



COLUMBIA GLOBAL ENERGY DIALOGUE

Drivers of Electricity Prices and Load Growth in the United States: Insights from a CGEP Roundtable Series

By **Diego Rivera Rivota**, **Douglas Arent**, **David Sandalow**, and **Robin Millican**

Top discussion points

- Multiple factors are affecting electricity prices. Large loads have not been a principal driver of price increases, and in some locations have led to deflationary pricing.
- Price inflation nationally, however, is increasing, and it will likely rise further under growing demand pressures, including from large load growth.
- Policies, regulations, and contracts are being rolled out across the country that address large loads, and particularly data center loads, to assure non-inflationary impacts on other ratepayers.
- Varying regulatory and market designs have had substantially different impacts on electricity prices and offer useful examples for utility regulation modernization.

Electricity prices in many parts of the United States are facing multiple pressures, with load growth not experienced in decades, increased resiliency investment requirements, fuel cost fluctuations, policy driven generation costs, and extreme-event cost impacts. Rising electricity prices have become a contentious political issue that has fueled public outcry and a search for causes, including outdated regulatory constructs, challenges associated with particular renewable or fossil energy sources, and new large corporate power uses straining local grids.

Electricity price formation, however, is complex—spanning generation, transmission, distribution, location, and regulatory economics—and superficial explanations miss the mark. The drivers of

This event summary is part of the Electricity Price Research Initiative and was made possible with support from [Google.org](https://www.google.org). It reflects the authors' understanding of key points made in the course of the three roundtables. It does not necessarily represent the views of [Google.org](https://www.google.org), the Center on Global Energy Policy, or Columbia University. The piece may be subject to further revision.



price increases in one region differ markedly from those in another, meaning no one-size-fits-all explanation or solution exists. Meanwhile, varying regional approaches to regulating power companies and enabling large new sources of supply and demand result in different pricing dynamics.

This paper compiles key insights on electricity prices and load growth from three roundtables organized by the Center on Global Energy Policy (CGEP) at Columbia University SIPA. The roundtables brought together regulators, utility executives, academics, policymakers, and technology-sector representatives across different regions of the US. The first took place in New York City on December 17, 2025, focusing on the Northeast. The second occurred on February 5, 2026, in Washington DC, to discuss federal actions. Finally, the third was held in Austin, Texas, on March 19, 2026, focusing on Texas and the Electric Reliability Council of Texas (ERCOT) market.

This summary of the discussions begins with a look at facts and data on price drivers over the past five years. It then summarizes key insights from the roundtables about actions taking place around the country that are impacting power prices. Finally, the authors highlight ongoing efforts to address power price inflation across the suite of potential drivers, with a core focus on load growth.

A number of takeaways were emphasized at the roundtables: (i) there are multiple drivers of electricity prices, and large loads have not been a principal driver; in fact, they have led to deflationary pricing in many locations, (ii) price inflation is increasing under increased demand pressure, though, including from large load growth, (iii) multiple policy, regulatory, and contractual solutions are being rolled out across the country that provide a suite of examples in which large loads, and in particular data center loads, are being addressed to assure non-inflationary impacts on other ratepayers, and (iv) regulatory and market design differences have substantial differing impacts on electricity prices and offer a rich environment for utility regulation modernization.

All three roundtables converged on the view that a portfolio approach—combining generation expansion, demand flexibility, efficiency, transmission investment, fair cost allocation, and regulatory reform—is necessary. The appropriate mix will vary by region.

Scale and Nature of Load Growth

Data and analysis were presented at the roundtables on drivers of electricity prices, which have been dominated by infrastructure costs driven by extreme event impacts and necessary upgrades in most jurisdictions across the country.¹ Load growth, including that attributable to data centers, has to date rarely been associated with price increases in locations where supply is adequate to spread fixed costs across larger overall demand, which leads to lower overall marginal costs. Manufacturing reshoring, digital services, electric vehicle (EV) adoption, electrification more broadly, crypto, and semiconductor fabrication were all mentioned at the roundtables as



contributing to recent load growth—often described as comparable to the air conditioning boom.

