

Infrastructure private credit — a distinct and growing sleeve within private credit

Introduction

Infrastructure private credit has emerged as a compelling and growing segment within the broader private credit asset class — a distinct sleeve with materially different risk drivers, cash flow characteristics, and portfolio utility than the corporate direct lending strategies that have recently dominated headlines.

Infrastructure private credit draws on two established investment verticals that have historically operated in parallel. On one side is infrastructure, an asset class long dominated by equity strategies spanning the risk-return spectrum — from Core, with its stable, contracted cash flows from mature assets, to Opportunistic, where investors underwrite development risk and value creation in pursuit of private equity-like returns. According to Preqin, total infrastructure assets under management (AUM) have grown nearly ten-fold over the past decade, from just under \$150 billion in 2015 to \$1.35 trillion in 2025 — with infrastructure debt posting the fastest growth over that period, expanding from \$5.4 billion in 2015 (4% market share) to \$144.2 billion in 2025 (11% share).

On the other side is private debt, the rapidly expanding universe of non-commercial bank lending that has scaled into a multi-trillion-dollar asset class over the past fifteen years — with private debt funds managing approximately \$1.7 trillion in assets at the start of 2025, up from roughly \$1.1 trillion in 2020, and industry estimates projecting growth to around \$4.5 trillion by 2030.¹

Infrastructure credit fuses the defensive, cash-flow-driven characteristics of infrastructure assets with the structural protections and yield orientation of the



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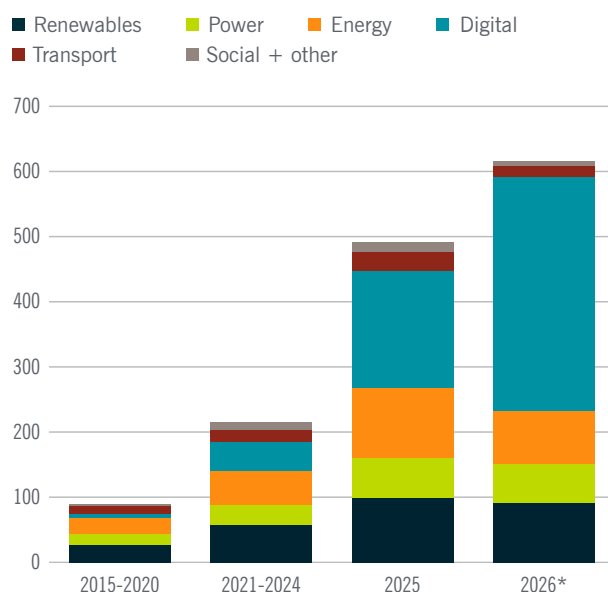
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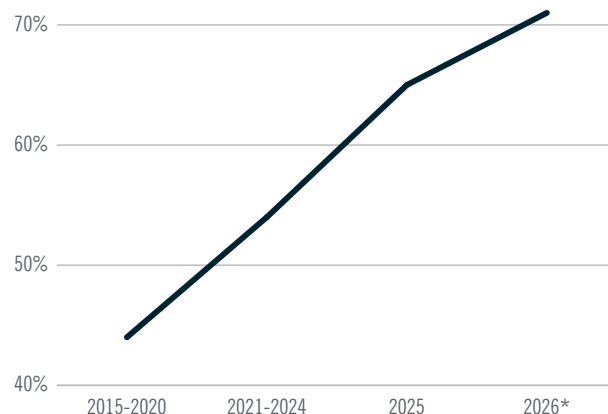
latter. The result is a distinct investment strategy that inherits infrastructure’s essential-asset stability, long-duration contracted cashflow, and often regulated or long-term contracted revenue streams, while providing access to assets that can offer the high-quality collateral, downside protection, and current income profile that debt investors prize — setting it meaningfully apart from the corporate direct lending strategies that anchor most private credit portfolios.

Figure 1: Private infrastructure investment in North America

\$B, annualized



% from debt



Source: InfraLogic.

* Based on data through Q3 2026.

