

P&C PERSPECTIVE

Energy infrastructure credit: A natural extension of private credit for U.S. P&C insurers

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Over the past decade, private credit, particularly corporate direct lending, has become a core allocation for many property and casualty (P&C) insurers. According to Nuveen's 2026 EQUilibrium survey, 73% of P&C insurers already invest or plan to invest in private credit. The asset class expanded as borrowers increasingly required flexible capital and new lenders offered underwriting complexity that traditional financing models were less equipped to address.

Many of the same structural dynamics that supported the rapid growth of direct lending are now emerging across power and energy infrastructure. While power generation remains central, the opportunity set increasingly extends to storage, energy efficiency and grid-enabling and energy-services assets that support higher utilization, reliability and flexibility across the energy system. As these assets scale, financing has become more complex, often requiring phased capital deployment, bespoke structures and lenders able to underwrite operational and asset-level risk across platforms rather than single projects.

Energy infrastructure credit (EIC) applies the direct-lending toolkit to this broader power and energy ecosystem. By providing flexible, asset-backed capital through shorter-maturity structures (three to four years) with both fixed and floating-rate options, EIC addresses the evolving needs of energy infrastructure borrowers while aligning with the balance sheets of P&C insurers. EIC is therefore best understood not simply as an infrastructure allocation, but as a natural extension of private credit.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

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TWO FORCES REDEFINING HOW ENERGY INFRASTRUCTURE IS FINANCED

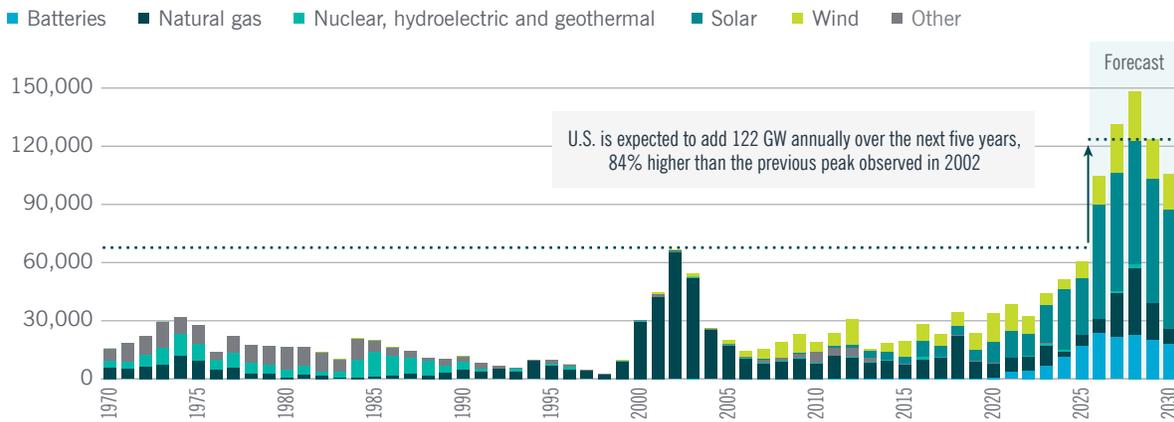
First, electricity demand is rising rapidly and becoming more diversified. Growth is being driven by AI, onshoring of manufacturing and critical equipment, and electrification of the broader economy. Household consumption, industrial electrification and the need for reliable power to support economic activity are all contributing to sustained growth in electricity usage. At the same time, demand is becoming more dynamic, placing greater strain on generation, transmission and distribution systems that were not designed for high levels of flexibility or load variability.

Second, the infrastructure required to meet this demand is becoming more complex and system oriented. Investment is increasingly flowing into storage, grid-enabling infrastructure and energy services that help balance supply and demand, improve reliability and increase utilization across the system. These assets often function as part of broader platforms rather than as standalone projects, introducing greater operational complexity and requiring more tailored approaches to development and financing.

Together, these forces are expanding the scope of power and energy infrastructure beyond discrete generation assets and reshaping how the sector is developed and financed.

