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The Interconnection Gap: A Private Credit Opportunity

The Queue Nobody Talks About

The U.S. energy transition is well underway. Solar costs have fallen over 90% in a decade, wind economics are competitive with nearly every form of conventional generation, and battery storage is scaling rapidly. Despite changes brought by the One Big Beautiful Bill in July 2025, policy support—from the Investment Tax Credit to the Inflation Reduction Act (IRA)—has made renewable energy among the most economically attractive forms of new generation in U.S. history.

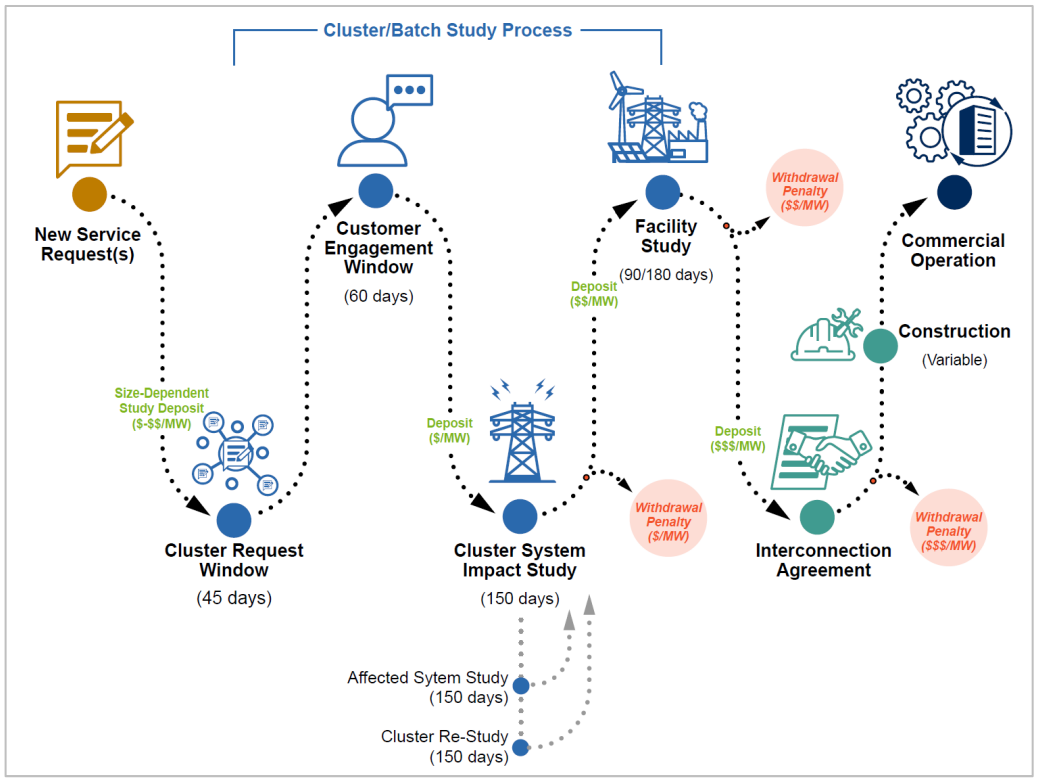
And yet, as of early 2024, over 2,000 gigawatts of proposed generation capacity—the vast majority solar, wind, and battery storage—are sitting idle, a figure that exceeds the entire installed generating capacity of the U.S. power grid. Not for lack of capital, not for lack of demand, and not for lack of technology. They are waiting in line.

The grid interconnection queue is one of the most consequential and least discussed chokepoints in American energy infrastructure. For investors and developers navigating the clean energy transition, understanding this bottleneck is no longer optional. It is essential to understand where risk concentrates, where capital is needed, and where differentiated private credit opportunities are emerging.

What Is the Interconnection Queue, and Why Does It Matter?