Infrastructure private credit: definition, drivers, and risks

What is infrastructure private credit

Infrastructure private credit is privately negotiated, non-commercial bank debt extended to infrastructure projects, development platforms, and operating businesses across energy, power, digital, transportation, social and other infrastructure.

Because these projects deliver tangible, essential services, like reliable power, clean water, connectivity and mobility, the asset class may appeal to investors seeking responsible investing objectives alongside risk-adjusted returns.

The defining feature is the source of repayment—contracted, regulated, or user-pay cash flows generated by physical assets—rather than the diversified corporate profits that underpins direct lending.

Why infrastructure private credit has scaled

Basel III and IV capital and liquidity requirements made financing infrastructure projects significantly less attractive for commercial banks, which historically dominated the market, while insurers and pension funds—drawn by asset-backed and inflation resilient cash flows—have increased their appetite for dedicated infrastructure debt funds.

This shift coincides with unprecedented capital demand from AI-driven data center buildout, power generation, grid modernization, and aging infrastructure replacement.

It also coincides with a multi-decade financing need for the low-carbon energy solutions. As shown in Figure 1, renewables consistently rank among the largest investment opportunity in private infrastructure, reflecting the scale of capital required to decarbonize power generation. Debt’s defensive, contracted structure makes it a natural vehicle for capturing this demand without assuming the equity-like risk of the underlying build-out.

Value proposition of infrastructure private credit

For investors, the asset class seeks to provide premium yields with differentiated risk drivers, contractual protections, and cash flows that have historically proven to be stable and/or correlated to inflation.

For borrowers, private credit can provide speed and greater certainty of execution, bespoke customization of credit facilities, and a partnership-oriented relationship that commercial banks are increasingly slow to or unable to provide.

Infrastructure private credit’s risks

The “buy and hold” characteristic of most infrastructure debt funds carries illiquidity risk, with investments typically not traded on public markets and therefore hard to sell or exit quickly if needed.

Construction and project execution risk—before assets reach stable operation and cash flow generation—remains real, alongside regulatory and geopolitical exposure. And, because success hinges on origination, underwriting discipline and sector expertise, dispersion across managers can be meaningful.

Figure 2: Trailing 12-month default rates for infrastructure versus Non-financial corporates



Source: S&P Global Ratings Credit Research & Insights.

What is infrastructure private credit

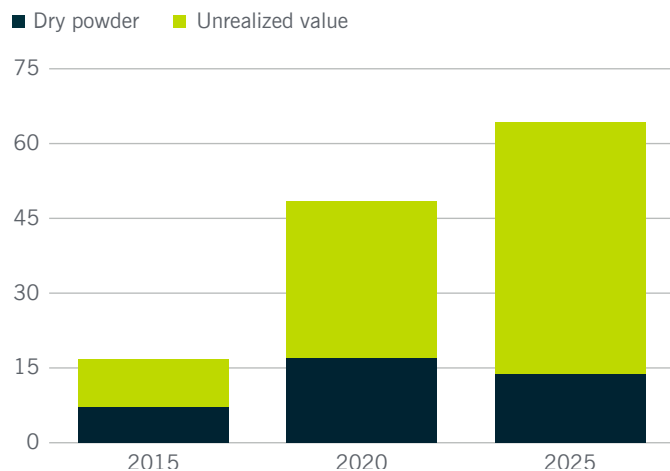
Infrastructure private credit is a distinct sub-segment of the broader private credit market — debt investments originated and held by non-bank lenders through privately negotiated agreements, characterized by illiquidity, customization, and strong lender protections. The focus of this white paper is specifically on this privately negotiated, non-commercial bank infrastructure debt, as distinct from syndicated project finance bonds or listed infrastructure debt. While direct lending, the largest segment of the private credit market focuses on senior secured loans to middle-market operating companies, infrastructure private credit applies these same private, non-commercial bank lending principles to a fundamentally different borrower set: infrastructure projects, project companies (typically structured as special purpose vehicles, a.k.a. SPVs), and infrastructure operating businesses that span both investment-grade and sub-investment-grade credit profiles.

