

Energy Transition

INSIGHTS

January 29, 2025

Energy Transition Year in Review and Look Ahead

The year 2024 saw a remarkable flurry of activity and interest in energy projects in the United States and across the world. We also saw significant rule-making and extensive U.S. Department of Energy funding in the energy sector. The flurry of activity has continued, although with a different focus, under the Trump Administration, as executive orders and expected appointments demonstrate a shift to more of an “all of the above” energy policy. This sustained interest in the energy sector from governments, industry players, and investors is expected to have a significant impact on all aspects of the global economy.

Drawing on our experience advising a range of clients, including government institutions, alternative and traditional energy companies, developers, private equity and venture capital firms, family offices, and financial institutions, and our analysis of recent developments in legislation and rule-making, we outline the major developments and trends from the past year and our expectations for 2025. We encourage you to reach out to us with any questions.

Topics covered:

- [Clash of Administrations](#)
 - [Headwinds for Wind](#)
 - [180° on Oil & Gas](#)
 - [Finally, Permitting Reform \(Maybe?\)](#)
 - [Survival of the Inflation Reduction Act, in Part](#)
 - [Pause on All Federal Grant, Loan and Other Financial Assistance Programs](#)
- [Clash of Jurisdictions – State vs. Federal](#)
- [Loper Bright and the End of Chevron Deference](#)
- [Can Nuclear Resurgence Solve Surging Energy Demand?](#)
- [Renewed Focus on Critical Minerals](#)
- [Continued Opportunities in Energy Storage](#)

New York Washington, D.C. Los Angeles Palo Alto London Paris Frankfurt Brussels
Tokyo Hong Kong Beijing Melbourne Sydney

CLASH OF ADMINISTRATIONS

The Biden Administration ended with a burst of activity intended to buttress an energy transition focused on greater reliance on renewable energy resources and sustainability, including the long-awaited [LNG export study](#), [final hydrogen tax credit rules](#), an executive order prohibiting offshore drilling on 625 million acres of federal waters, [the approval of the 11th commercial scale U.S. offshore wind project](#), and conditional commitments totaling \$22.92 billion granted by the U.S. Department of Energy Loan Programs Office in connection with the Title 17 Energy Infrastructure Reinvestment program. The DOE commitments [capped a busy year for the Loan Programs Office](#), which closed 14 loan guarantees and submitted 15 additional deals for conditional commitment. Each of these actions appears to have been intended to lock in, to the extent legally possible, an ambitious agenda to tackle climate change, reduce greenhouse gas emissions, and expand renewable energy's share of domestic energy production, all supported by the Inflation Reduction Act ("IRA") (enacted in 2022) and the Infrastructure Investment and Jobs Act ("IIJA") (enacted in 2021).

By sharp contrast, a clear push in a new direction emerged in the first days of the new Trump Administration. On Inauguration Day, three executive orders directly addressed the energy economy: "[Declaring a National Emergency on Energy](#)," "[Unleashing American Energy](#)," and "[Initial Rescissions of Harmful Executive Orders and Actions](#)." Key headlines from the new executive actions and orders, and subsequent agency actions, included the following:

Headwinds for Wind:

- The Trump Administration [announced](#) a temporary withdrawal of approvals for any new or renewed wind energy leasing in the Outer Continental Shelf, and directed a review of existing wind energy leases "identifying any legal bases for such removal." The order temporarily halted issuance of new approvals, rights of way, permits, leases or loans for onshore or offshore wind pending completion of a comprehensive assessment and review of Federal wind leasing and permitting practices. Key Trump Administration cabinet appointees Burgum (Interior) and Wright (Energy) have stated that they support an "all of the above" energy policy, but based on the recent executive orders, at least at the moment, this does not appear to extend to wind energy.
- As the order covers leases on federal lands, it is widely expected to have a significant impact on the ability of offshore wind projects to obtain leases and permits going forward. In addition, the review of permitting practices related to wind projects generally could have an adverse effect on federal permits for onshore wind projects. Republican leadership in states such as Texas, where onshore wind is currently responsible for approximately 22% of generation capacity in the state, could oppose the anti-wind policies of the Trump Administration at least with respect to onshore wind projects.

