffs argued that their state governments had violated their duty under the “public trust” by not taking decisive enough action against climate change. Both state courts rejected the claims.⁸⁵ Additional cases have been filed in other states—including Montana and Utah⁸⁶—but it appears unlikely that they will yield different outcomes.

82 van Rossum, M., “How Green Amendments Protect Key Environmental Rights”, Law360, 23 Nov. 2021. Available at: <https://www.law360.com/articles/1442901/how-green-amendments-protect-key-environmental-rights>.

83 See, e.g., Weniger, C., “What Could New York State’s Proposed Environmental Rights Amendment Achieve?”, Sabin Center for Climate Change Law: Climate Law Blog, 1 Sept. 2020. Available at: <http://blogs.law.columbia.edu/climatechange/2020/09/01/what-could-new-york-states-proposed-environmental-rights-amendment-achieve/>.

84 Frank, R.M., “The Public Trust Doctrine: Assessing Its Recent Past and Charting Its Future”, *U.C. Davis Law Review* 2012, vol. 45, 665–91, pp. 667–70.

85 Supreme Court of Alaska, 28 Jan. 2022, P.3d 503, 777, *Sagoonick v. State*; Supreme Court of Oregon, 22 Oct. 2020, P.3d 475, 68, p. 71, *Chernaik v. Brown*; Court of Appeals of Washington (State), Division One, 8 Feb. 2021, No. 80007-8-I, P.3d 480, 438, p. 446, *Aji P. v. State*.

86 Bookbinder, D., “The Courts Begin to Act on Climate Change”, Niskanen Center, 31 March 2022. Available at: <https://www.niskanencenter.org/the-courts-begin-to-act-on-climate-change/>; Dunphey, K., “It’s the Most Important Thing to Me’: Inside the Youth-Led Lawsuit Alleging Utah’s Complicity in Climate Change”, *Deseret News*, 16 March 2022. Available at: <https://www.deseret.com/utah/2022/3/16/22981083/utah-kids-sue-spencer-cox-climate-change-air-quality-activism-pollution-our-childrens-trust>.

The decisions in *Juliana*, *Sagoonick*, *Chernaik*, and *Aji P.* occurred as landmark climate cases were being decided around the world—most notably, in France, the Netherlands, and the United Kingdom—and with more favorable outcomes for plaintiffs than in the United States.⁸⁷ The difference could be attributed to the unique system of separated powers in the United States, which frequently dissuades judges from usurping policy-making authority from the other branches, as well as the strict system of standing, which frequently results in the dismissal of environmental cases from court.

IV. Federalism as an obstacle to climate change action

While the discussion above chronicles ways that sub-national jurisdictions have provided climate change leadership in the United States and offered a critical policy counterpoint to dysfunction in Washington, there exists a concomitant downside to America's federalism. Just as Governors, Mayors, and Attorneys General can push for climate change action that exceeds federal ambitions, these same officials can slow down efforts to address the build-up of GHGs in the atmosphere. They have many of the same tools available to them as have been sketched out above: their own zone of regulatory authority, a capacity to organize like-minded officials, and opportunities to bring legal challenges to block policies to which they object.

A. Regulatory Competition and Competitive Disadvantage

Justice Brandeis's suggestion, noted earlier, that the prospect of divergent policies across the 50 states is "without risk to the rest of the country" turns out to be incorrect. In fact, in the environmental context, a sub-national jurisdiction that under-attends to the harm it causes to others by allowing pollution that spills across its territorial boundaries presents real risks to the rest of the country. Spillovers of harm are especially acute in the climate change context, where GHG emissions indivisibly blanket the Earth. Policy experimentation – or neglect -- in one state (or nation) that translates into a sub-par response to climate change therefore presents a very real *risk* to others as the build-up of emissions threatens to transgress planetary boundaries.

In the U.S. context, the refusal of a state to regulate the greenhouse gases being emitted within their border harms other states – as well as other nations. And the harm is multi-fold. First, the GHG emissions emanating from low-standard states translate directly into an increased threat of damaging climate change for all given that GHGs blanket the Earth. Second, the presence of low-standard states may also undermine the prospect of climate change policy success by others. Notably, if states are permitted to pursue climate strategies of differing ambitions, corporations may seek to avoid the costs of regulatory compliance in a climate-conscious state by moving their operations to one without a demanding climate change regulatory program. Such regulation-evading moves inflict both environmental and economic harms on the high-ambition jurisdictions. No-

87 Esty, D.C., "Should Humanity Have Standing? Securing Environmental Rights in the United States", *Southern California Law Review* forthcoming 2022, 94.

tably, corporate relocation to *pollution havens*⁸⁸ results in GHG *leakage*⁸⁹, as emissions simply shift from high-standard jurisdictions to low-standard ones, thereby undermining the efforts of the states committed to climate change action to control their emissions.⁹⁰ And the relocation of a factory means a loss of jobs, tax revenues, and economic opportunity in the high-standard state. Third, even the prospect of companies moving to low-standard jurisdictions may result in a *regulatory chill*,⁹¹ which deters high-ambition states from adopting aggressive climate change policies for fear of imposing competitive disadvantages on the producers within their jurisdiction.