The defining distinction is the source of repayment. Corporate direct lending is underwritten on the diversified profits of an operating business, whereas infrastructure private credit is primarily underwritten on the basis of contracted, regulated, or user-pay cash flows generated by physical infrastructure assets — solar and wind farms, combined cycle gas turbine power plants, transmission lines, data centers, fiber networks,

toll roads, and airports. These three revenue types can be illustrated simply: contracted cash flows arise from long-term agreements such as power purchase agreements (PPAs); regulated cash flows derive from utility tariffs set by regulators; and user-pay cash flows come from usage-based assets such as toll roads and airports. This distinction is not academic — it is the root driver of the lower default rates, higher recoveries, and reduced correlation to public markets that define the asset class and that the sections below explore in greater detail.

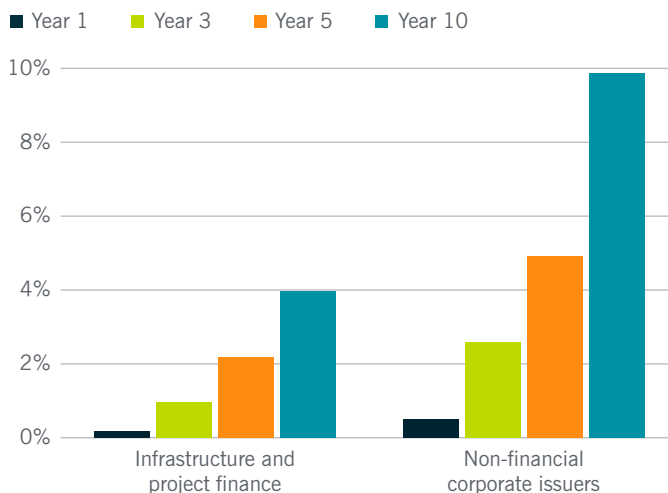
The empirical record bears out these structural differences. Infrastructure and project finance debt have experienced consistently lower credit loss rates than comparably rated non-financial corporate issuers, and the gap widens materially over longer holding periods — precisely the horizons most relevant to infrastructure lenders. See Figure 4 for a comparison of the credit loss rates for Ba/BB-rated loans. A similar divergence appears in 12-month rolling default rates, where all-infrastructure defaults have remained near zero across multiple credit cycles even as non-financial corporate default rates spiked to 6% during the 2008–2009 downturn. Together, these data points reinforce the central thesis: the contracted, regulated, or user-pay nature of infrastructure cash flows translates into a demonstrably more resilient credit profile.

Figure 3: Private infrastructure debt AUM in North America (\$B)



Source: Preqin.

Figure 4: Ba/BB rated credit loss rates



Source: Moody's Ratings.

Figure 5: Corporate direct lending vs. infrastructure private credit: a side-by-side view

Dimension	Corporate direct lending	Infrastructure private credit
Borrower	Middle-market operating companies (frequently PE-sponsored)	Infrastructure project SPVs and infrastructure operating businesses
Source of repayment	Diversified corporate profits	Contracted, regulated, or user-pay cash flows from physical assets
Underlying collateral	Going-concern enterprise value; business cash flows	Physical, cash-flowing infrastructure assets with defined economic lives, together with the underlying revenue contracts (e.g., PPAs, tariffs) securing repayment
Position in capital structure	Predominantly first-lien senior secured or subordinated corporate debt	Senior secured (holdco and/or opco), including structurally subordinated and mezzanine tranches
Covenant package	Maintenance and incurrence covenants tied to corporate financials	Project-level covenants: DSCR tests, distribution lockups, cash from sweeps, reserve accounts, asset value covenants and debt service reserve accounts
Revenue/cash flow profile	Tied to broader economic activity and company performance	Often contracted, regulated, or user-pay; frequently inflation-linked
Primary sectors	Software, healthcare, business services, industrials, consumer	Energy, digital, transportation, utilities, social infrastructure, midstream
Primary investor base	BDCs, private credit funds, asset managers	Insurers, pension funds, sovereign wealth, dedicated infrastructure debt funds, and increasingly institutional pension plans.
Correlation to public markets	Moderate; tied to corporate credit cycle	Lower; driven by asset-specific contracts and regulatory frameworks

