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Foreword

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FOREWORD

John Travis Marshall & Karen Johnston^{*}

The United States finds itself at a critical crossroads. The future promises a landscape with a steadily changing climate, an economy navigating fundamental shifts, significant levels of domestic social vulnerability, and international conflicts driven in no small part by the goal of maintaining access to reasonably priced natural gas and oil. Amid these looming challenges, one thing is for certain: the pathway to a more sustainable future for the U.S. must include the robust transformation of the nation's energy sector.

Law and policy have profoundly informed, and will continue to inform, the essential and ongoing transformations around energy resource development, energy generation, transmission of electrical power, and energy conservation. It is, however, unwise to assume that the arc of these transformations bends toward a better future for all. There are no assurances that this energy transition will secure a more resilient, equitable, efficient, and economical future. It is, for this reason, imperative to stop and consider potential future pathways for our state's and our nation's energy transition. In particular, lawyers and policymakers alike should pause to consider the goals or the end to which the nation and Georgia are charting their ways forward.

The *Georgia State University Law Review*'s 2023 Symposium, Renewable Energy: 2023 and Beyond, could not be timelier. Georgia and the rest of the nation are pressed to realize a future that includes

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low-cost, carbon-free energy resources. These needs are underscored by the COVID-19 pandemic demonstrating that millions of Americans, including Georgians, live just a paycheck or two away from not affording to pay their rent or having to choose between buying food and covering their substantial monthly power bills. The first two decades of this century have also featured weather events that might once have seemed plucked from the imaginations of science fiction writers. The last twenty or so years have been punctuated not only with the effects of more extreme tidal events but also with indications that tropical cyclones are developing more rapidly, wildfire seasons are growing in duration and intensity, and arctic-like cold waves are reaching almost every region of the U.S. Hundreds have perished in these weather-related disasters; hundreds of billions of dollars have been spent by the federal government rebuilding affected communities. Unfortunately, domestic challenges aren't the only problems that must concern us. A global market for energy resources also means that Georgia and the U.S. remain deeply vulnerable to war and unrest the world over. Russia's February 2022 invasion of Ukraine caused energy prices to spike, supercharging a post-pandemic period of high inflation that has the economy teetering at the precipice of a recession. Russia's invasion of Ukraine highlights that the need for energy security is greater than ever.¹

At the same time, opportunities for Georgia and the nation to map trajectories toward transformative energy futures—futures that are more equitable and inclusive—have arguably never been better. Recent federal laws passed to respond to the severe economic distress associated with the COVID-19 pandemic are making possible historic investments in grid modernization, clean energy, and climate action.²

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^{1.} See Richard Valdmanis & Erwin Seba, CERAWEEK-US Energy Sec Still Sees Global Energy Challenges from Ukraine War, REUTERS (Mar. 8, 2023, 5:18 PM), https://www.reuters.com/business/energy/ceraweek-us-energy-sec-says-huge-challenges-remain-global-energy-2023-03-08/ [https://perma.cc/77Q9-GPNY].

^{2.} See Glencora Haskins & Joseph Parilla, Place-Based Federal Investment Can Chart a New Future for Regions Dependent on Fossil Fuel, BROOKINGS (Apr. 6, 2023), https://www.brookings.edu/research/place-based-federal-investment-can-chart-a-new-future-forregions-dependent-on-fossil-fuel/ [https://perma.cc/DJ8T-ZLWJ].

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The 2021 Infrastructure Investment and Jobs Act earmarks billions of dollars to "modernize the electricity grid, build a nationwide network of electric vehicle [(EV)] chargers, strengthen the battery supply chain, expand public transit and passenger rail, invest in new clean energy and emissions reduction technologies, improve resilience in physical and natural systems, and clean up legacy pollution in communities across the country."³ In addition, the Inflation Reduction Act of 2022 (IRA) provides \$370 billion to "lower energy costs for families and small businesses, accelerate private investment in clean energy solutions in every sector of the economy and every corner of the country, strengthen supply chains for everything from critical minerals to efficient electric appliances, and create good-paying jobs and new economic opportunities for workers."⁴

Transition to renewable energy is a complicated endeavor rife with political disagreements, clashes among "green" interests, attenuated permitting processes, vocal grassroots and local government opposition, sourcing and manufacturing issues, and more. It is no easy task to imagine a future state and national energy landscape dynamic enough to address pressing concerns related to a warming climate and an ever-evolving market for electrical power. The one-day Symposium grappled the challenges and opportunities of a more sustainable energy future from three perspectives. Building on the Symposium's opening session, which served as a general primer on core issues relating to renewable energy law and policy in Georgia, the Symposium explored three broad questions, including:

> • a keynote address outlining the reasons why communities must double down on their efforts to promote resilience to the extant and expected impacts of climate change;

4. *Id*.