180° on Oil & Gas:

- In addition to [revoking the ban on new offshore oil and gas development](#) implemented by the last Administration, the Trump Administration's executive order on [Unleashing American Energy](#) mandates a restart of the review of applications for approvals of liquefied natural gas ("LNG") export projects "as expeditiously as possible, consistent with applicable law." In flagging key items to consider as part of the public interest test involved in granting LNG export permits to non-Free Trade Agreement countries, the executive order requires consideration of economic and

employment impacts in the United States and the impact on the security of allies and partners that would result from granting the application, which were factors that some viewed as not having been fully considered in the [Energy, Economic and Environmental Assessment of U.S. LNG Exports](#) study published at the end of 2024 in connection with the Biden Administration's "pause" on issuance of LNG export permits that began in January 2024. The U.S. Department of Energy recently extended the comment period for the study of LNG exports to March 2025, providing an opportunity for comments addressing these and other factors. Although the delay will push out the development timelines for LNG projects that have been waiting for permit issuance, the hope of developers is that it will provide time for a more robust public interest analysis and solid basis for the issuance of future permits in order to mitigate the risk of potential legal challenges to their issuance.

- The "[Unleashing American Energy](#)" executive order also directs heads of agencies to review regulations, orders, guidance documents, and other agency actions to identify those that "impose an undue burden on the identification, development, or use of domestic energy resources – with particular attention to oil, natural gas, coal, hydropower, biofuels, critical mineral, and nuclear energy resources." Together with the permitting reform (discussed below) and the "[Declaring a National Emergency on Energy](#)" executive order, the expectation is that the Trump Administration will seek to streamline the permitting of projects in the listed areas. This could open up opportunities for rehearing requests and legal challenges to permits and approvals granted through more expedited means or as a consequence of the executive orders. Although the national emergency umbrella may curtail some of these challenges, the breadth and lack of specificity as to how the national emergency declaration will apply, at least at the moment, may itself open up another path for legal challenges to permits and approvals.

Finally, Permitting Reform (Maybe?):

- Several of the new Trump Administration executive orders, "[Unleashing American Energy](#)," "[Declaring a National Energy Emergency](#)," and "[Temporary Withdrawal of All Areas on the Outer Continental Shelf from Offshore Wind Leasing and Review of the Federal Government's Leasing and Permitting Practices for Wind Projects](#)," specifically address permitting. The "[Unleashing American Energy](#)" executive order references reducing regulatory burdens by streamlining the approval process for energy projects generally (excluding wind). Specifically, it calls for the "immediate review of all agency actions that potentially burden the development of domestic energy resources" and revoked a number of executive orders focused on environmental analysis and the climate crisis.
- Against this backdrop, the bipartisan Energy Permitting Reform Act of 2024, introduced by former Senator Joe Manchin (I-WV) and Senator John Barrasso (R-WY), also seeks to streamline the permitting process for access to oil and gas resources on federal lands and waters, while seeking to expedite the permitting process for U.S. exploitation of rare earth minerals and reduce dependence on China.
- As noted above, the "[Declaring a National Energy Emergency](#)" executive order provides support, and potentially legal protection, for agency action facilitating identification, leasing, siting, production, transportation, refining, and generation of domestic energy resources. However, the scope of the protections that may be offered national emergency declaration in this context is unclear and, despite the emphasis on expedited permitting, initial progress is likely to be slow as agencies conduct a review of permitting processes and propose reforms. These agency actions also are likely to require agency notice and comment periods and may be subject to litigation by environmental (or other) interest groups.