According to participants, Texas alone has over 200 gigawatts (GW) of load in its interconnection queue, with additional speculative interest of about 130 GW not yet formally processed—though these numbers are widely understood to be significantly overstated. National figures vary widely, and rationalization mechanisms such as securitization payments have led to a considerable reduction in demand forecast when implemented.

There was agreement across the roundtables about a critical need for more transparent, timely, and verified load forecast data.

Drivers of Electricity Price Changes

Participants mentioned that while nominal retail electricity prices have risen over the past five years, increases have largely tracked general inflation. When adjusted for inflation, real prices at the national level in 2024 were roughly equivalent to 2019 levels and approximately 8% below 2010 levels.² However, over the past year (2024–2025), retail prices outpaced inflation both nationally and across a growing number of states. Participants expect the situation to worsen, stating that investor-owned utilities' (IOUs) rate-increase requests in 2025 reached the highest level since the 1980s, and that regulatory commissions have been approving a larger share of rate increases than usual.

Other participants argued that price increases are a regional and household-specific dynamic and not a national affordability crisis. States in the Northeast and California have experienced above-inflation increases, while prices have remained relatively steady or declined in real terms across much of the interior of the country.

Participants said that capacity auction markets—particularly in the PJM Interconnection (13 states in the Mid-Atlantic and Midwest, and Washington DC)—have reacted to anticipated load growth, perhaps overstated by a factor of 2–3, which has contributed to outsized capacity price spikes.

But residential customers have borne a disproportionate share of cost increases relative to commercial and industrial customers (roughly 27% vs. 19% from 2019 to 2024).³ Participants noted that this is in part because utility cost-allocation methods tend to shield large commercial users.

Primary Drivers of Price Increases

Electricity price increases have been uneven and influenced by multiple drivers, including some state- and local-specific dynamics. Data⁴ indicate a key factor has been distribution and transmission costs, which have spiked in all major regions. This can be attributed to a host of reasons including states hardening their grids, including from storm cost recovery; wildfire

mitigation costs; an aging grid, which requires upgrading; and equipment cost inflation (poles, transformers, switchgear) rising well above the Consumer Price Index.

Natural gas price volatility has also contributed substantially, particularly for states with a high share of gas in their generation mix, such as those in the Northeast, Florida, Nevada, and Pennsylvania.

Renewable portfolio standards (RPS) and net metering policies have modestly increased prices in a handful of states, primarily in the Mid-Atlantic and New England, though 75% of renewable buildout has occurred in non-RPS states.⁵

According to some participants, PJM's capacity market has been facing structural challenges for years, with historically suppressed capacity prices that failed to send adequate investment signals. It was widely agreed that the anticipated load growth from data centers has now collided with an underbuilt system, producing sharp auction price increases.

Data Centers' Effect on Prices: A Mixed Picture

Participants noted that in states where low-cost supply was available and tariff structures ensured new loads bore system costs, load growth spread fixed costs over a larger base and moderated price increases. States with the highest load growth have generally seen the smallest price increases or even real-term price declines.

However, this relationship is not unidirectional. Load growth can raise prices when supply and delivery constraints make marginal supply expensive. As noted earlier, anticipated data center load growth in PJM has contributed to sharply higher capacity auction clearing prices.

The relationship between load growth and residential prices is less clear than its effect on wholesale prices. Whether residential customers ultimately benefit or are harmed depends heavily on regulatory cost-allocation decisions made by public utility commissions.

Participants said data centers have a higher willingness to pay for electricity than historical large industrial customers (e.g., aluminum smelters) that competed primarily by seeking the lowest available rates. This shift creates a new dynamic in how states and utilities can approach large load customers.

