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October 2024

Powering returns:

Why non-investment grade energy infrastructure debt now?

Don Dimitrievich

Senior Managing Director, Portfolio Manager, Energy Infrastructure Credit, Nuveen

SUMMARY

The global transformation to sustainable energy is one of the most important investment themes of our generation. Governments and businesses across the globe are seeking to decarbonize at the same time digitalization and generative artificial intelligence (AI) are driving demand for power. How can investors benefit from these two megatrends?

The capital requirements to fund the infrastructure build-out driven by the global energy transformation and digitalization will be unprecedented in scale and urgency of deployment. Historically, infrastructure financing has largely been provided by banks and the investment grade debt market. Increased regulatory pressures have caused banks to retreat from lending while infrastructure spending has experienced tremendous growth due to these two megatrends.

We believe non-investment grade private debt capital can help fill this void by providing flexible and bespoke financing solutions. This opportunity is comparable to the disintermediation of the leverage finance markets by private credit over the past decade.

This emerging private credit asset class offers investors an attractive alternative to corporate credit as infrastructure assets generally provide essential services, generate stable and predictable cash flows and are characterized by low historical default rates.

UNPRECEDENTED MARKET OPPORTUNITY

According to BloombergNEF, global energy transition investment needs to average $4.8 trillion per year between 2024 and 2030 to meet the Paris-aligned Net Zero Scenario. This level of investment is almost triple the $1.8 trillion spent in 2023. BNEF expects investment levels to grow substantially in the long term, with global energy transition investment forecasted to increase to $6.6 trillion per year from 2031-2040.

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In the U.S., deploying climate solutions will require a 3.5x increase from current investment levels, rising to a $1.1 trillion annualized investment over 2024 to 2030 from approximately $303 billion in 2023.[1] To put the scale of this financing opportunity in perspective, the entire U.S. private credit market is estimated to be roughly $1.7 trillion.[2]

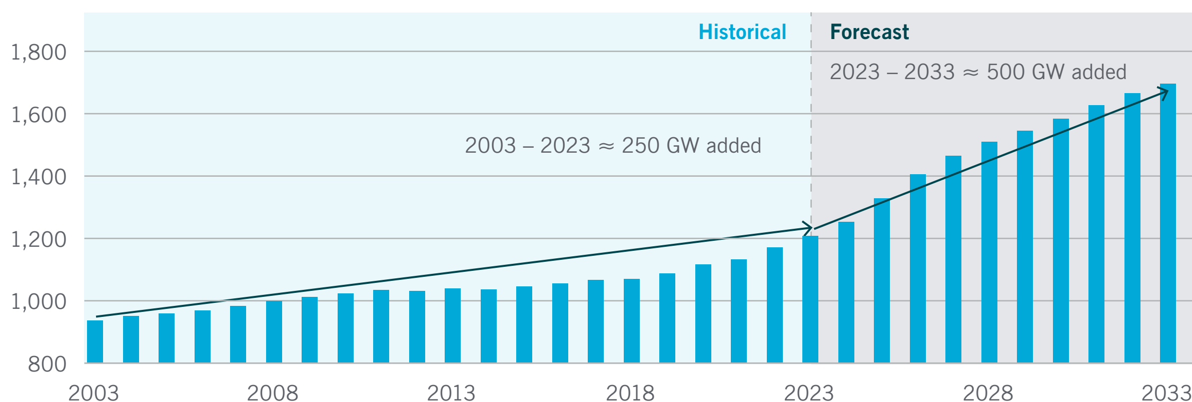
Decarbonization touches almost every sector of the economy, providing sustainable power to homes, offices, transportation and industrial processes. In parallel with decarbonization, digitalization and AI are driving significant growth in energy demand. On average, a ChatGPT query needs nearly 10 times as much electricity to process, compared to a typical Google search. Goldman Sachs Research estimates that data center power demand will grow 160% by 2030.[3] Between 2022 and 2030, the demand for power will rise on a compounded annual growth rate of roughly 2.4%, of which 37% of the total growth will be tied to data centers.[4] To meet the power demands of decarbonization and digitalization, a wide spectrum of capital-intensive solutions will be required, such as renewable electricity generation projects (wind and solar), energy storage and energy efficiency. Regardless of the political winds, the secular trend of increasing demand for sustainable electric power will likely remain a significant investment opportunity, requiring flexible financing solutions to augment traditional sources of capital.