Survival of the Inflation Reduction Act, in Part:

- The IRA incentivizes clean energy production by modifying existing energy-related income tax credits in addition to creating new credits. The IRA also created new ways to monetize tax credits, including by allowing a transfer of such credits. According to the Congressional Research Service,

SULLIVAN & CROMWELL LLP

“[r]esearch has found that transferred tax credits typically sold at 89 to 95 cents on the dollar in 2023 and at slightly higher values in early 2024,” with “purchases exceeding \$100 million traded at an average of 95 cents on the dollar” in 2023.¹

- President Trump has previously indicated a desire to repeal the IRA. But with a slim majority in Congress, it is uncertain whether the IRA will be repealed in its entirety, as some aspects of the IRA, particularly those relating to certain energy tax credits, such as hydrogen production credits under Section 45V credits, have enjoyed bipartisan support. In a [letter](#) to House Speaker Mike Johnson in August 2024, 18 members of the House Republican Conference criticized the IRA as a “deeply flawed bill” but nevertheless opposed a full repeal of energy tax credits, stating that “[e]nergy tax credits have spurred innovation, incentivized investment, and created good jobs in many parts of the country – including many districts represented by members of our conference.”
- The last Administration issued a range of new guidance under the IRA in its final weeks, including final regulations relating to credits for (1) technology-neutral [clean electricity production and clean electricity investment](#), (2) [production of clean hydrogen energy](#), and (3) qualifying investments [under section 48](#). Any rules not already in effect (including proposed regulations and [notices](#)) face significant uncertainty due to the [regulatory freeze](#) issued by President Trump, which directs “all executive departments and agencies” to “consider” postponing, for 60 days, the effective dates of rules published in the Federal Register, or any rules that have been issued in any manner but have not taken effect.
- In addition to executive action, Congress may rescind certain Biden-era energy tax credit regulations under the Congressional Review Act (“CRA”). The [CRA](#) provides for a joint resolution of disapproval that can be used to invalidate a final rule in its entirety. Such joint resolution must be introduced during a period of 60 consecutive session-days, beginning when the rule has been published in the Federal Register and received by Congress. If the joint resolution of disapproval is enacted, then the regulating agency cannot reissue the rule in substantially the same form or issue a new rule that is substantially the same unless specifically authorized by law.² In addition, previously issued regulations can be revised or repealed by means of an agency’s rulemaking processes. Finally, Congress may also use the budget reconciliation process,³ an expedited legislative procedure that would allow Congress to repeal certain spending and tax provisions of the IRA.

Pause on All Federal Grant, Loan and Other Financial Assistance Programs:

- On January 27, 2025, Acting Director Vaeth of the Office of Management and Budget issued a [two-page memorandum](#) (and a [clarification](#) the next day) to agency and executive department heads instructing all agencies to pause temporarily, effective 5:00 pm on January 28, all activities related to obligation or disbursement of all Federal financial assistance, “and other relevant agency activities that may be implicated by the [various] executive orders, including...the green new deal.” The memorandum was immediately opposed by a number of members of Congress and a coalition of state attorneys general who vowed to bring a lawsuit blocking effectiveness of the order. On January 28, a federal judge in the District of Columbia temporarily blocked the Trump Administration from implementing the spending pause, and shortly thereafter attorneys general for 22 states and the District of Columbia filed [a separate lawsuit](#) in that same district challenging the pause and seeking injunctive relief.
- On January 29, Acting Director Vaeth issued [another memorandum](#) rescinding the instruction he had given two days earlier. This was followed the same day by a social media post by the White House Press Secretary that has been interpreted as seeking to clarify that the rescission applied only to the OMB instruction and not to any of President Trump’s earlier executive orders. In light of the speed and number of actions being taken by the Administration on a number of fronts, there likely will be a number of areas in which rapid developments occur over time.