Reliability and Grid Adequacy Concerns

Participants discussed the Talen-AWS co-location case—placing an Amazon data center at the Susquehanna nuclear plant in Pennsylvania—saying it illustrates a central tension: a project that appeared to be a win-win for the nuclear plant's economics was ultimately rejected by the Federal Energy Regulatory Commission (FERC) on resource adequacy and affordability grounds. Taking



already-limited capacity behind the meter would reduce supply available to the market, raising prices and threatening reliability during peak demand periods.

Participants expressed significant concern that a flood of similar co-location deals—absent a clear regulatory framework—could create genuine resource adequacy challenges during extreme weather events. Data centers require ultra-high reliability, which creates a mismatch with the intermittency of renewables and leads hyperscalers to prefer firm power sources such as natural gas and nuclear. Further, participants noted recent North American Electric Reliability Corporation filings regarding data centers' drop in demand having potential reliability impacts on serving grids, and thus the need for solutions to address loss of load potential impacts.

Transmission bottlenecks are also a major reliability constraint. ERCOT has declared its transmission system at or near capacity in many areas.⁶ In PJM, interconnection and planning processes lag far behind the pace of new load requests.

Participants said public support for data center development will be contingent on grid reliability. A major blackout or curtailment caused by or associated with a data center could rapidly shift public and political sentiment against data center expansion (beyond the current opposition building at some local levels across the country).

Regulatory and Policy Responses

Federal Landscape

FERC has been deliberating on what participants described as potentially the most significant rulemaking in 30 years: a framework governing how large loads (including data centers) interconnect with the grid.⁷ The core proposed trade-off is faster interconnection for hyperscalers in exchange for (i) flexibility commitments (curtailment during peak hours) and (ii) paying for the system upgrades their loads require.

While participants acknowledged the White House announcement alongside PJM governors that called for an emergency capacity auction, reflecting bipartisan political urgency on the issue, they also noted that the announcement was light on details and lacked binding enforcement mechanisms. But they thought the ratepayer protection pledge—in which major hyperscalers committed publicly not to shift their costs onto residential consumers—was generally a positive directional signal. While not legally binding, such a public commitment makes it politically harder to walk back.

Expanding FERC's jurisdiction over large load interconnection would be a major transformation. Traditionally, retail service and large load siting have been the domain of state regulators. Participants said such a shift would likely face significant opposition from states.



Participants also noted that energy policy has become highly politicized, complicating technically driven decision-making. Within the current administration, participants noted tension between those prioritizing national security (winning the AI race against China) and those prioritizing consumer affordability.

State Legislative Responses

Participants noted that there has been a ninefold increase in state bills related to data centers over the past year. They said the most popular enacted legislation offers tax incentives to attract data centers, while the second involves ratepayer protection and cost-allocation rules.

Despite substantial legislative activity, participants acknowledged that very few bills have passed. A number of bills focused on environmental and water-use impacts of data centers, for example, have been introduced but almost none have passed.

Kansas and Minnesota are notable exceptions, with both reinforcing through regulatory or legislative action the emerging consensus that large electricity buyers should bear a greater share of system costs. And Texas enacted the first “kill switch” provision, allowing state authorities to curtail data center operations under defined conditions.

Texas has also implemented a law that includes approximately \$50,000/megawatt in non-refundable interconnection fees, additional financial security requirements, and a tiered interconnection process to manage speculative queue entries and accelerate shovel-ready projects.

Participants noted that emerging regulatory approaches tend to focus on the magnitude of new loads rather than the specific type of customer—shaping policy around how much power is required rather than whether it is a data center, EV charging depot, or manufacturer. States without data centers are also drafting similar legislation in anticipation of future load growth.

Cost Allocation Approaches

The central policy debate that arose at the roundtables was who should pay for the grid upgrades that data center load growth necessitates? Options range from socializing costs across all ratepayers (the traditional utility model) to strict cost-causation approaches where those creating the need pay for it.