The evolution of infrastructure private credit

Regulatory pressure on bank balance sheets. Basel III and Basel IV capital and liquidity rules have made long-duration, illiquid project finance loans economically unattractive for commercial banks to hold on balance sheet.² Just as post-2008 regulation pushed commercial banks away from sub-investment-grade middle-market lending and created the opening for direct lending managers, the same regulatory backdrop is pushing commercial banks to shorten tenors, reduce hold sizes, and increasingly distribute rather than retain project finance exposure. This retrenchment has created a durable financing gap that non-bank lenders — with patient, long-dated capital — are well-positioned to fill.

In McKinsey’s “The Next Era of Private Credit” report, infrastructure was one of four asset classes asset classes in

particular that will increasingly shift to nonbank lenders, with the other three being (1) asset-backed finance, (2) residential mortgages, and (3) higher-risk commercial real estate. While all four benefit from the same structural retreat of commercial banks from long-duration, capital-intensive lending, infrastructure debt stands apart on several dimensions that make it arguably the most attractive of the group for income-focused, downside-conscious investors:

- **Diversification benefits:** Returns are driven by asset-specific contracts and regulatory frameworks rather than the corporate credit cycle, consumer credit conditions, or property markets that drive the other three classes. This profile can result in lower correlation to public markets and may offer improved diversification rather than a repackaging of familiar risks.
- **Cash flows are structurally more defensive:** Revenues are frequently underpinned by long-dated PPAs, regulated tariffs, capacity payments, and tolling or

Figure 6: Infrastructure, asset-backed finance, and higher-risk commercial real estate are among the asset types most likely to transition to non-commercial banks

Assessment of factors affecting nonbank penetration of US asset classes

Propensity to transition to non-commercial banks: ■ Low ■ Medium ■ High

		Duration mismatch with banking deposits	Ease of origination for nonbanks	Impact to bank ROE after Basel III endgame	Total
Infrastructure	Project finance	High	High	High	High
	Standard loans	Medium	Low	Medium	Medium
Corporate and commercial finance	Structured loans	Medium	Medium	Medium	Medium
	Equipment leasing	Low	Low	Low	Low
	Aircraft and railcar leasing	High	High	Low	High
	Receivables financing	Low	Low	Low	Low
	Trade finance	Low	Low	Low	Low
	Regulatory <80% LTV ratio	High	High	High	High
Commercial real estate	Construction loans and bridge financing	Low	Low	Medium	Low
	Regulatory >80% LTV ratio	High	High	High	High
	Nonregulatory	High	High	High	High
	Auto loans and leases	Medium	High	Low	Medium
Consumer finance	Student loans	High	High	Low	High
	Unsecured personal loans	Low	Medium	Low	Low
	Credit card receivables	Low	Low	Low	Low
	Residential mortgages	High	High	High	High

Source: McKinsey analysis. The next era of private credit. Impact on corporate loans will vary based on the type of borrowers. Examples of structured loans include acquisition finance and leveraged finance. LTV = Loan to Value.

offtake arrangements — many explicitly inflation-linked via CPI indexation or fixed escalators. This can help reduce the sensitivity of returns to the broader economic cycle and may offer inflation resilience, unlike fixed-rate residential mortgages or many asset-backed and commercial real estate exposures.

- **Risk profile is more resilient:** Infrastructure and project finance debt has historically shown credit losses and defaults well below comparably rated corporate credit. Unlike higher-risk commercial real estate or the consumer-linked exposures within jumbo mortgages and asset-backed finance, it is underwritten against contracted or regulated cash flows from physical assets — not property cycles, borrower creditworthiness, or consumer behavior.
- **Well positioned to benefit from durable energy demand tailwinds:** The multi-trillion-dollar capital needs tied to AI data center buildout, power generation, grid modernization, electrification, and aging infrastructure replacement dwarf the growth opportunities in the other three asset classes and should persist for decades.