Figure 1: U.S. power generation additions are entering a new growth phase

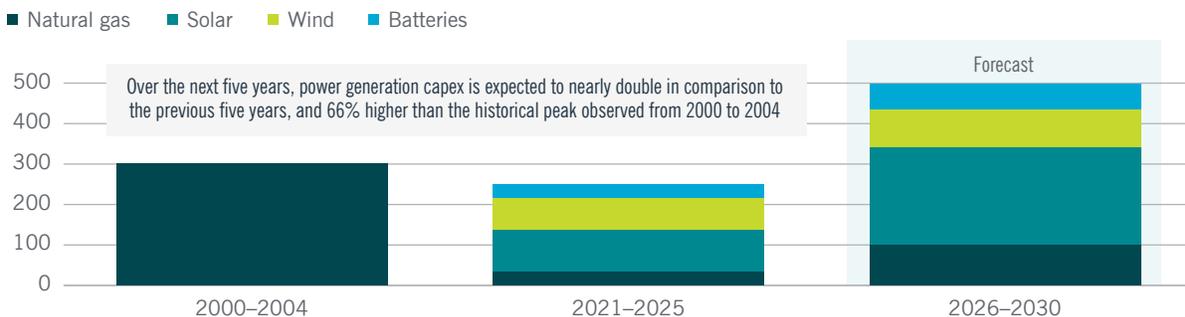
U.S. power generation additions (MW)



Source: Nuveen analysis of U.S. Energy Information Administration Preliminary Monthly Electric Generator Inventory (based on Form EIA-860M as a supplement to Form EIA-860), as of November 2025.

Figure 2: U.S. power generation capex reaches unprecedented highs

U.S. power generation capex (\$ billions)



Source: Nuveen analysis of U.S. Energy Information Administration Preliminary Monthly Electric Generator Inventory (based on Form EIA-860M as a supplement to Form EIA-860), as of November 2025.

INFRASTRUCTURE 2.0 AND THE CAPITAL-STRUCTURE MISMATCH

The evolution underway in power and energy infrastructure in many ways mirrors the path corporate direct lending followed over the past two decades.

In its early stages, direct lending was largely associated with mezzanine capital and opportunistic direct lending. Following the Global Financial Crisis, regulatory changes and balance-sheet constraints reduced banks' ability to provide flexible financing, while borrowers increasingly required customized capital and lenders capable of underwriting complexity. The result was the emergence of a more institutional and scalable form of direct lending focused on senior, asset-backed and structurally protected investments.

Power and energy infrastructure is now undergoing a similar transition. Traditional financing models were designed for discrete, long-duration projects with stable cash flows and standardized risk profiles. Today, assets are increasingly developed and financed at the platform level and operate within more dynamic systems.

Banks remain active in parts of the infrastructure market, particularly where assets are fully de-risked and cash flows are well established. However, regulatory and balance-sheet constraints can limit their appetite for more complex assets that require execution speed, bespoke structuring or staged capital deployment. This has contributed to a capital-structure mismatch in which the financing needs of modern infrastructure assets are not always well served by traditional lending models.

APPLYING THE DIRECT LENDING PLAYBOOK TO MODERN INFRASTRUCTURE

The toolkit employed in energy infrastructure credit closely mirrors the one that enabled corporate direct lending to scale. Investments feature key credit attributes including hard collateral, inflation protection through contracted escalators, and long-duration contracted cash flow certainty—typically structured with shorter tenors, covenant protections and collateral packages designed to manage

downside risk. Cash-flow sweeps, amortization and other structural features support capital preservation while allowing lenders to participate in improving credit profiles as assets mature.

This approach reflects a familiar dynamic for private credit investors. As assets stabilize and operating risk declines, well-structured loans are often refinanced at lower costs, enabling capital to be recycled without reliance on asset sales or exit markets. Rather than requiring permanent ownership or long-dated exposure, EIC is designed to support assets through defined phases of development and operation.

For P&C insurers, these characteristics align cleanly with existing balance-sheet and portfolio considerations. Shorter-duration exposure and predictable contractual cash flows can support liability management and interest-rate positioning without introducing long-dated capital commitments.

THE OPPORTUNITY SET FOR ENERGY INFRASTRUCTURE CREDIT

Energy efficiency and Energy-as-a-Service

Energy efficiency and demand-side solutions are increasingly central to the energy system. Investments include HVAC upgrades, industrial refrigeration, lighting systems and electrification of buildings and equipment. Energy-as-a-service models often offer contractually defined savings, shorter payback periods and strong cash-flow visibility.