^{3.} WHITE HOUSE, BUILDING A CLEAN ENERGY ECONOMY: A GUIDEBOOK TO THE INFLATION REDUCTION ACT'S INVESTMENTS IN CLEAN ENERGY AND CLIMATE ACTION 5 (2023), https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf [https://perma.cc/4QGE-GQD3].

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- a panel expounding the difficulties that the industry and governmental entities are encountering, and will encounter, in moving toward decarbonization; and
- a concluding panel framing the advances and the obstacles industry and government are encountering in the work involved in revitalizing the nation's electrical grid.

This foreword concludes with a brief overview of the Symposium's panels and keynote address, incorporating a brief sketch of each of the four articles from Symposium contributors.

An Introduction to Energy: In many countries, the national government controls the levers of energy law and policy. In the U.S., however, states can exert significant influence on basic decisions related to energy production, electrical transmission, and energy conservation. Georgia is no exception. The Symposium's first panel provided the audience with an overview of the state government entities that help drive Georgia's decisions on energy matters. This session featured three panelists: Costas Simoglou, director, Georgia Center of Innovation for Energy Technology; Tricia Pridemore, chair, Georgia Public Service Commission; and Maggie Kelley Riggins, senior program manager, Southeastern Energy Efficiency Alliance.⁵

The panelists explained how the various state actors play a central role in determining the state's energy future. Their comments help illustrate how public entities, including the Georgia Public Service Commission (PSC), the Georgia Department of Community Affairs (DCA), and the Georgia Department of Economic Development (DED), could all help calibrate the state's trajectory toward a more sustainable and equitable energy future. The PSC, for instance, plays the leading role in setting policy through its quasi-legislative and quasi-judicial powers. The mix of energy resources from which the state's electrical power is generated—ranging from coal or natural gasfired plants, to nuclear power, to solar wind and hydroelectric power

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^{5.} The panel was moderated by Curtis Romig, partner and litigation leader at Bryan Cave Leighton Paisner.

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generation—is heavily influenced by the legislative nature of its authority both to certify construction of new electrical generating facilities in the state and to conduct triennial review of Georgia Power's long-term plan for providing power to its Georgia customers. Approval of Georgia Power's construction of new nuclear reactors at Plant Vogtle is perhaps the best—and most controversial—example of the critical decisions the PSC can make regarding the state's long-term plans for energy production.⁶ The PSC also possesses the quasijudicial power to adjudicate challenges to new electrical utility rates proposed by Georgia Power.⁷

Other state entities exercise more nuanced influences on the transformation and development of Georgia's energy sector. An integral dimension of preparing for a more sustainable energy future involves developing and supporting industries that support efforts to reduce and eliminate carbon emissions. The DED and its center of innovation for energy technology have focused their efforts on bringing industry to Georgia that supports a greener economy and energy innovation, including new facilities to manufacture EVs and batteries for EVs.

Fostering a more equitable energy future also means supporting increased energy efficiency in the state's residential and commercial buildings. The DCA is responsible for amending the state's building code and, thus, can play a strategic role in helping ensure that new construction will yield increased energy efficiency.⁸ However, in Georgia and many other states, the majority of building stock was

^{6.} Matt Kempner, Nuclear Cost Overrun Could Mean Billions in Extra Georgia Power Profit, ATLANTA J.-CONST. (July 9, 2021), https://www.ajc.com/news/business/nuclear-cost-overrun-could-mean-billions-in-extra-georgia-power-profit/YIA3T3YHZRHI5A7GCZHREIXCPE/ [https://perma.cc/S8QX-J4HF].

^{7.} The PSC: An Introduction to Your Georgia Public Service Commission, GA. PUB. SERV. COMM'N, https://psc.ga.gov/about-the-psc/ [https://perma.cc/VN5A-SZC3]. In addition to Georgia Power, the state looks to municipally owned power companies and more than forty electric membership corporations (EMCs) to provide power to the state's residents. *See id.* The PSC does not approve rates charged by municipal power companies and EMCs. Those decisions are made by providers' board of directors. *See id.*

^{8.} See GA. CODE ANN. § 8-2-23(a) (2023) ("The department...may from time to time revise and amend the state minimum standard codes either on its own motion or up recommendation from any citizen, profession, state agency, or political subdivision of the state.").