Before a single solar panel is installed or a wind turbine erected, a developer must obtain permission to connect their project to the power grid. This process, managed by utilities or regional transmission organizations (RTOs) depending on project size and geography, is known as interconnection. It involves a series of engineering studies to assess grid capacity, identify required infrastructure upgrades, and allocate the costs of those upgrades to the connecting project.

Figure 1. Typical Interconnection Study Process and Timeline

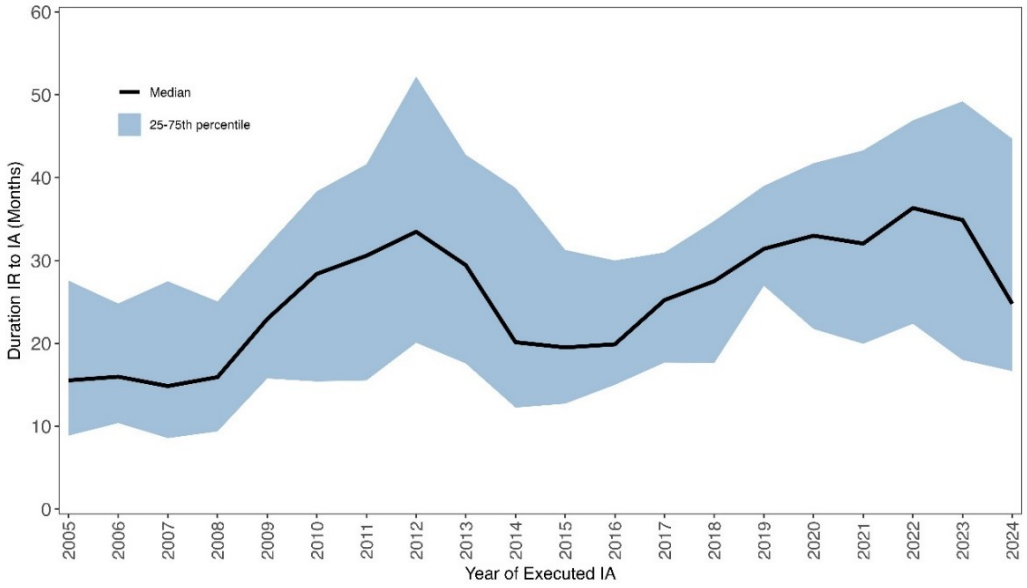


Source: Berkeley Lab, "Interconnection Queue Dataset & Summarized Data Files", August 2025

What most people outside the energy industry do not appreciate is the financial commitment this requires *before any construction begins*. To secure a position in the interconnection queue, developers must post substantial cash deposits with the relevant utility or grid operator. These deposits start at $500,000 and can reach tens of millions of dollars, scaling with project size and technical complexity.

Once paid, this capital becomes effectively illiquid. It sits with the utility or RTO, sometimes for 2.5 to 4 years or longer—while engineering studies proceed and grid upgrade plans are developed. During this period, developers cannot deploy that capital elsewhere. For growth-stage companies managing portfolios of multiple projects, this creates a meaningful constraint: capital that could fund land acquisition, equipment optionality, or team expansion is instead warehoused in utility-held deposits. This is the financing gap at the heart of the interconnection queue problem, and it is largely invisible to traditional capital markets.

Figure 2. Median (and p25/p75) duration from interconnection request (IR) to interconnection agreement (IA) date, 2005-2024



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How the Queue Became a Crisis

The interconnection queue was not always this congested. The current backlog is the product of a specific set of structural forces converging over the past decade.