Large-load tariff designs are expanding across the country—a vast majority of states are exploring data-center-specific or large-load-specific rate classes, with the goal of preventing cost shifts onto residential customers. The design of these tariffs—and whether they are accompanied by minimum transmission charges—will have significant distributional consequences.



There was a growing consensus among roundtable attendees that regulated utilities' traditional model—where all beneficiaries of transmission share its cost—will need to evolve to better capture cost causation from large loads. The legal framework is uncertain and could create challenges under established utility rate law.

Infrastructure Constraints and the “Speed to Power” Problem

The binding constraint for hyperscalers, participants noted, is not the electricity price but the speed and physical ability to access grid-connected power at scale. Data centers require hundreds of megawatts to gigawatt-scale capacity at a single node, which exceeds current system capacity in many locations.

Supply chain constraints for key components of the power sector are severe and compound the problem: gas turbines, large transformers, and other interconnection infrastructure are in short supply globally, as well as skilled labor.

Two models for reforming interconnection queue dysfunction were discussed at the roundtables. A “first ready, first connect” approach, which would create a race to be ready to receive power, has not yet proven viable given the need to align power sector reliability requirements with load size and location. The second involves cluster studies, where projects in a geographic area are evaluated together, spreading upgrade costs across multiple entrants rather than burdening the first mover with the full system cost, and moreover, where multiple projects get approved simultaneously versus sequentially.

Participants mentioned that an estimated 40 GW of data center capacity nationally is being built or planned “off-grid”—primarily using onsite gas turbines, diesel generators, and batteries—driven largely by interconnection delays. This trend risks creating a parallel, inefficient infrastructure system and reduces the grid's ability to leverage data center flexibility.

ERCOT is seen by some participants as a leading example of adapting planning processes and interconnection rules. ERCOT offers faster interconnection timelines, fewer permitting barriers, abundant land, diverse resources, and real-time telemetry for load management. Some participants said PJM, by contrast, lacks the jurisdictional authority and technical capabilities to effectively manage large load integration.

Data Center Flexibility as a System Resource

Data centers can function as intelligent, flexible loads rather than passive “black boxes.” For

example, unlike most industrial loads, data centers can potentially shift or throttle workloads—particularly non-time-sensitive AI training tasks—in response to grid conditions.

Participants highlighted that the Electric Power Research Institute’s **Data Center Flexible Load Initiative** (DCFlex)—bringing together 53 organizations including utilities, ISOs, and hyperscalers—has demonstrated proof of concept through pilot projects in Arizona, North Carolina, and France. A second cohort of demonstration projects has been announced recently.⁸

Participants across the roundtables described a best-case scenario in which flexible data centers that respond to grid signals during the handful of critical peak hours per year could allow operators to defer significant transmission and generation investments, ultimately lowering bills for all customers. However, participants said that most hyperscalers have so far resisted hard curtailment commitments and only a few have moved toward binding flexibility arrangements. The 5-9s reliability standard (electricity availability 99.999% of the time) remains a significant barrier to broader demand response participation.

Participants said that requiring flexibility commitments as a condition of faster interconnection represents a fair exchange and a politically tractable solution.

Affordability Impacts and Distributional Concerns

While most participants agreed that a uniform, national electricity affordability crisis does not exist, they highlighted that approximately one-third of US households face electricity bill burdens exceeding 5% of household income. Low-income households are disproportionately affected, and many do not have the extra money needed for energy efficiency improvements.

Participants concurred that affordability has become a type of “social license” for data center development and AI expansion more broadly. Political opposition—spanning both progressive Democrats and conservative Republicans in primary elections—is increasingly framed around data centers’ contributions to higher electricity bills.

Participants exchanged views on the many public policy goals (wildfire mitigation, clean energy programs, low-income assistance) that are increasingly funded through electricity rates rather than general taxation, shifting costs onto utility customers in ways that are regressive and difficult for customers to understand.