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constructed before the 1950s, when states began adopting building and energy standards. This means that Georgia's ability to realize a more broadly sustainable energy environment depends on greater support for energy efficiency retrofits. After all, asserts Riggins, good energy policy is about taking such steps to improve the lives of Georgians, not just attracting more industrial development, building more power plants, or more solar arrays.

Symposium Keynote. Academics craft detailed arguments for pursuing more sustainable futures. Practitioners prepare white papers and plans sketching out their visions for more resilient futures. Some use concise tweets or extended podcast discussions to call for systemic change. In his keynote presentation, Loyola University New Orleans law professor, Rob Verchick, employs firsthand reckonings with climate change challenges and opportunities to make the case for realizing more resilient futures. In his keynote talk and his latest book, *The Octopus in the Parking Garage: A Call for Climate Resilience*, Verchick agrees that we must take all reasonable steps to mitigate the impacts of climate change by promoting development of more renewable energy resources.⁹ But he also exhorts readers to take actions to save lives, livelihoods, and ecosystems by identifying ways we can sustainably adapt to the profound ways that climate change has reshaped, and will continue to reshape, the world around us.

For those of us who don't pay close attention to our surroundings, Verchick relays stories of three decades of travels, anecdotes, and research interviews that help document troubling examples of rising seas and melting glaciers. He also disabuses the audience of any hope that these trends will soon abate or reverse even with the most aggressive policy and market changes around energy production and consumption. Rather, Verchick gives his audience a clear-eyed understanding that the globe will continue to warm for decades after we eliminate carbon emissions. At the same time, he provides us with examples of footholds that individuals and communities are

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^{9.} ROB VERCHICK, THE OCTOPUS IN THE PARKING GARAGE: A CALL FOR CLIMATE RESILIENCE (2023).

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establishing to realize meaningful progress toward a future where we could hope to continue to thrive as we battle the forces fueling climate change. As detailed in the stories he shares in the book's twelve chapters, Verchick, a former U.S. Environmental Protection Agency official in the Obama Administration, provides concrete examples of how we are adapting—and can adapt—to the reality of climate changes.

Decarbonization Dilemmas. The Symposium's second panel included Jeffrey Todd, associate professor of finance and economics, Texas State University; Andrew Morriss, professor, Texas A&M University; and Adam Orford, assistant professor of law, University of Georgia. These panelists, together with several scholars who were unable to participate in person, authored four papers on decarbonization. Each of these four papers appears in this issue of the *Law Review*.

In Synthesizing Energy Transitions, the authors, Nadia Ahmad, Uma Outka, Danielle Stokes, and Hannah Wiseman, perform a multidisciplinary review of the just transition concept, analyzing strategies and policies that support or impede the transition as well as the effects of the transition to suggest how the concept can be integrated into law and policy reform for the energy sector. Drawing on research from geography, public policy, economics, health sciences, and political science, the authors recognize the energy transition has had differing impacts on communities and groups of people. The authors conclude their analysis with several recommendations: (1) equity and justice must be integrated at the outset in all energy policy reform to avoid recreating inequalities; (2) there must be better integration and alignment between policies for restorative justice for communities suffering from past environmental injustices and those suffering economically as a result of the transition from fossil fuels; (3) there must be increased focus on the land use aspects of the energy transition, specifically on the current and future impact of renewable projects and how policy allocates the benefits and burdens; (4) to truly address social and justice based impacts, the types of technology adopted and the rate of adoption must consider the supply chain from

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cradle to grave, examining international linkages; (5) achieving energy justice requires a broader equity lens than the impact on a specific community or location; and (6) increase focus on development of cobenefits of energy reform.

Jeffrey Todd's article, *Climate Cap and Trade and Pollution Hot Spots: An Economics Perspective*, analyzes *ex post* economic studies of cap-and-trade programs to address concerns by environmental justice scholars and advocates that the buying and selling of emissions permits results in continued or worsened environmental harm to disadvantaged communities. Concerned that proposed restrictions on cap and trade could needlessly stifle innovation in the renewable energy sector, Todd presents policymakers with a clear picture of why cap-and-trade programs are more cost effective than efficiency standards and subsidies, how cap-and-trade programs can be designed to minimize pollution hot spots, and how cap-and-trade programs can reduce pollution in disadvantaged communities to an even greater extent than in well-off communities.