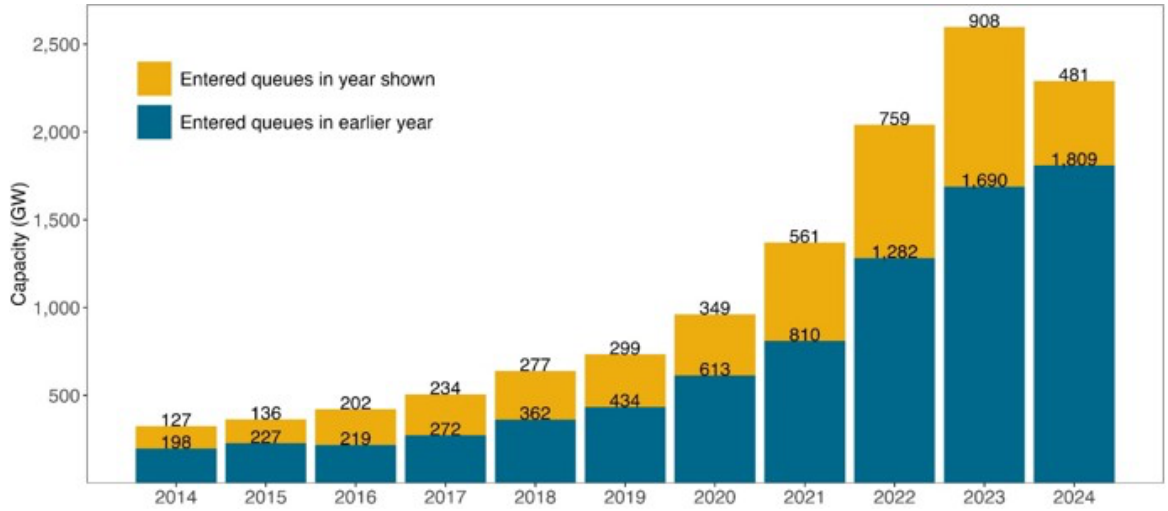
Speculative applications inflated the queue. Historically, filing an interconnection request required minimal upfront financial commitment. This created incentives for developers to “land bank” queue positions — filing requests for projects with little realistic probability of completion simply to preserve optionality. These "zombie" projects consumed grid operator resources and slowed study timelines for legitimate applications.

Policy support generated a wave of genuine demand. Federal tax incentives, substantially expanded by the IRA in 2022, dramatically improved the economics of renewable energy development. State-level renewable portfolio standards and corporate clean energy procurement commitments—from technology companies to industrial manufacturers—created unprecedented demand for new capacity. The result was a flood of real, viable project applications that overwhelmed existing grid operator capacity, which still exists even after reductions to the Investment Tax Credit and the Inflation Reduction Act.

Load growth returned after decades of stagnation. For most of the 2000s and 2010s, U.S. electricity demand was essentially flat. That has changed. Data center expansion to support AI and cloud computing, electrification of transportation and industrial processes, and reshoring of manufacturing are collectively driving the first sustained period of demand growth in a generation. New load requires new generation, and new generation enters through the same constrained interconnection process.

By early 2024, the aggregate capacity of projects in U.S. interconnection queues exceeded the entire installed generating capacity of the U.S. power grid. The estimated cost of grid upgrades required to accommodate these projects runs into hundreds of billions of dollars.

Figure 3. Cumulative capacity of active interconnection requests, 2014 - 2024



Source: Berkeley Lab, "Interconnection Queue Dataset & Summarized Data Files", August 2025

Regulatory Reform: A Step Forward, With New Capital Requirements

Regulators have not been passive. The Federal Energy Regulatory Commission's (FERC) landmark Order No. 2023, the most significant reform to the interconnection process in decades, fundamentally restructured how applications are evaluated.

The old system processed applications serially, on a first-come, first-served basis. This rewarded speed of filing over project viability and allowed speculative applications to delay legitimate projects. Order No. 2023 replaced this with a "first-ready, first-served" cluster study approach. Projects are now grouped into cohorts and evaluated together, but only after demonstrating meaningful readiness: site control documentation, detailed project plans, financial capability attestations, and, critically, significantly higher upfront deposits.

This reform is directionally correct. It has begun clearing zombie applications and accelerating study timelines for viable projects. But it has also raised the capital bar substantially. Developers who want to secure a cluster position must now demonstrate financial commitment at levels that previous queue rules did not require. Deposit requirements have increased in both absolute terms and as a condition of queue participation.