Local communities near data centers also face noise pollution, significant water consumption, and land-use conflicts. In the view of roundtable participants, these localized negative impacts complicate siting decisions, even as data centers generate tax revenue and create economic



activity at the local level.

Some participants proposed a mechanism requiring hyperscalers to invest directly in community-level energy efficiency programs near their data centers. This would address affordability concerns, free up generation capacity, reduce emissions, and improve the social acceptance of data center development—in what they described as a rarely genuine win-win proposition.

Geopolitical and Strategic Dimensions

AI and data center development is increasingly framed through a US-China competition lens. China has a national computing program aligned with its broader industrial and technological strategy. Some participants argued that this geopolitical framing provides useful political momentum for grid investment. However, others cautioned that political dynamics around AI are fast-moving and can shift quickly. Participants agreed that public narratives around data centers' energy and water consumption could turn against the industry, as has happened with cryptocurrency mining.

Some participants cautioned that perhaps only when a major hyperscaler relocates a significant data center project to Canada, Europe, or Japan due to US grid constraints will bolder regulatory and political action be catalyzed. Participants agreed that policymakers should not wait for this signal.

Some participants questioned whether the current energy-intensive trajectory of AI development is strictly necessary to maintain US leadership, suggesting that efficiency improvements and possibly global coordination could reduce both geopolitical risk and energy system strain.

Roundtable Proposals for Managing Large Load Growth

Data Center Cost Allocation

There was broad consensus among participants that large electricity buyers should bear the costs they impose on the system, including the grid upgrades, capacity additions, and reliability investments their loads require. This principle of cost causation was the single most consistent theme across all three roundtables.

Large-load tariff classes, minimum transmission charges, non-refundable interconnection fees, and financial security requirements all represent mechanisms to operationalize this principle. Their effectiveness will depend heavily on regulatory design and enforcement.

Demand Flexibility and Grid Intelligence

Demand flexibility from data centers—curtailment during the relatively few peak hours per year—



is a high-value, underutilized resource, according to participants. Technical demonstrations have proven its feasibility. The barrier is regulatory design, not technology.

Some participants mentioned that AI itself can be a resource for grid management—helping clear clogged interconnection queues, improving forecasting, and optimizing dispatch. They think there is a real opportunity for AI-enabled grid modernization.

Real-time, digitized energy pricing dashboards were also mentioned at the roundtables. Potentially accessible at the consumer level, they could improve price signals, enable demand response, and help consumers understand and manage their electricity costs.

Interconnection and Transmission Reform

Participants widely concurred that federal permitting reform is essential and that currently there is bipartisan support for some type of reform. Participants agreed too that canceling or reversing permitted projects from one presidential administration to the next is a significant impediment to long-term infrastructure investment.

Participants mentioned that interregional transmission planning is underdeveloped in the US relative to comparable countries. Connecting regional markets could allow cheaper generation to serve constrained areas and reduce the need for expensive local capacity additions.

Utility and Regulatory Model Reform

Utilities' current revenue model rewards capital expenditure (building more assets) rather than efficiency or cost savings. Some participants suggested that a shift toward total expenditure or performance-based regulation—as implemented in the UK—could better align utility incentives with consumer interests.

Participants also mentioned that more dynamic tariff design—including time-of-use pricing, differentiated rates by load type, and rate structures that better reflect cost causation—is needed to manage peak demand from data centers and other large loads.

And participants discussed structural market dysfunction. They said backstop capacity auctions with long-term commitments (at 15-year periods) and removing price caps that suppress build signals could help in situations like the PJM context, compared to the capacity auction mechanism.

Energy Efficiency, Grid Efficiency, and Demand-Side Measures

Energy efficiency is consistently undervalued by participants as a tool for addressing both



affordability and capacity constraints. Expanding and better targeting efficiency programs—particularly to low-income households that cannot afford such upgrades themselves—was a recurring recommendation across roundtables.