CLASH OF JURISDICTIONS – STATE vs. FEDERAL

In the face of the Trump Administration’s support of traditional fossil fuel development and general retreat from climate change and sustainability initiatives, we expect that certain states will pursue continuing and additional legislative, regulatory and enforcement initiatives in support of emissions reduction or mitigation and climate and sustainability initiatives, such as California’s [amendments to climate disclosure laws](#).

Additional examples include the recent New York “[Climate Change Superfund Act](#)” and the similar Vermont “[Climate Change Superfund Act](#).” The New York Climate Change Superfund Act applies to companies that “engaged in the trade or business of extracting fossil fuel or refining crude oil and [are] determined . . . to be responsible for more than one billion tons of covered greenhouse gas emissions” from 2000 to 2018, and requires them to pay a combined rate of \$3 billion per year for 25 years into a “Climate Superfund.” Each company’s payment will be proportionate to its prior emissions. The program operates under a theory of strict liability, meaning the fines are assessed based on a company’s historic greenhouse gas contributions; no finding of wrongdoing is required. New York will need to promulgate regulations, which will take place within one year of the law’s enactment, before specific penalties are assessed.

Additional state legislation and state court litigation supporting emissions disclosure, claims against fossil fuel industry participants, and other climate change mitigation and sustainability objectives may emerge that conflict with the new Federal government agenda. This could lead to uncertainty and extended litigation as the conflicting directives are reconciled through the court system.

LOPER BRIGHT AND THE END OF CHEVRON DEFERENCE

In June 2024, [the Supreme Court struck down the doctrine of Chevron deference](#) in the companion cases of [Loper Bright Enterprises v. Raimondo](#) and [Relentless, Inc. v. Dep’t of Commerce](#). The Supreme Court’s 1984 Chevron decision had required courts to defer to an agency’s reasonable interpretation of an ambiguous statute that the agency is charged with implementing. In *Loper Bright*, the Supreme Court held instead that courts must exercise their independent judgment in determining the meaning of a statute and whether an agency has acted within its statutory authority. This implies that while Congress may still make express grants of authority to agencies, its silence will no longer expand agencies’ discretionary authority, and agencies will have less latitude to autonomously change their prior interpretations of a given rule. Although these cases do not open up for re-examination matters previously decided under the Chevron doctrine, in light of the expected changes in various governmental agency approaches to permitting and policy and the new permitting regimes that may be effected following the recent executive orders, potential legal challenges based on *Loper Bright* may arise more often, at least in the near term, and could lead to delay in implementing projects and compliance uncertainty.

CAN NUCLEAR RESURGENCE SOLVE SURGING ENERGY DEMAND?

For the majority of the preceding decade, load forecasts in the U.S. projected relatively flat power demand driven by general economic growth, temperature trends, and electrification. However, beginning in 2022 and more notably in 2023 and 2024, a surge in hyperscale data center demand to support AI, cryptocurrency and cloud computing infrastructure has reshaped load forecasts for the next five years. According to estimates in a [report](#) published in December 2024 by the Department of Energy's Lawrence Berkeley National Laboratory, data center load growth has tripled over the past decade and is projected to double or triple again by 2028, accounting for between 6.7% and 12% of total U.S. electricity by 2028.

The anticipated significant need for baseload power, particularly to sustain 24/7 operations at data centers, has revived interest in nuclear power. Riding a wave of momentum driven by expectations of significant baseload energy demands, coupled with its classification as a "clean energy" in the IIJA, nuclear power underwent a landmark year in 2024. Over the past year, the Vogtle 4 expansion project was completed, and the U.S. Department of Energy approved the redeployment of several legacy nuclear reactors, including Michigan's Palisades Nuclear Plant. Amid growing demand for data center baseload power, big tech companies fortified nuclear power demand in 2024. Among other similar arrangements by industry peers, Microsoft signed a 20-year power purchase agreement with Constellation Energy to restart the Three Mile Island Nuclear Generating Station and NextEra Energy, Inc. [announced](#) that it will add more gas generation, and potentially restart a retired nuclear plant to help meet growing demand from large customers.