The practical effect: the capital need at the interconnection stage has grown, precisely as the queue itself has lengthened. Developers face larger deposit requirements, for longer periods, across larger project portfolios before a shovel enters the ground.

The Financing Gap: Why Traditional Lenders Haven't Filled It

In most corners of the capital markets, a well-defined financing need of this scale would attract institutional attention quickly. The interconnection deposit market has not followed that pattern, for reasons that are instructive.

Deal size creates structural mismatches. Individual interconnection loans typically range from $2 million to $15 million. This is far below the $50 million minimum that makes economic sense for most institutional direct lending platforms, given their overhead structures and origination costs. Large private credit funds cannot efficiently deploy capital at this scale, even if they wanted to.

The collateral is unfamiliar. Banks and broadly syndicated lenders underwrite assets they understand: real estate, equipment, inventory, receivables. Interconnection deposits held by a regulated utility or RTO, with refund rights tied to withdrawal procedures defined in interconnection service agreements do not fit existing credit models. The internal approval process at most financial institutions is not designed to evaluate this collateral, and the learning curve has been prohibitive relative to deal economics.

Documentation requires specialized expertise. Creating an enforceable security interest in utility-held deposits requires deep familiarity with interconnection service agreements, UCC Article 9 perfection mechanics for novel collateral types, and coordination with regulated utility counterparties. This is not standard energy finance—it is a specific technical discipline that most lenders have neither developed nor sought to develop.

Relationship infrastructure takes time to build. Quality deal flow in this market comes from established relationships with renewable energy developers—understanding their economics, development timelines, and capital allocation priorities. Traditional corporate lenders have not built these networks, and view doing so as peripheral to their core business.

The cumulative result is a market that is simultaneously large, growing, and significantly underserved by institutional capital.

The Investment Case: What Makes This Compelling for Private Credit Allocators

For investors with existing private credit allocations, interconnection deposit financing offers a differentiated risk/return profile relative to certain segments of private credit.

Attractive yield with structural protections. Market participants have observed yields in the low-to-mid teens for certain interconnection-related financing structures, though outcomes vary significantly based on structure, borrower quality, and market conditions. Critically, these returns derive from structural complexity and expertise requirements, not from elevated underlying credit risk. The senior secured position with first-priority liens on cash deposits held by investment-grade utilities and grid operators may provide structural downside protections, subject to enforcement and documentation that is uncommon at these yield levels.

Collateral quality is differentiated. The deposits securing these loans are held by creditworthy, regulated counterparties—utilities and RTOs with investment-grade credit profiles. Refund schedules are contractually defined in interconnection service agreements, matters of public regulatory record. In scenarios where a developer withdraws from the queue, the utility's refund obligation provides a contractual repayment mechanism, subject to applicable procedures and risks. This is meaningfully different from typical asset-based lending, where collateral recovery involves liquidation uncertainty.

Short duration accelerates capital deployment. Loan terms of 18 to 24 months, matching or slightly exceeding expected study completion timelines, produce rapid capital turnover relative to traditional infrastructure debt (7-10 year terms) or corporate direct lending (5-7 year terms). Multiple exit mechanisms are available: project sale or partnership formation post-interconnection approval, construction financing at financial close, portfolio-level refinancing, or direct deposit refund in withdrawal scenarios.

Correlation to traditional private credit is genuinely low. Most institutional private credit portfolios are concentrated in a handful of related exposures: sponsored direct lending to PE-backed companies, asset-based facilities, and opportunistic credit. These strategies share meaningful common risk factors—sponsor exit markets, corporate credit cycles, real estate valuations.

Interconnection loan performance is driven by a different set of variables: FERC rulemaking and utility capacity, developer portfolio quality, and regulatory withdrawal procedures. It has no exposure to LBO financing activity, acquisition multiples, or enterprise value maintenance. For LPs managing substantial allocations to traditional private credit, this represents genuine diversification within the asset class, not simply a stylistic variation.