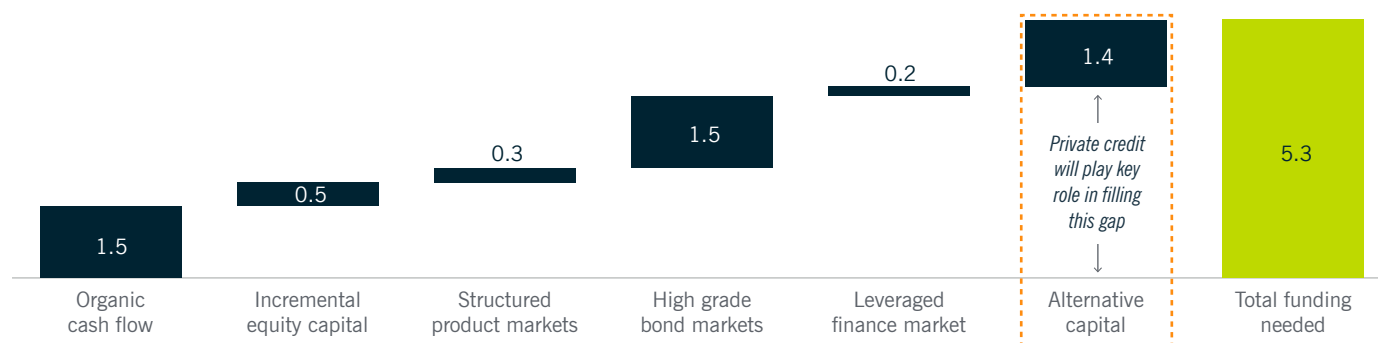
Unprecedented AI capital demand. The buildout of AI infrastructure has created capital demand on a scale the sector has never seen. As shown below, JP Morgan estimates roughly \$5.4 trillion in AI and data center funding needs through 2030, of which approximately

\$1.4 trillion cannot be met by organic cash flow, incremental equity, or traditional high-grade and leveraged finance markets — a gap that private credit is expected to fill. Critically, data centers require not only the facilities themselves but also the power generation, grid connections, and cooling systems that support them, much of which is financed as infrastructure. This demand is arriving faster than public markets can absorb, opening substantial room for non-commercial bank lenders.

Capital-intensive reindustrialization. Beyond AI, a broader wave of global reindustrialization is driving sustained infrastructure investment: reshoring of manufacturing and infrastructure supply chains, electrification of transport and industry, grid modernization, and the replacement of aging infrastructure across developed markets. As the electricity-demand data below illustrates, industry is projected to be the single largest driver of global electricity demand growth between 2024 and 2030 at 23.8%, with electric transport (12.9%) and other electrification adding further to the total — collectively a far larger share of demand growth than data centers alone (8.2%). Each of these trends is highly capital-intensive and long-dated, precisely the profile that suits patient, non-bank infrastructure lenders rather than balance-sheet-constrained commercial banks.

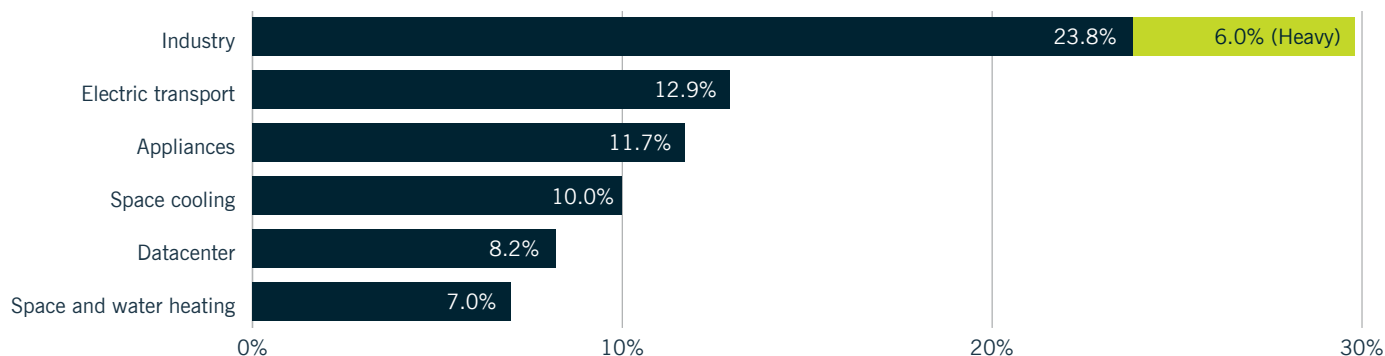
Figure 7: JP Morgan estimated AI / datacenter funding sources through 2030