As legacy or retired nuclear plants are brought back online, another focal point for nuclear energy will center on the deployment of "Gen III+" advanced reactors, including small modular reactors (SMRs). In July 2024, President Joe Biden signed the ADVANCE Act of 2024, revising many aspects of the licensing regime applicable to new nuclear reactor projects. Under the Trump Administration, promises of expedited regulatory processes may further incentivize the development of new projects in advanced nuclear and SMRs.

President Trump's "[Unleashing American Energy](#)" order identifies nuclear energy as an energy resource requiring immediate review for all agency action potentially burdensome to its development, and Chris Wright, President Trump's nominee for Energy Secretary, strongly supported the acceleration and expansion of nuclear energy in his Senate confirmation hearing. We expect this support to translate into a favorable environment for new and restored nuclear capacity, creating opportunity for investors and developers alike in 2025 and beyond.

Assuming demand for energy remains consistent with current expectations, the length of time it will take to permit, develop and construct new nuclear facilities will make it challenging for nuclear power to meet these needs in the short (and perhaps even the medium) term. Accordingly, natural gas, potentially coupled with

carbon capture and sequestration, is viewed by many industry participants as the energy source that is more likely to serve as the key feedstock for power generation to support the vast energy needs of the data center market, at least until additional nuclear capacity is brought online or larger-scale battery storage technology can be deployed even more economically with renewable energy for this purpose.

RENEWED FOCUS ON CRITICAL MINERALS

Critical minerals have emerged as a key focus, as expectations of enormous future demand in connection with the energy transition have driven companies worldwide to increase mineral-related capital expenditures, while countries have sought to secure global supply chains amid rising geopolitical tensions.

This past year saw a burst of activity in the copper space, as mining companies sought to gain additional exposure to the metal. Both Teck and Anglo American have either completed, or have announced plans to pursue, spin-offs of non-copper assets to refocus their attention on copper production. BHP made a \$49 billion bid to acquire Anglo American before ultimately [partnering with Lundin mining to develop Argentina's Filo del Sol deposit](#), and Glencore has been widely reported to have engaged in merger discussions with Rio Tinto in what would be the biggest deal in mining history. Barrick continues to pursue development of the Reko Diq mine in Pakistan, which has potential to become one of the largest copper mines in the world, and [Antofagasta closed on a \\$4.5 billion expansion](#) of its existing Centinela copper mine.

Competition between and among countries for copper resources is similarly fierce, as China and the United States both work to ensure adequate supplies to support future green energy production. Chinese companies have announced plans to invest a further \$5 billion in Zambia in large part to boost copper production. Meanwhile, the United States has sought to increase its own influence in the region as it finances construction of the Lobito corridor, a major railway infrastructure project connecting copper mines in the Democratic Republic of Congo and Zambia to the Atlantic Ocean for export.

Other critical minerals have seen a similarly renewed focus. Companies continue to explore and invest in more efficient lithium technologies to boost production worldwide and circumvent Chinese domination of the lithium market. China announced a ban on exports to the United States of gallium, germanium and antimony, driving up prices and forcing manufacturers in the chip, aerospace and defense sectors to look elsewhere for these key inputs. Numerous countries that have long been dependent on China for production and refining of rare earth metals have taken initial steps to diversify supply chains for these minerals, with significant major investment plans in Australia, Brazil, and Vietnam.

We expect continued focus on development of critical mineral resources globally as both companies and countries look to satisfy future demand and mitigate geopolitical risks in the critical minerals space. Indeed, shortly after President Trump took office, he signed an [executive order](#) recognizing the inadequacy of the United States' critical mineral supply chain. However, a significant retreat from electric vehicle battery

SULLIVAN & CROMWELL LLP

development in a key market such as the United States as a consequence of the Trump Administration's [executive order](#) eliminating the Biden Administration EV mandate and EV subsidies may have some impact on the growth rate of the market for such critical minerals, at least in the United States, although the pace of global demand outside the United States will likely continue.