Thus, while the United States federal system allows states to experiment with different policies, as Justice Brandeis suggested, the adoption of a patchwork quilt of different policies can lead to *regulatory competition* that allows economic actors to play one state off against others—thereby achieving private gains at the expense of policy progress. This pattern of states competing for factories and production opportunities by promising light regulation – knowing that the burden of under-regulating will fall largely on others (as the GHG emissions spread across the globe and extend over time) with scarcely any noticeable impact on their citizens – represents a serious market failure that can only be fully addressed by a coordinated response across all jurisdictions (including all nations as well as all of the American states).

B. Legal Obstruction

Just as the attorneys general in America’s *blue* states slowed down the Trump Administration’s deregulatory efforts through a series of court challenges to the scientific validity, procedural appropriateness, and administrative legality of these policy initiatives, *red*-state attorneys-general have gone to court to block the Biden Administration’s climate change policies (as they similarly did during the Obama Administration).⁹² The deep political rifts in the United States when overlaid on the diffusion of power that is a hallmark of America’s governance structure mean that are always officials from the opposite party positioned to bring legal attacks on federal policy proposals in general and climate change strategies in particular.

88 Esty, D.C., *Greening the GATT: Trade, Environment, and the Future*, 1994, Peterson Institute for International Economics.

89 Dominiononi, G. & Esty, D.C., “Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes” (forthcoming 2023), *op. cit.*

90 See, e.g., Esty, D.C., “Revitalizing Environmental Federalism”, *Michigan Law Review* 1996, vol. 95, issue 3, pp. 570-653; Revesz, R.L., “Rehabilitating Interstate Competition: Rethinking the ‘Race to the Bottom’ Rationale for Federal Environmental Regulation”, *N.Y.U. Law Review* 1992, vol. 67, n° 6, p. 1210.

91 Esty, D.C., “Should Humanity Have Standing? Securing Environmental Rights in the United States”, *Southern California Law Review* (forthcoming 2022), *op. cit.*

92 Hoshijima, Y., “Presidential Administration and the Durability of Climate-Consciousness”, *Yale Law Journal* 2017, vol. 127, pp. 170-244; Castle, K.M. & Revesz, R.L., “Environmental Standards, Thresholds, and the Next Battleground of Climate Change Regulations”, *Minnesota Law Review* 2019, vol. 103, pp. 1349- 1437; Joselow, M., “Court Ruling on Social Cost of Carbon Upends Biden’s Climate Plans”, *Washington Post*, 21 Feb. 2022. Available at: <https://www.washingtonpost.com/climate-environment/2022/02/21/social-cost-of-carbon-biden/>.

C. Separation of Powers and Political Stasis

America's federalism -- with its diffusion of authority across multiple layers of government; separation of powers across the legislative, executive, and judicial officials; and an electoral framework that often results in the executive and legislative branches being led by opposing parties -- makes blocking change much easier than delivering policy progress. This structure imposes significant legal and political challenges that must always be overcome before new policy initiatives can go into effect. And if the political divides are deep enough -- as they have been with regard to climate change at the federal level over several decades -- the result is a pattern of policy stasis. Proposals from one party are attacked by the opposing party -- and then rejected by either a court or withdrawn as the political pendulum swings and the opposing party takes power. Thus fundamental policy change in America -- such as the transformational change required to move the United States toward a clean energy future -- can only be done on a bipartisan basis.⁹³

V. Conclusion

Climate change policy in the United States is driven in part by federal authorities, but not entirely. State- and city-level leadership also plays a major role in determining what happens with regard to electricity generation choices, energy efficiency investments, transportation options, and other decisions that shape the GHG footprint of American society. To be clear, policies set at the federal level inform America's response to climate change, but they *do not dictate* what happens at the state and local levels. Whether the Biden Administration is able to launch the boldest national climate policy in the history of the United States or not, separate climate change action agendas will continue to be advanced in a number of states.

The authority given to governors, mayors, and other sub-national officials under America's federalist structure thus provides a brake on policy change that makes it difficult for a party coming into power to undo entirely the prior administration's handiwork. This multi-layer governance structure provided a *safety net* against climate change policy inaction during the Trump Administration. But this same dynamic makes it very difficult to significantly redirect policies (especially at the politically riven federal level) -- even on issues where circumstances demand bold new thinking and associated policy reform. Thus, America's fundamental legal framework stands as a bulwark against climate change policy failure, but at the very same time the horizontal and vertical distribution of power has become an obstacle to the adoption of deep decarbonization strategies and the transformative policies required to move the United States toward a clean energy economy and a sustainable future.

93 Esty, D.C., "Red Lights to Green Lights: From 20th Century Environmental Regulation to 21st Century Sustainability", *Environmental Law Review* 2017, vol. 47, pp. 1-80.