Roger Meiners and Andrew Morriss explain in *Ethical and Strategic* Issues in Decarbonization Policy how embedding specific technology into laws such as the IRA can stifle technological innovation while simultaneously shifting environmental and social harms to other countries. Specifically, Meiners and Morriss discuss how the push toward EVs and renewable energy sources and the resulting need to rapidly expand battery storage has resulted in environmental and social harms in countries such as the Democratic Republic of Congo, China, and more. They call into question the U.S.'s reliance on the Democratic Republic of Congo for rare earth minerals, cobalt and lithium, that are essential to the manufacturing of batteries and on China for the manufacturing of component parts, despite knowing of the resulting harms. This reliance is further called into question after Russia's invasion of Ukraine and the fallout on Europe for relying on Russia for its natural gas supply. Meiners and Morriss also question the U.S.'s aversion toward mining its own country over environmental concerns, despite stricter, more protective laws.

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In *Natural Gas and Net Zero: Mutually Exclusive Pathways for the Southeast*, Adam Orford argues that the Southeast's investments in natural gas infrastructure will make it more difficult for the U.S. to reach net zero and stabilize the climate and that investments must instead be made in solar, wind, nuclear, and energy storage. Orford focuses on the role of fuel mix planning, evaluating the planning authorities and planning processes in Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee, which reveal a wide range of approaches. He also evaluates current advocacy efforts and responses in these states, finding that the current regulatory framework has constrained advocacy around achieving net zero and climate policy in the Southeast. Orford calls for new net zero planning standards that force utilities to begin taking steps that consider the path to net zero by 2050, publicly disclose their strategies, and allow for public feedback.

The Future of the Grid. The electrical grid starts at our power generation facilities, extends through transition lines, crosses to substations, and ultimately brings electricity to our homes and businesses. It is the core of our nation's complex energy system.¹⁰ The Symposium's final session featured four panelists: Tony Yonnone, vice president of engineering and development for SolAmerica Energy; Tim Jarell, vice president of power supply and planning, Cobb EMC; Wilson Mallard, director of renewable development, Georgia Power; and Kurt Ebersbach, general counsel, Cherry Street Energy. Optimistic and energized by the ongoing transition to renewable energy,¹¹ the panelists zeroed in on significant law, policy, and technological challenges associated with the grid's vigorous expansion

^{10.} Nadja Popovich & Brad Plumer, *Why the U.S. Electric Grid Isn't Ready for the Energy Transition*, N.Y. TIMES (June 12, 2023), https://www.nytimes.com/interactive/2023/06/12/climate/us-electric-grid-energy-transition.html [https://perma.cc/H8CE-7B8C].

^{11.} The panelists shared the view that the prospects for grid improvements are exciting and there is an opportunity to build momentum to further reduce regulatory and technological barriers to transformative, community-scale clean energy projects. Slowly, but surely, public and private sector entities are building microgrids to provide secure clean energy for airport terminals, mixed-use urban developments, and isolated rural communities. *See, e.g.*, Michael Mechanic, *Snapshots From a Clean Energy Future*, MOTHER JONES, https://www.motherjones.com/environment/2023/04/microgrids-power-renewables-distributed-power-clean-energy/ [https://perma.cc/2UXN-WSBW].

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and revitalization, including energy storage, land use and zoning, and permitting considerations.

A foundation for this panel's focus on the grid was laid by Verchick's keynote. Verchick and the panelists recognize that the grid as currently configured is vulnerable to disruption. They urge that the future of the grid must include investments in hardening and greening the grid and making it smarter. These improvements are necessary because climate change increases the odds of severe weather, which in turn exposes a nation's electrical power generation and transmission infrastructure to ever greater stress and increased incidence of outages.¹²

The panel also foregrounded obstacles to project zoning approval and permitting as a central concern regarding the grid's future. The panelists noted that opposition from landowners abutting proposed solar arrays is only increasing. This grassroots opposition can translate into roadblocks before local government zoning authorities.¹³ Such roadblocks to approval can have major impacts on both the scope of the proposed project and the timeline for local government approval, both factors that influence the costs of proposed projects. It is important to add that local government zoning approval is frequently necessary not only for renewable energy projects but also for major transmission projects that may cross multiple local and state jurisdictions. It is, thus, no surprise that the planning and approval

^{12.} See Catherine Morehouse, *Power Grid Can't Handle Biden's Climate Rule, Industry Groups Say*, POLITICO (May 12, 2023, 4:30 AM), https://www.politico.com/news/2023/05/12/biden-power-rule-fossil-fuels-00096536?cid=apn [https://perma.cc/8VMW-96SH].