Climate transition exposure without construction risk. Interconnection lending provides direct economic participation in the energy transition. Each loan accelerates a renewable project toward completion without taking on the long-dated development risk or construction execution risk that characterizes infrastructure equity or project finance. The loans exit at or before financial close, before the project-level risks that dominate infrastructure investing become relevant.

Risk Factors: An Honest Assessment

No credit strategy is without risk, and intellectual honesty requires addressing the key concerns directly.

Regulatory risk is real but manageable. FERC and grid operators can and do change interconnection procedures, deposit requirements, and refund policies. Order No. 2023 itself demonstrated this—though its specific changes generally strengthened the security position of deposit-backed lenders by increasing financial commitment requirements and formalizing refund schedules. Continuous regulatory monitoring and loan documentation that anticipates procedural evolution are essential disciplines.

Legal and documentation risk is the primary execution variable. A security interest that is not properly drafted, filed, and coordinated with utility counterparties provides no protection regardless of deposit value. This is the market's principal technical barrier and it is entirely within a lender's control. Specialized energy project finance counsel with specific interconnection agreement experience is not optional; it is the foundation of the strategy.

Developer credit risk requires rigorous underwriting. These are early-stage development companies, often capital-constrained, navigating a complex regulatory process. Interconnection studies can reveal prohibitive upgrade costs. Site control complications arise. Market conditions shift. A developer's financial distress does not eliminate the collateral value of utility-held deposits, but it can complicate collection and timing. Conservative advance rates, diversified exposure across developers and geographies, and ongoing portfolio monitoring are the appropriate responses—not avoidance of the asset class.

Market Timing: Why Now

The interconnection lending market is at a specific inflection point that makes near-term entry timing compelling.

FERC Order No. 2023 implementation is accelerating deposit capital needs in 2026 and 2027. Projects that held positions in pre-reform queues are now facing cluster study requirements and elevated deposit thresholds. Developers who want to preserve queue positions and advance through the new cluster process must move quickly to fund deposits—creating acute near-term capital demand.

Simultaneously, the broader grid modernization agenda, federal infrastructure funding, and utility rate-base investment in transmission are reducing the uncertainty that previously caused project withdrawals, thereby improving study completion rates and strengthening exit scenarios.

Competition among specialized lenders remains limited. The barriers to entry—legal expertise, developer relationships, documentation infrastructure—are not insurmountable, but they take years to build. Lenders who establish credibility in this market now will benefit from an extended period of favorable deal economics and priority access to quality origination before broader institutional attention arrives.

Conclusion

The interconnection queue is not a temporary disruption. It reflects a fundamental mismatch between the scale of the clean energy buildout and the infrastructure capacity required to support it—a mismatch that will take years, if not decades, to fully resolve. In the meantime, thousands of viable projects need capital at a specific, structurally protected stage of development that traditional lenders are systematically unable to serve.

For private credit allocators seeking differentiated exposure — Potentially attractive yield characteristics relative to certain segments of private credit, subject to structure and execution, strong structural protections, short duration, and low correlation to existing portfolio holdings — interconnection deposit financing may merit consideration for certain investors depending on their objectives, risk tolerance, and constraints. The market is large, growing, and genuinely underserved. The risk framework is manageable with the right expertise. And the current market conditions may present opportunities, though these may evolve as the market develops, before institutional competition intensifies, is open now.

This piece was prepared by the investment team at Chestnut Run Capital Partners, a private credit manager focused on specialized lending opportunities within the clean energy transition. For more information, please visit chestnutruncapital.com.

References

[1] "Grid connection backlog grows by 30% in 2023, dominated by requests for solar, wind, and energy storage," Lawrence Berkeley National Laboratory Energy Markets & Policy, 2024.

[2] U.S. Department of Energy, "Grid Resilience and Modernization Initiatives," 2025.

[3] "Private Credit Markets & Beyond — 2025 Year in Review & 2026 Outlook," Chicago Atlantic, 2025.

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