\$USD, trillions



Source: J.P. Morgan

Figure 8: Increase in global electricity demand by sector, 2024–2030



Source: Halcyon / Nat Bullard: Decarbonization: Parameters, Dollars and Sense, Electrons Photons Molecules.

The two-sided value proposition

Infrastructure private credit's growth reflects a rare confluence of interests: the same structural features that make it attractive to investors also make it attractive to borrowers. For investors, the contracted or regulated cash flows and physical-asset base translate into premium yields, strong protections, and inflation-linked income. For borrowers, the private, negotiated nature of these loans delivers speed, customization, and partnership that public markets and commercial banks increasingly cannot match. This section examines both sides in turn.

Infrastructure private credit offers institutional and qualified investors a distinct combination of features that set it apart from both corporate direct lending and public market alternatives. While many of the underlying attractive elements parallel those of broader private credit — premium yields, seniority, strong contractual protections, and floating-rate exposure — infrastructure private credit layers on additional benefits driven by the contracted or regulated nature of the underlying cash flows and the physical asset base supporting repayment:

- **Premium yield with differentiated risk drivers:** Infrastructure private credit has historically offered yields above public market alternatives such as broadly syndicated loans and high yield bonds. While senior infrastructure debt typically yields below corporate direct lending given its more conservative risk profile, it offers a distinct combination of features that justifies its place alongside, rather than as a substitute for, corporate direct lending: lower default rates than comparably rated corporate credit, with Moody's project finance studies consistently showing 10-year cumulative default rates

converging to investment-grade corporate levels; higher ultimate recoveries, often above 75–80%, meaningfully exceeding senior unsecured corporate recovery rates; and returns driven by asset-specific contracts and regulatory frameworks rather than broad corporate credit cycles, providing a differentiated source of return within a private credit allocation and lower correlation to macro economic conditions. Moreover, bespoke infrastructure debt solutions at the platform or corporate levels are now generating returns similar to direct lending strategies.

- **Strong contractual protections:** Infrastructure private credit loans typically carry a robust covenant package designed around project-level cash flow performance rather than corporate financial metrics, creating downside protection while functioning as early indicators of project underperformance. Debt service coverage ratio (DSCR) tests restrict distributions to equity, ensuring cash flows meet defined thresholds before sponsors can extract returns. Distribution lockups and excess cash sweeps work in tandem with these coverage tests, trapping excess cash flow within the project if performance deteriorates below agreed levels. Debt service reserve accounts (DSRAs) and major maintenance reserves provide additional liquidity buffers, and restrictions on additional indebtedness and changes to the project's contractual framework protect the integrity of the security package.
- **Stable, often inflation-linked cash flows:** A defining feature of infrastructure private credit is the contracted or regulated nature of the underlying cash flows. Many infrastructure assets generate revenues that are explicitly inflation-linked or insulated from broader economic cycles, including: long-dated PPAs with utility,

corporate, or hyperscaler offtakers, contracted renewable energy revenues supported by feed-in tariffs, capacity payments from regulated markets and resource adequacy programs that compensate assets for availability rather than production, such as tolling and offtake agreements for battery storage, and regulated transmission and midstream tariffs with cost-of-service rate frameworks.