TRADITIONAL SOURCES OF CAPITAL UNDER REGULATORY PRESSURE

The 2008-2009 Global Financial Crisis (GFC) had a profound impact on the infrastructure financing markets. Prior to the GFC, international banks financed over 90% of the world's private infrastructure debt.[5] Strained balance sheets at commercial banks during this time enabled institutional investors to step in and support funding gaps. While commercial banks remain an important player, institutional investors have significantly grown their presence in infrastructure debt markets. Under increasing regulatory pressure and capital constraints, we believe banks will be restricted in their capacity to fund the scale of the decarbonization and power generation build-out. Regulatory capital requirements due to Basel III are especially challenging for banks in the non-investment grade loan market. Global Infrastructure Hub captures the challenge facing banks in the infrastructure market:

> "The latest Basel III reforms reduce the attractiveness of infrastructure investments for the banking sector, where risk weights applied to project finance loans are significantly higher than those in historical infrastructure project risk profiles. As a result, we are seeing banks withdrawing from infrastructure projects. We expect to see this pattern grow in the coming years."[6]

Figure 1: U.S. electric power sector generation capacity (GW)[7]



Source: Historical U.S. electric power sector generation capacity: U.S. Energy Information Administration (EIA) Annual Electric Generator Report (released September 2023), Forecast of U.S. electric power sector generation capacity: EIA Annual Energy Outlook 2023 (released March 2023)

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Private credit is poised to play a critical role in filling the void left by banks, providing creative financing solutions to infrastructure issuers seeking capital.

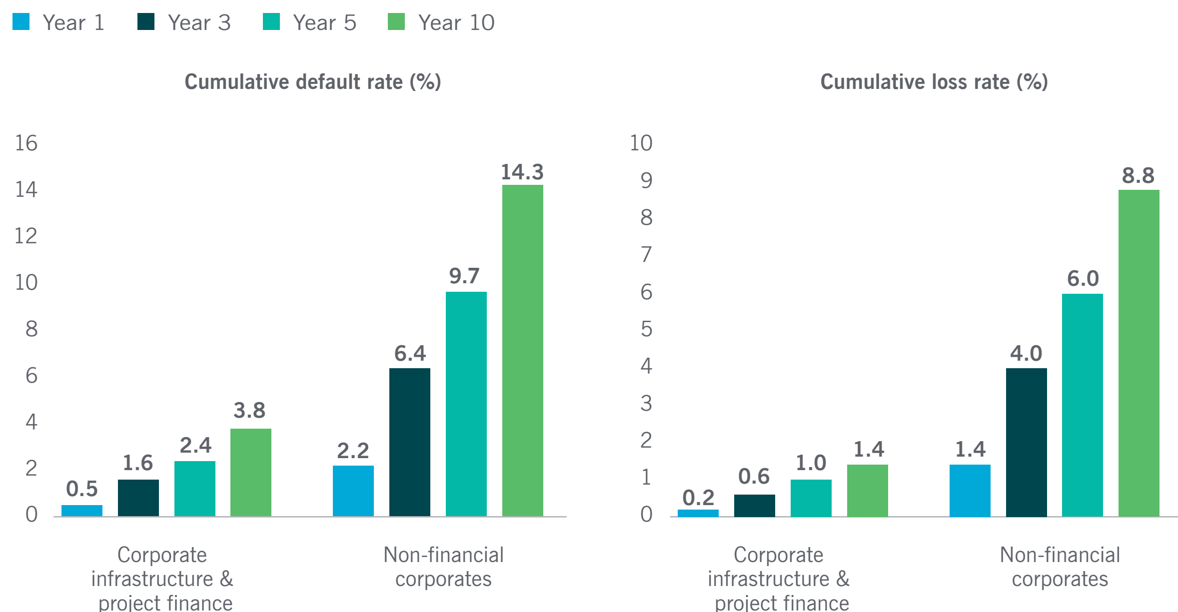
THE POTENTIAL FOR ATTRACTIVE RISK ADJUSTED RETURNS

Infrastructure assets offer private credit investors several advantages over corporate non-investment grade credit, including:

- Lower historical default and loss rates than non-financial corporate debt.
- Stable, defensive income streams which are less correlated with the public equity and corporate credit markets.
- Essential services to consumers and businesses such as electric power, heating and cooling.