Behind-the-meter and distributed power

EIC extends beyond utility-scale renewables into commercial and community-scale solar, behind-the-meter generation and on-site solutions for industrial users and data centers. These assets often exhibit greater resilience and more predictable cash flows than large-scale projects.

Battery storage and grid stabilization

Battery storage and power electronics are increasingly critical as load volatility rises. Storage

assets support grid reliability and renewable integration, while inverter infrastructure enables digital control and system stability.

Energy infrastructure supply chain

Onshoring and industrial policy have driven a surge in domestic manufacturing investment. U.S. manufacturing construction spending has reached approximately \$232 billion, supporting facilities for batteries, solar components, trackers and other energy-critical inputs.

Energy security and resilience

EIC also finances assets that enhance availability and redundancy, including liquid natural gas processing and transport, midstream logistics and grid-enabling infrastructure. These assets support energy security while underpinning economic continuity.

WHAT ENERGY INFRASTRUCTURE CREDIT DELIVERS FOR P&C PORTFOLIOS

Maturity alignment with P&C portfolios

Typical EIC loans have three- to four-year weighted average lives, compared with seven to 15 years for traditional investment-grade project finance. This shorter maturity profile is driven by amortization, cash-flow sweeps and the potential for refinancing into investment-grade markets as projects stabilize and risks decline.

Rate structures and interest-rate resilience

EIC loans are typically structured as SOFR-based floating-rate instruments with protective floors or as fixed-rate loans. This provides flexibility to match evolving market conditions and investor preferences while maintaining protective structural features.

Loss experience and capital preservation

Infrastructure debt has historically exhibited lower defaults and losses than non-financial corporate credit, especially during times of global economic stress. EIC investments typically include collateral packages, excess cash-flow sweeps, financial, operational and hedging covenants, and step-in rights. Cash flows are often supported by contracted or regulated revenue streams.¹

Capital efficiency and RBC considerations

EIC loans typically receive ratings from a Nationally Recognized Statistical Rating Organization (NRSRO), which enables them to be structured as rated notes and allows capital charges to more closely reflect underlying credit risk. Rated EIC exposures, including SMA implementations, can carry RBC charges as low as approximately 6%, compared with roughly 20% for fund structures, representing an estimated 70% reduction in required capital.

Figure 3: Lower default rates for infrastructure credit

Trailing 12-month default rates for infrastructure versus non-financial corporates



Source: S&P Global, 2023 Annual Infrastructure Default and Rating Transition Study.

EXPANDING THE PRIVATE CREDIT OPPORTUNITY SET FOR P&C INSURERS

As energy infrastructure assets have evolved, EIC has emerged as a means of extending established private credit approaches into a segment of the real economy. Just as competition and maturity in corporate direct lending have pushed investors toward areas where structuring, selectivity and execution matter most, similar dynamics are now shaping infrastructure markets.

P&C insurers can take confidence from the tried and tested practices of direct lending. With the shorter weighted average lives, reliable cash flows and floating-rate structures typical of EIC investments, they now have additional tools available, that are arguably more closely aligned with their investment objectives.

To find out more about the range and opportunity in energy infrastructure credit, please visit our website at nuveen.com/eic.

Endnotes

1 Nuveen, Making Sense of Infrastructure Debt.

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A word on risk

All investments carry a certain degree of risk and there is no assurance that an investment will provide positive performance over any period of time. Investors should be aware that alternative investments including private equity and private debt are speculative, subject to substantial risks including the risks associated with limited liquidity, the use of leverage, short sales and concentrated investments and may involve complex tax structures and investment strategies. Alternative investments may be illiquid, there may be no liquid secondary market or ready purchasers for such securities, they may not be required to provide periodic pricing or valuation information to investors, there may be delays in distributing tax information to investors, they are not subject to the same regulatory requirements as other types of pooled investment vehicles, and they may be subject to high fees and expenses, which will reduce profits. Alternative investments are not appropriate for all investors and should not constitute an entire investment program. Investors may lose all or substantially all of the capital invested. The historical returns achieved by alternative asset vehicles is not a prediction of future performance or a guarantee of future results, and there can be no assurance that comparable returns will be achieved by any strategy.

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