The mirror image of these investor benefits is an attractive proposition for borrowers, which is itself a key factor driving the asset class's growth. Project sponsors, infrastructure equity funds, and corporate borrowers financing physical assets have demonstrated a willingness to pay the generally higher costs of private credit relative to public market and traditional commercial bank alternatives in order to take advantage of several attractive characteristics. Many of these mirror those that have driven corporate borrowers toward direct lending — speed, customization, confidentiality, and partnership orientation — but they take on infrastructure-specific dimensions that make private credit particularly well-suited to the demands of project financing:

- **Speed and certainty of execution:** Public markets and commercial bank syndications can be affected by macroeconomic volatility, causing dislocations and pull-backs in lending activity. Infrastructure private credit funding tends to be less affected, making it more available with less variation in terms across market environments, and investments are often executed more efficiently because they typically involve a single lender or small club rather than the broad syndicates required for public or large bank-led financings. For infrastructure borrowers, this matters acutely in two contexts: competitive M&A processes, where sponsors need committed financing to win auctions against well-capitalized bidders; and time-sensitive construction starts, where financing delays can cascade into delays in equipment delivery, interconnection, or contractual milestones.
- **Customization and flexibility:** Private credit investments offer customized terms tailored to the specific needs of a project rather than the standardized terms imposed by public markets or constrained by bank product structures — a particular need in infrastructure given the diversity of project cash flow profiles across construction, ramp-up, and operating phases. Private lenders can structure a wide range of bespoke features, including: delayed-draw facilities and capital expenditure facilities that align funding with construction milestones; bespoke reserve account mechanics (debt service reserve account, major maintenance, and ramp-up

reserves) calibrated to project-specific risks; holdco and structurally subordinated debt, often unavailable from commercial banks, layered in to expand total leverage capacity beyond what senior project debt alone can accommodate; and single-lender or club construction-to-term financings with embedded conversion to long-term debt that reduces refinancing risk.

- **A partnership-oriented lending relationship:** Investments with private credit managers come with access to sector expertise, insights, and commercial networks that go beyond capital provision. This partnership orientation is especially valuable in infrastructure, where financings extend over long periods and where sponsors benefit from working with lenders who understand sector-specific issues such as interconnection queues and offtake counterparty dynamics, and who can support follow-on financing as projects scale, portfolios expand, or refinancing opportunities arise. The relationship orientation of private credit lenders also tends to translate into more constructive engagement around amendments and restructurings if a project encounters unexpected challenges.

Risks and other considerations

While infrastructure private credit offers an attractive risk-adjusted return profile, it is not without risk, and a balanced assessment requires acknowledging the considerations that investors must weigh. Many of these risks are structural features of the asset class rather than flaws, and the same characteristics that create resilience — long duration, illiquidity, and asset-specific exposure — also introduce trade-offs that make the strategy most suitable for a particular type of investor:

- **Illiquidity and long duration:** Infrastructure private credit loans are privately negotiated, buy-and-hold instruments with limited secondary market liquidity and tenors that frequently extend well beyond those of corporate direct lending. Investors must be prepared to lock up capital for extended periods and generally cannot readily exit positions quickly if circumstances change. This illiquidity is the source of the premium yield the asset class offers, but it makes the strategy appropriate primarily for investors with long-dated liabilities or a genuine ability to absorb illiquidity, such as insurers and pension funds.