As illustrated in Figure 2 below, infrastructure debt has historically experienced lower cumulative loss and default rates than non-financial corporate debt. We believe these lower rates result from the stable cash flows and essential services provided by infrastructure assets. Core infrastructure assets in developed countries demonstrate monopolistic or quasi monopolistic traits and benefit from high barriers to entry.[5] In addition, the long-lived and physical nature of most infrastructure assets provides lenders with real asset collateral. We believe the combination of these positive credit considerations lowers rates of default and boosts rates of recovery.

Figure 2: Cumulative default and loss rates



Source: Moody's Investor Services: Infrastructure default and recovery rates, 1983-2023 (released July 2024).

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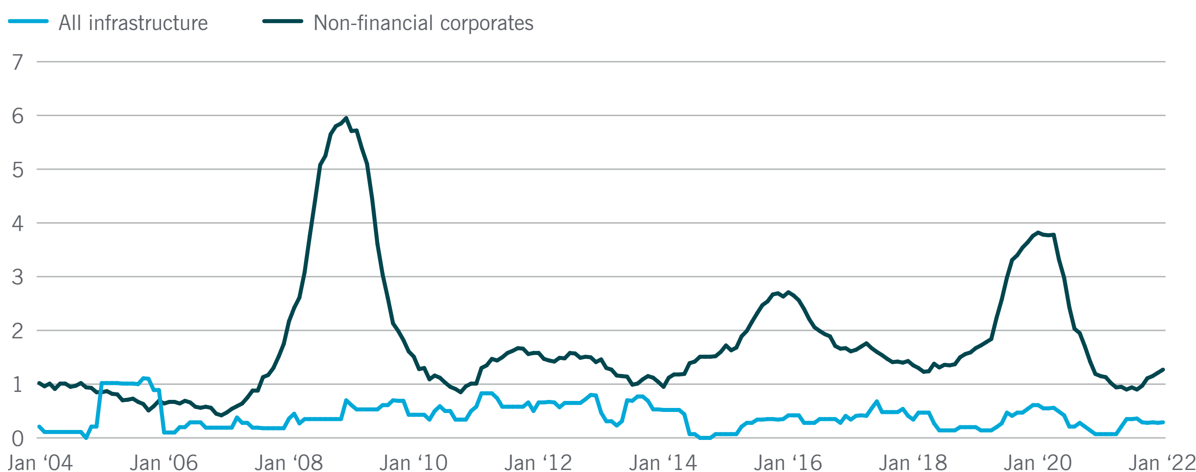
Figure 3: Infrastructure and non-financial corporate debt trailing 12-month default rate (%)



Source: S&P Global (Ratings Direct) – default, transition, and recovery: 2022 annual infrastructure default and rating transition study (released November 2023).

Figure 3 illustrates that infrastructure debt is not closely correlated with business cycles or corporate credit. While default rates for non-financial corporates spiked during the GFC, the 12-month rolling default rates for infrastructure remained below 1%.

OPPORTUNITY FOR FLEXIBLE PRIVATE DEBT SOLUTIONS

Traditional infrastructure debt providers are often rigid in the types of capital structures and projects they are willing to finance. Private credit can step in to provide bespoke solutions outside the scope of normal project financings. Examples include energy efficiency, financing of renewable development platforms, energy storage projects, digitalization, and infrastructure supply chain projects.

Private capital can also be more flexible in where and how it plays in the capital structure. For example, private energy infrastructure credit used to finance a renewable power developer may be junior to the debt at the project level but have a first lien on development and/or other corporate assets. The entire financing would be underpinned by infrastructure assets, which have historically had lower default and loss rates than non-financial corporate credit.

Private credit can provide nontraditional financing structures while also retaining many of the benefits of traditional infrastructure debt, such as financial covenants, amortization, excess cash flow sweeps, restrictions on asset sales and dividends, hard collateral and structural seniority to equity investors. Non-investment grade private credit targets attractive returns with a significant premium to investment grade debt through a combination of upfront fees, coupon and call protection, while maintaining the benefits of traditional infrastructure debt.

MISMATCH IN INFRASTRUCTURE EQUITY AND PRIVATE CREDIT FUNDRAISING

While private infrastructure equity is a well-established asset class, private infrastructure credit, although growing, is dwarfed in comparison. Infrastructure equity represents 91% of cumulative private capital raised since 2006 versus only 9% for private infrastructure debt (Figure 4). We believe infrastructure private credit as an asset class is in its infancy and poised for significant growth.