Participants also mentioned the underutilized opportunity of data center waste heat recovery, already practiced in parts of Europe. In this process, data centers supply heat for district heating systems that reduces net energy system costs.

Most participants agreed that there are promising technological advancements for transmission and distribution, including grid enhancing technologies that allow more throughput using most of the existing infrastructure.

The co-location of data center electricity generation (particularly gas turbines and batteries) with the grid—rather than purely behind the meter—was also discussed as a potential way to convert what are currently isolated demand centers into grid-facing assets, improving both utilization and system reliability.

Cross-Cutting Themes and Key Tensions

Participants discussed tensions that need to be resolved and work yet to do for large load growth to be accommodated successfully within the broader US energy system, including the following:

- **Speed versus stability:** Hyperscalers need power rapidly, but the regulatory and infrastructure systems are not designed for this pace. The tension between deployment speed and thorough planning is one of the defining challenges of this moment.
- **Federal versus state jurisdiction:** Participants said questions about who has authority over large load interconnection, cost allocation, and siting are unresolved. Expanding FERC's role could be transformative but could face significant political and legal resistance from states.
- **Centralized versus decentralized solutions:** There is a fundamental unresolved tension between traditional, utility-scale, centralized grid expansion and more distributed approaches (e.g., behind-the-meter generation, microgrids, and distributed energy resources). Both paths have costs and trade-offs.
- **Stranded asset risk:** Some participants cautioned that if projected data center loads do not materialize at forecasted levels, significant infrastructure investments could become stranded assets. They think this risk is inadequately addressed in current planning frameworks.
- **No single solution:** All three roundtables converged on the view that a portfolio approach—

combining generation expansion, demand flexibility, efficiency, transmission investment, fair cost allocation, and regulatory reform—is necessary. The appropriate mix will vary by region.

- Political will: The political window is currently open but may not remain so indefinitely. There is a rare moment of bipartisan urgency around this issue, but the political dynamics can shift quickly, and the opportunity to establish durable frameworks may be time-limited.

Notes

1. Ryan H. Wiser et al., “Retail Electricity Price Trends and Drivers: Data Update–2026 Edition,” Lawrence Berkeley National Laboratory and The Brattle Group, March 2026, <https://emp.lbl.gov/publications/retail-electricity-price-trends-and>.
2. Ibid.
3. Ibid.
4. Ibid.
5. Ibid.
6. ERCOT, “Report on Existing and Potential Electric System Constraints and Needs,” December 2025, <https://www.ercot.com/files/docs/2025/12/23/2025-Report-on-Existing-and-Potential-Electric-System-Constraints-and-Needs.pdf>.
7. Federal Energy Regulatory Commission, “Order Regarding Intent to Act re Interconnection of Large Loads to the Interstate Transmission System,” docket no. RM26–4, April 16, 2026, https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20260416-3003&optimized=false&sid=a0742aa8-47f0-45e9-bec6-e42b1141e08c.
8. Electric Power Research Institute, “EPRI’s DCFlex Initiative Expands to Nine Demonstration Sites Across US, Europe,” press release, February 2, 2026, <https://www.epri.com/about/media-resources/press-release/rbbbpmk6zvt6exn9rgqlwlmrwhrhqwis>.

About the Authors

Diego Rivera Rivota is a Senior Research Associate at the Center on Global Energy Policy (CGEP) at Columbia University’s School of International and Public Affairs (SIPA). He has over 10 years of experience working on the intersection of energy, policy and international cooperation across Asia, Europe and the Americas. Diego’s research and practical experience focuses on energy policy and geopolitics in Latin America, particularly on natural gas and LNG markets, critical minerals supply chains, and their role in the low-carbon energy transition.



Prior to joining CGEP, Diego was a visiting researcher at the Asia Pacific Energy Research Centre (APERC) based in Tokyo, Japan for five years. He was a lead author of the APERC Gas Report and also co-authored several other APEC reports and publications, including the 7th and 8th editions of the APEC Energy Outlook, APERC's flagship publication. Diego also coordinated cooperative projects related to natural gas, LNG markets, energy security and energy efficiency. He presented APERC's research extensively across the Asia-Pacific region.