^{13.} Local governments are responding to residents who are concerned by significant aesthetic and cultural impacts of new solar arrays and wind farms. They are flexing their zoning powers to restrict the design and scope of proposed projects and adopt development moratoria to significantly slow the approval process. Jackie Smith & Patricia Alvord, *Whitmer Wants to Make Michigan a Clean Energy Haven. But Rural Communities Are Pushing Back*, TIMES HERALD (June 4, 2023, 5:05 AM), https://www.thetimesherald.com/story/money/business/2023/06/04/rise-of-wind-solar-farms-prompts-major-rule-changes-for-michigan-townships/70277865007/ [https://perma.cc/PDM3-7SMQ]. In at least one state, organizations are pursuing a ballot initiative that would completely bar utility-scale solar projects in rural communities. *See id.*

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process for major electricity transmission projects is long—sometimes lasting up to ten years before construction commences.¹⁴

Members of the panel also acknowledge the imperative of substantially augmenting the pathways for regional and interstate transmission of electricity. It is widely understood that the national electrical grid is currently so segmented as to fundamentally frustrate efforts to create the networks of transmission lines necessary to transmit wind and solar across the country.¹⁵ The panelists expressed confidence that the regulated community will meet the challenge of creating a more interconnected grid.

Concluding Thought: There are strong indications that Georgia is poised to assume a leading role in the nation's ongoing transition to renewable energy. The state already leads the nation in clean energy job investments since Congress authorized new programs under the IRA.¹⁶ In the course of the year since President Biden signed the IRA, these investments should create an impressive "16,627 new clean energy jobs for Georgia"—second only to Kansas.¹⁷ These are promising developments. At the same time, as several of the Symposium speakers cautioned, job creation, new utility infrastructure development, and increased research and development spending tell

^{14.} See US Greenlights Major Transmission Line for Renewable Energy in Western States, U.S. NEWS & WORLD REP. (May 18, 2023, 1:58 PM) [hereinafter US Greenlights], https://www.usnews.com/news/business/articles/2023-05-18/us-greenlights-major-transmission-line-for-renewable-energy-in-western-states (last visited June 15, 2023). It should be noted that it takes up to five years for the average energy project to navigate the permitting process. Ella Nilsen, What Is Permitting Reform? The Critical Energy Provision Buried in Debt-Ceiling Negotiations, CNN, https://www.cnn.com/2023/05/24/politics/energy-permitting-debt-ceiling-climate/index.html

[[]https://perma.cc/JUK2-PLKW] (May 30, 2023, 9:33 AM). Local and state governments are not the only ones that control a project's development time horizon. The approval process for major transmission projects frequently includes a National Environmental Policy Act (NEPA) environmental review process that often takes a couple of years. *US Greenlights, supra*.

^{15.} Nadja Popovich & Brad Plumer, *Why the U.S. Electric Grid Isn't Ready for the Energy Transition*, N.Y. TIMES (June 12, 2023), https://www.nytimes.com/interactive/2023/06/12/climate/us-electric-grid-energy-transition.html [https://perma.cc/4JHG-AHQJ].

^{16.} Amy Wenk, *Georgia Tops Nation in Clean Energy Investment Since the Inflation Reduction Act*, ATLANTA BUS. CHRON., https://www.bizjournals.com/atlanta/news/2023/02/09/georgia-clean-energy-investment-tops-nation.html [https://perma.cc/K3HN-5CMQ] (Apr. 20, 2023, 12:39 PM) ("The state has attracted eight projects worth \$15.27 billion in the six months since the passage of the [IRA], which provides billions in tax incentives for clean technology. That's the highest dollar value of new projects in the U.S., according to a report from the nonprofit Climate Power.").

^{17.} Id.

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only part of the story of a more sustainable and equitable energy transition. The state and the rest of the nation must also measure the success of our ongoing energy transition by tracking whether the transition creates opportunities to improve the lives of all Americans, particularly for low-income and minority populations. To significantly delay the benefits of the ongoing transition to cleaner and cheaper energy-related resources to historically disadvantaged communities is effectively to deny truly transformative benefits to those with greatest need.