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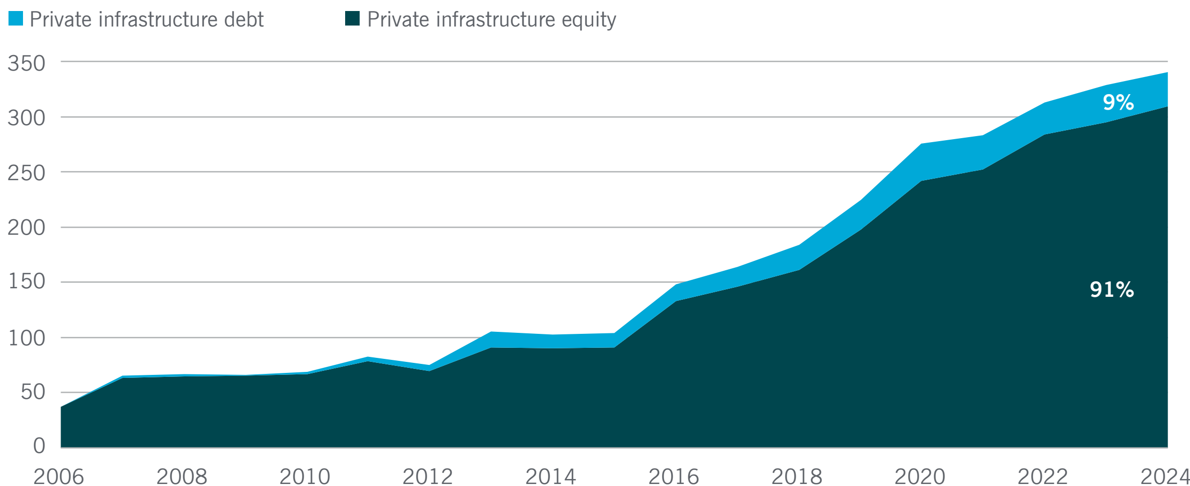
Figure 4: Global infrastructure private capital dry powder ($billion)



Source: Preqin Ltd, May 2024. Private infrastructure equity is composed of core, core plus, value added and opportunistic funds.

CONCLUSION

We believe private credit investment managers that have significant energy and power industry experience, combined with credit underwriting expertise, are well positioned to take advantage of the investment opportunities arising from the megatrends of decarbonization and digitalization. These trends will require an unprecedented investment in energy and power infrastructure to meet surging demand. Private infrastructure credit is well suited to provide flexible debt capital solutions to issuers with the potential to generate strong risk adjusted returns.

Note: This paper was written in collaboration with Malcolm Bean, Associate, Energy Infrastructure Credit, Charlotte Daelemans, Real Assets Specialist, Sarah O'Malley, Investment Strategist, Energy Infrastructure Credit, and John Peruzzi, Managing Director, Energy Infrastructure Credit.

For more information, please visit our website, nuveen.com/infrastructure.

Endnotes

1 BloombergNEF: The Energy Investment Transition Trends 2024, January 30, 2024.

2 Bloomberg: Everybody's going into private credit now, April 2024.

3 Goldman Sachs: AI is poised to drive 160% increase in data center power demand, May 14, 2024.

4 Ibid. The 37% power demand growth rate attributed to data centers was calculated by taking the 0.9% CAGR for data center growth divided by the 2.4% total growth rate.

5 MetLife Investment Management, infrastructure debt investments: An overview September 21, 2020.

6 GI Hub CEO Marie Lam – Fendo published in Infrastructure Investor: Mitigating the impacts of Basel III on private infrastructure investment, November 23, 2023.

7 Historical electrical sector generation capacity from 2003 to 2022 - EIA-860 Annual Electric Generator Report (released: 9/20/2023) – Existing Nameplate and Net Summer Capacity by Energy Source, Producer Type and State (EIA-860) – https://www.eia.gov/electricity/data/state/ (State Code: US, Fuel Source: All Sources, Producer Type: Combined Heat and Power, Electric Power - Electric Generators, Electric Utilities - Electric Generators, Independent Power Producers).
Forecast of electrical sector generation capacity from 2023 to 2033 - Annual Energy Outlook 2023 (released: 3/16/2023, Reference Case Projections Tables – Table 9. Electricity Generating Capacity, https://www.eia.gov/outlooks/aeo/tables_ref.php) – Row 74: Total Electric Power Sector Capacity.

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