CONTINUED OPPORTUNITIES IN ENERGY STORAGE

Provisions in the IRA and the Section 45X Advanced Manufacturing Production Tax Credit (PTC) spurred billions in new manufacturing investments across the country, including in battery energy storage systems (BESS) and battery production. In the third quarter of 2024, according to the Solar Energy Industries Association, solar plus storage projects and standalone storage accounted for 15% and 9% of clean energy tax credit transfer transactions, respectively, driven by energy demand from data centers that require baseload stable generation, which renewables cannot offer absent a BESS solution. Battery prices have also been falling. This trend is driven in part by excess production capacity in China and burgeoning low-cost battery chemistries like lithium iron phosphate, which are expected to continue to lead the market due to affordability and a high safety profile. In 2025, these conditions are expected to persist, and, aided by low lithium prices, will continue to put downward pressure on battery prices.

Despite these favorable tailwinds contributing to broader deployment of BESS and other battery technologies, these markets may be affected by a freeze on IRA incentives to invest in the technologies needed to power the grid, including wind and solar, and the Trump Administration's rollback of the EV mandate in the "[Unleashing American Energy](#)" executive order. Increases in tariffs and import costs may also drive up prices and potentially slow what has been a rapidly growing BESS market. To counteract this risk, we have seen clean energy developers prioritize long-term partnerships with key suppliers to mitigate risks, but this strategy will require additional consideration to the extent any tariffs are imposed on key non-U.S. suppliers.

The Trump Administration's recent executive orders did not directly mention battery storage, one of the fastest-growing sources of electric capacity in the United States, and BESS has largely continued to enjoy bipartisan support, given its role in promoting the use of renewable energy and energy-producing jobs around the country. However, the BESS market will likely be affected by increases in tariffs on products from China and other components made from "foreign entity of concern" countries, as well as changes to IRA incentives regarding clean energy and battery production. Restrictions on non-U.S. energy-storage systems and battery components, especially those from China, are expected to increase global supply chain costs and increase reliance on domestic battery and BESS manufacturing. Growth is expected for large-scale BESS solutions across the United States, especially in states such as Texas, Nevada, Arizona, and California. BESS integrators will have to analyze the use of increasingly established –but expensive– global components with the burgeoning U.S. market.

SULLIVAN & CROMWELL LLP

S&C Resources:

- [S&C Publication: White House Issues “Regulatory Freeze” Memorandum](#)
- [S&C Energy Transition Insights: Final Regulations on Transferring Tax Credits](#)
- [New Guidance on Direct Pay and Transferability of U.S. Clean Energy Tax Credits](#)
- [S&C Energy Transition Insights: Final Rules on Clean Vehicle Tax Credits](#)
- [S&C Publication: NY Law Fines Energy Companies \\$75 billion for Emissions](#)
- [Recent Developments in the Carbon Capture Sector in the U.S. and Europe](#)
- [California Resources Corporation to Combine with Aera Energy](#)

* * *

ENDNOTES

- ¹ CRS Report IF12596, [Tax Credit Transfers and Direct Payments in the Inflation Reduction Act of 2022](#), by Nicholas E. Buffie.
- ² 5 U.S.C. § 801(b)(2).
- ³ See CRS Report [R44058](#), *The Budget Reconciliation Process: Stages of Consideration*.

SULLIVAN & CROMWELL LLP

Questions regarding the matters discussed in this publication may be directed to any of the lawyers listed on S&C's [Energy Transition Practice page](#) or any Sullivan & Cromwell LLP lawyer with whom you have consulted in the past on similar matters.

This publication is provided by Sullivan & Cromwell LLP as a service to clients and colleagues. The information contained in this publication should not be construed as legal advice.