

# POLICY BRIEF

## RECOMMENDATIONS FOR THE NEW ADMINISTRATION

## Grids and Renewables

**Julie A. Cohn, Ph.D.**, Nonresident Scholar, Center for Energy Studies

**Olivera Jankovska, M.Sc.**, Nonresident Fellow, Center for Energy Studies

**Kenneth B. Medlock III, Ph.D.**, James A. Baker, III, and Susan G. Baker Fellow in Energy and Resource Economics, and Senior Director, Center for Energy Studies

*This brief is part of a series of policy recommendations for the administration of President Joe Biden. Focusing on a range of important issues facing the country, the briefs are intended to provide decision-makers with relevant and effective ideas for addressing domestic and foreign policy priorities. View the entire series at [www.bakerinstitute.org/recommendations-2021](http://www.bakerinstitute.org/recommendations-2021).*

Technical innovation, federal and state tax policy, and public demand have combined to make utility-scale wind and solar power development not only desirable but also economically feasible. Yet the nation's electricity highway—the three major grids over which most power travels from generators to customers—poses a major challenge to our renewable energy future.<sup>1</sup>

Our transmission infrastructure is aging, a century old in some places. But more importantly, it is configured to support 20th century power generation solutions—with the highest capacity transmission lines linking large fossil-fuel-powered, nuclear-powered, and hydroelectric plants into our networks. The nation's best wind and solar resources occur in regions often remote from major population centers and often served by inadequate transmission lines, and sometimes none at all. To take advantage of our abundant wind and solar resources, we must permit and invest in a high-capacity transmission infrastructure, some of which will cross state borders, that connects intermittent generating facilities with each other, with traditional power plants, and with electricity users.

Across the country, aspirational transmission projects languish in the design phase due to persistent challenges to building this critical new infrastructure:

- Multiple state agencies as well as the Federal Energy Regulatory Commission (FERC) regulate transmission lines.<sup>2</sup>
- States, local governments, and regional authorities oppose transmission lines that cross their boundaries without offering direct delivery of electricity.
- Landowners often object to the loss of use of part of their land to unsightly transmission lines.
- Incumbent power generators and transmission service providers oppose new transmission lines that threaten their market power.
- Differing state-by-state rules regarding cost recovery complicate the financing of new transmission infrastructure.
- State laws granting the right of eminent domain to transmission service providers vary.
- Giant transmission lines are not without environmental impacts. New lines require the use of natural resources to



**To take advantage of our abundant wind and solar resources, we must permit and invest in a high-capacity transmission infrastructure, some of which will cross state borders, that connects intermittent generating facilities with each other, with traditional power plants, and with electricity users.**

**Our transmission infrastructure is aging, a century old in some places ... it is configured to support 20th century power generation solutions.**

manufacture and transport physical components, and their siting can affect ecosystems, and will change the landscape.

- The chicken-and-egg problem plagues transmission planning. Wind and solar developers are reluctant to invest in new projects without a guarantee of power transmission; and transmission service providers are reluctant to invest in new lines without a guarantee of new wind and solar using the lines.
- Lack of easily accessible, comprehensive, and comprehensible data on age, capacity, location, circuit-miles, and condition of existing transmission lines hampers planning.

The Texas Competitive Renewable Energy Zone (CREZ) initiative, authorized by the state legislature in 2005 and completed by the start of 2014, addressed many of these challenges head on.<sup>3</sup> The project offers insights into how, on a national level, we might facilitate investment in new power transmission infrastructure, while highlighting the hurdles we'll have to overcome. As the CREZ case shows, without a grid, there is no utility-scale green.

**TEXAS CREZ ACCOMPLISHMENTS**

Following implementation of the CREZ initiative, Texas exceeded all anticipated goals for development of wind power within the state, and rose to the top of state wind power production across the country. Through CREZ, the Texas Public Utility Commission (PUCT) identified broad areas with great wind potential as the priority zones for utility-scale renewables development. The commission then identified transmission corridors, selected transmission service providers, and delineated the specific routes for high-capacity transmission lines. The PUCT also directed incumbent transmission line owners to upgrade and expand capacity of relevant existing power lines.

By 2014, when transmission service providers had completed 3,600 circuit miles of new 345 kV power lines, Texas wind developers had also added about 10,000 MW of new installed generating capacity. Texas

led the country in new wind development, total wind development, percent of wind generation in the power mix, and addition of new high-capacity power lines to the nation's networks.

**POLICY RECOMMENDATIONS**

Texas' successful completion of the CREZ initiative can, in the first instance, be attributed to a political commitment to renewables—expressed through the state's renewable portfolio standard—accompanied by an essential and full-throated commitment to new and upgraded transmission infrastructure that expedited permitting. Texas provides a model for overcoming the complexities of infrastructure development that can be applied both regionally and nationally.