In previous roles, Diego worked on natural gas pipeline and electricity infrastructure development as advisor to the CEO at Mexico's state-owned utility, CFE (Comisión Federal de Electricidad). Prior to this, Diego completed an internship at the Permanent Mission of Mexico to the Organisation for Economic Co-operation and Development (OECD) and worked at Mexico's Office of the President as a junior staffer.

Diego holds a Bachelor's degree in International Relations from the Instituto Tecnológico Autónomo de México (ITAM) and a Master's in public policy with a specialization in Energy and the Former Soviet Union region from Sciences Po Paris. Diego speaks Spanish, English, French, Russian and Portuguese.

Douglas J. Arent is a Global Fellow at the Columbia University Center on Global Energy Policy and a Distinguished Fellow of the World Economic Forum. Dr. Arent brings more than three decades of experience and expertise in energy systems, electric power, and international energy policy.

Dr. Arent is Emeritus Executive Director at the NREL Foundation and holds emeritus status at the National Laboratory of the Rockies (previously the National Renewable Energy Laboratory), where he served for nearly thirty years. During his term, he was a member of the laboratory's senior leadership team and helped guide its growth to an annual budget exceeding \$1 billion.

He has served on numerous national and international advisory and study bodies, including committees of the National Academy of Sciences, the National Petroleum Council, and the Intergovernmental Panel on Climate Change.

He has authored more than 150 peer reviewed articles and is the author of *Our Renewable Energy Future: The Remarkable Story of How Renewable Energy Will Become the Basis for Our Lives* (World Scientific, 2024), which examines the technological, economic, and policy forces driving the global transition to renewable energy. His work has been published in *Science*, *Nature Energy*, *Joule*, and *Energy Policy*, among others

He holds a BA from Harvey Mudd College, an MBA from Regis University, and a PhD from Princeton University.

David Sandalow is the Inaugural Fellow at the Center on Global Energy Policy (CGEP) and Co-Director of the Energy and Environment Concentration at the School of International and Public



Affairs at Columbia University. He is the lead author, most recently, of the [Sustainable Data Centers Roadmap](#) (October 2025), [Artificial Intelligence for Climate Change Mitigation Roadmap \(Second Edition\)](#) (November 2024) and [Guide to Chinese Climate Policy](#) (October 2022). Mr. Sandalow hosts the [AI, Energy and Climate Podcast](#).

Mr. Sandalow chairs the [ICEF Innovation Roadmap Project](#). In that capacity, he has led development of roadmaps on sustainable data centers, [artificial intelligence for climate change mitigation](#), [low-carbon ammonia](#), [biomass carbon removal and storage](#), [industrial decarbonization](#), [direct air capture](#) and [carbon dioxide utilization](#), among other topics.

Mr. Sandalow founded and directs CGEP's US-China Program. He serves on the board of the National Committee on U.S.-China Relations and teaches a short course on the energy transition each year as a Distinguished Visiting Professor in the Schwarzman Scholars Program at Tsinghua University.

Mr. Sandalow has served in senior positions at the White House, State Department and U.S. Department of Energy. He came to Columbia from the U.S. Department of Energy, where he served as Under Secretary of Energy (Acting) and Assistant Secretary for Policy & International Affairs. Prior to serving at DOE, Mr. Sandalow was a Senior Fellow at the Brookings Institution. He has served as Assistant Secretary of State for Oceans, Environment & Science and a Senior Director on the National Security Council staff.