- **Construction and completion risk:** Greenfield and development-stage projects carry risks not present in operating assets, including construction delays, cost overruns, contractor default, and the failure to achieve commercial operation on schedule. These risks can be acute given infrastructure's dependence on equipment delivery, interconnection timelines, and permitting. Lenders mitigate this exposure through delayed-draw structures tied to construction milestones, completion guarantees, contingency reserves, and, where appropriate, by favoring operating assets or construction-to-term facilities with embedded protections.
 - **Concentration and asset-specific exposure:** The very feature that lowers correlation to public markets — returns driven by asset-specific contracts and regulatory frameworks — also means that individual loans carry idiosyncratic, single-asset exposure rather than the diversified cash flows of an operating company. A single adverse event, such as an equipment failure, a resource shortfall at a renewable project, or an adverse regulatory ruling, can materially affect a specific credit. Diversification across sectors, geographies, technologies, and offtake counterparties is therefore essential to managing portfolio-level risk.
 - **Counterparty and offtake risk:** Much of the cash flow stability that defines the asset class depends on the creditworthiness and performance of offtake counterparties — utilities, corporates, hyperscalers, or government entities under PPAs, tolling agreements, and regulated tariffs. The contracted revenue stream is only as reliable as the party obligated to pay for it. Underwriting the counterparty is as important as underwriting the asset, and concentration in any single offtaker warrants particular scrutiny.
 - **Regulatory and political risk:** Infrastructure assets are frequently subject to government regulation, and a meaningful share of their value may derive from regulated tariffs, subsidy regimes, capacity market rules, and permitting frameworks. Changes in policy — including revisions to renewable incentives, rate-setting methodologies, tax treatment, or resource adequacy programs — can alter project economics. This risk is heightened for assets dependent on evolving support schemes and requires careful assessment of the durability and political sustainability of the relevant regulatory framework.
 - **Technology and obsolescence risk:** Certain infrastructure sectors, particularly digital infrastructure and parts of the energy transition, are exposed to rapid technological change. Data centers, battery storage, and generation assets face the possibility that new technologies erode the competitiveness or useful economic life of existing assets. Prudent underwriting accounts for defined economic lives, potential re-contracting or refinancing dynamics, and the risk that an asset's revenue-generating capacity diminishes before the loan is fully repaid. There are structures, such as ongoing amortization, which mitigate these risks that prudent debt investors employ, but requires investment and subject matter expertise.
 - **Interest rate and refinancing risk:** While many infrastructure loans carry floating-rate exposure that benefits lenders in rising-rate environments, elevated rates increase borrower debt service burdens and can pressure coverage ratios. Assets that rely on refinancing at maturity — rather than fully amortizing over the loan term — face the risk that capital market conditions are unfavorable when refinancing is required. Structures that reduce refinancing risk, such as construction-to-term facilities with embedded conversion to long-term debt, help mitigate this exposure.
 - **Manager selection and dispersion:** Because infrastructure private credit is originated through privately negotiated transactions and relies heavily on specialized structuring, sector expertise, and disciplined underwriting, outcomes can vary significantly by manager. The absence of public pricing and the bespoke nature of each investment places a premium on the origination capabilities, sector knowledge, and workout experience of the lending manager. Investors should recognize that returns and risk profiles can diverge materially across managers within the same asset class.
- On balance, these considerations do not detract from the asset class's appeal so much as define the conditions under which it is most appropriate. For income-focused investors with the ability to absorb illiquidity and the discipline to diversify and select managers carefully, the risks are well understood and, in many cases, actively mitigated by the strong contractual protections, comprehensive security packages, and structural features described in the preceding sections.

The bottom line

The rise of infrastructure private credit is usually told as a story of commercial banks retreating and private capital filling the void. Corporate direct lending and infrastructure private credit sit under the same heading, yet one is underwritten against the fortunes of an operating business and the other against the contracted output of a physical asset with a defined economic life. The useful question for investor is therefore no longer, “how much private credit should we hold?” but “which repayment

sources are we actually exposed to, and are we paid appropriately for each?”

Seen this way, the asset class’s most valuable property may not be its lower defaults or premium yield but its genuine orthogonality—returns driven by regulatory frameworks, offtake contracts, and the physics of essential assets rather than a repackaging of familiar corporate or consumer risk. In conclusion, infrastructure debt’s most attractive feature may be the diversification it offers to direct lending private credit investors.

For more information about investing in Energy Infrastructure Credit, please visit nuveen.com/EIC. This white paper was written in collaboration with Susan Hutman, Senior Director, Responsible Investing, Nuveen.

Endnotes

- 1 Deloitte. (2026, January 27). Private debt funds and their distribution to retail markets.
- 2 <https://bankingjournal.aba.com/2023/11/the-basel-iii-endgame-proposal-yet-another-gift-to-private-credit-funds/>

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