**Streamline permitting and regulation at the national level.**

The Texas Legislature designated the PUCT as the central decision-maker, and authorized study of priority zones for renewable energy development and determination of transmission requirements and siting. This bolstered financial decisions by removing uncertainty and securing market access for new generation resources, thus expediting the expansion of renewable energy in Texas.

**Establish as an agency priority coordination between the federal government and states and between states.**

Recognizing that Texas is unique in terms of its ability to develop infrastructure that in other states requires multi-state and diverse stakeholder input, it is imperative for the federal government to develop a pathway for siting important backbone transmission infrastructure.

**Develop legislative and regulatory guidance for broad stakeholder input, including from private citizens, that sets standards for transparent decision-making.**

Success in Texas followed from proactive engagement with community leaders and other local stakeholders to build support for

development of utility-scale renewables. This should serve as a model for efforts to scale renewables in other regions and nationally.

### Regulate full-cost recovery for transmission projects.

In the state of Texas, transmission investment costs are recovered through a postage-stamp rate charged to all ratepayers connected to ERCOT, regardless of the distance between the renewable generation facility and the point of delivery.

A cost-effective, broadly supported, and technically feasible transition to a renewable future depends on updated and expanded transmission networks. Effective planning rests on access to good, usable data about the existing infrastructure. A successful policy framework will address the nation's current system of distributed regulatory authority, uncoordinated cost-recovery and eminent domain policies, and diverse state-level commitments to renewables. The concerns of multiple stakeholders—for example investors, technology developers, incumbent energy companies and transmission service providers, environmentalists, local and regional associations and governments, and landowners—will frame the final cost, size, location, and time-to-completion of new infrastructure projects. A comprehensive national renewables and transmission infrastructure policy, coordinated with states and with multiple interest groups, can speed progress toward a stronger, more reliable, and greener power system in this country.

### ENDNOTES

1. The majority of electric power in the continental United States is transmitted across the Eastern Interconnection, serving states east of the Rocky Mountains and parts of Canada; the Western Interconnection, serving states west of the Rocky Mountains, parts of Canada, and parts of Mexico; and the Texas Interconnection, serving most of Texas.

2. Becky H. Diffen, "Competitive Renewable Energy Zones: How the Texas Wind Industry is Cracking the Chicken & Egg Problem," *Rocky Mountain Mineral Law Foundation Journal* 46, no. 1 (2009).

3. For a more detailed analysis of the Texas CREZ initiative, see Julie Cohn and Olivera Jankovska, *Texas CREZ Lines: How Stakeholders Shape Major Energy Infrastructure Projects*, Center for Energy Studies, Rice University's Baker Institute for Public Policy, <https://doi.org/10.25613/261m-4215>.

### AUTHORS

**Julie A. Cohn, Ph.D.**, is a nonresident scholar for the Center for Energy Studies and a research historian in the Center for Public History at the University of Houston. Her work focuses on energy infrastructures, environmental history, technological change, and the relationships between government, business, and the public.

**Olivera Jankovska, M.Sc.**, is a nonresident fellow for the Center for Energy Studies and manager at Essentia Advisory Partners specializing in international electricity and gas markets. Her consulting and research areas of expertise include energy policy and modeling, Mexico energy reform, environmental regulations, and international trade and development.

**Kenneth B. Medlock III, Ph.D.**, is the James A. Baker, III, and Susan G. Baker Fellow in Energy and Resource Economics at the Baker Institute and the senior director of the [Center for Energy Studies](#). He is also the director of the Masters of Energy Economics program, holds adjunct professor appointments in the Department of Economics and the Department of Civil and Environmental Engineering, and is the chair of the faculty advisory board at the Energy and Environment Initiative at Rice University.

center for  
**ENERGYSTUDIES**  
Rice University's Baker Institute for Public Policy

See more policy briefs at:

[www.bakerinstitute.org/policy-briefs](http://www.bakerinstitute.org/policy-briefs)

This publication was written by a researcher (or researchers) who participated in a Baker Institute project. Wherever feasible, this research is reviewed by outside experts before it is released. However, the views expressed herein are those of the individual author(s), and do not necessarily represent the views of Rice University's Baker Institute for Public Policy.

© 2021 Rice University's Baker Institute for Public Policy

This material may be quoted or reproduced without prior permission, provided appropriate credit is given to the author and Rice University's Baker Institute for Public Policy.

Cite as:

**Cohn, Julie, Olivera Jankovska, and Kenneth B. Medlock III. *Grids and Renewables*. 2021. Policy brief: Recommendations for the New Administration. Policy brief: Recommendations for the New Administration. 02.22.21. Rice University's Baker Institute for Public Policy, Houston, Texas.**

<https://doi.org/10.25613/sznm-bz24>