Mr. Sandalow writes and speaks widely on energy and climate policy. In addition to the publications mentioned above, his writings include [Data Centers and Their Energy Use: Trends in State Capitals](#), CGEP (December 15, 2025) (lead author); [Can AI Transform the Power Sector?](#), CGEP (December 4, 2024) (lead author); [Using AI to Craft Better Climate Policy](#), Wall Street Journal (July 20, 2023); [Greenhouse Gas Emissions from the Food System: Building the Evidence Base](#), Environmental Research Letters (June 2021) (co-author); [Finding and Fixing Food System Emissions: The Double Helix of Science and Policy](#), Environmental Research Letters (June 2021) (co-author); [Food and Climate InfoGuide](#), CGEP (May 2021) (lead author); [Energizing America](#), CGEP (September 2020) (co-author); [Leveraging State Funds for Clean Energy](#), CGEP (September 2020) (with Richard Kauffman); [Green Stimulus Proposals in China and the United States](#), CGEP (August 2020) (with Xu Qinhu); [China's Response to Climate Change: A Study in Contrasts](#), Asia Society Policy Institute (July 2020); [China and the Oil Price War](#), CGEP (March 2020) (co-author); [Decarbonizing Space Heating With Air Source Heat Pumps](#) (December 2019, co-author); [Electric Vehicle Charging in China and the United States](#) (February 2019) (with Anders Hove); [A Natural Gas Giant Awakens](#) (June 2018) (lead author); [The Geopolitics of Renewable Energy](#) (2017) (CGEP and Harvard Kennedy School, co-lead author); [Financing Solar and Wind Power: Lessons from Oil and Gas](#) (CGEP, 2017, co-author); and [The History and Future of the Clean Energy Ministerial](#) (CGEP, 2016). Other works include [Plug-In Electric Vehicles: What Role for Washington?](#) (Brookings Institution Press,



2009) (editor), [Overcoming Obstacles to U.S.-China Cooperation on Climate Change](#) (Brookings Institution, 2009) (with Ken Lieberthal) and [Freedom from Oil](#) (McGraw-Hill, 2007).

Mr. Sandalow is a member of the Zayed Sustainability Prize Selection Committee, Electric Drive Transport Association's "Hall of Fame" and Council on Foreign Relations. He is a director of Enagás, SA, a Distinguished Fellow at the Oxford Institute for Energy Studies and a Distinguished Senior Fellow at the Atlantic Council. Mr. Sandalow is a graduate of the University of Michigan Law School and Yale College.

Robin Millican is the Director of Research Programs and Strategic Partnerships at Columbia University SIPA's Center on Global Energy Policy (CGEP), where she provides strategic oversight and coordination of the Center's research agenda, ensuring rigor, coherence, and policy relevance across CGEP's portfolio of interdisciplinary work. She brings more than fifteen years of experience in organizational strategy, program design, and U.S. and international energy policy.

Prior to joining Columbia, Ms. Millican served as Head of Strategic Initiatives and Integration at Breakthrough Energy, the global organization founded by Bill Gates to accelerate the transition to affordable, reliable, and clean energy. In that capacity, she acted as principal advisor to the executive leadership team on cross-organizational strategy and led the development of new initiatives to support portfolio companies, strengthen global market capabilities, and enhance analytic support for investment decision-making.

Previously, Ms. Millican served as Senior Director of U.S. Policy and Advocacy at Breakthrough Energy, where she oversaw a team of policy experts, managed a significant annual grantmaking portfolio, and directed strategies to advance federal and state policy priorities across the power, industrial, transportation, buildings, and agriculture sectors. She is recognized for her expertise in climate and energy policy and has provided testimony before the U.S. Congress. She was also a primary contributor to Bill Gates' 2021 book *How to Avoid a Climate Disaster*.

Earlier in her career, Ms. Millican led the energy innovation policy and grantmaking portfolio at Gates Ventures; advised public-sector clients as a strategy consultant with Booz Allen Hamilton; and served as a legislative aide to United States Senator John Cornyn, supporting policy development on energy, environmental, and economic issues.

Ms. Millican serves on boards and advisory councils of several organizations, including ClearPath, Silverado Policy Accelerator, and Nature is Nonpartisan.



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