

Why now is a generational opportunity for infrastructure debt

Nuveen's Don Dimitrievich explains how decarbonization, energy security, and AI have created a step change in power demand

Why should investors allocate to infrastructure debt now? And which strategies look especially promising?

The demand for capital in infrastructure debt, particularly within the energy and power sectors, is expanding at an unprecedented rate – levels unseen in the last 20 years. The reason for that is threefold.

Number one is the trend to decarbonize, which typically takes the form of electrification. Number two is energy security reasons, particularly in Europe and North America, where there's a concern associated with relying on Russia for natural gas and China for critical materials and equipment for clean energy. As a result, there's a renewed focus on the onshoring of the infrastructure supply chain, which will require significant power for those domestic production facilities. Number three is the development of artificial intelligence (AI) and the power consumption that will potentially entail. The convergence of these three trends means we're likely to see a historical capital deployment opportunity to facilitate this increased power demand.

So how do we fund that? A typical infrastructure project is debt financed for 60–80% of the capital structure. In the US, you often also have tax equity as part of the capital solution, and project equity. For the hundreds of billions or potentially trillions of investment that will be needed annually to meet power demand globally, infrastructure debt is going to be a critical source of capital. In terms of the current infrastructure debt opportunity, we're seeing two key themes.

Firstly, with the increase in base rates over the last two years, you're able to generate all-in returns that are equivalent to where infrastructure equity returns have historically been. Secondly, by accessing the market opportunity as a credit investor, you are better protected than equity providers, while benefitting from very appealing risk adjusted-returns. When structured properly these transactions can offer significant structural and covenant protection.

How are the effects of climate change affecting both the demand and risk/return profile for infrastructure as an asset class?

Energy and power demand is growing globally, so how do we fund that in a responsible way? Hydrocarbons still make up about 80% of the global energy supply, so part of our strategy is to invest in projects that cut CO2 emissions while also supporting assets that bolster energy resilience and security. We can't just disregard 80% of the energy supply that is hydrocarbon-based, so we continue to look at investing in opportunities that provide secure energy supply in a responsible manner that reduce CO2 or methane emissions on a unit basis.



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As an industry, we've also had some challenges with the pace of clean energy deployment to meet the anticipated need for growing power demand. One challenge is capital intensity, as most of the capital for renewable projects must be invested upfront, as sun or wind are free, contrary to traditional energy assets, where the input costs of oil or gas are considerate. The increased interest rates that we've experienced over the past two years have made the construction of renewable projects more costly. Then there are permitting delays. In the US, it takes on average 40 to 70 months to get a project approved, which has put pressure on being able to develop renewable projects to meet demand growth. And lastly, infrastructure supply chain delays. Even though supply chains have normalized in a lot of industries since COVID-19, in infrastructure we're still seeing long lead times for transformers, breakers, and in some cases inverters. The delays and increased costs have created tension as we try and rapidly invest in these technologies. That said, it's also an opportunity for investors such as Nuveen where we can provide flexible capital.

How has the increased need for power and electrification developed historically?

Using the US as an example, power demand has been relatively flat for the last two decades. Over the past 10 years, it's estimated that the compound annual growth has been approximately less than 0.5%. Estimates going forward for this decade are anywhere from 1.5–2.5% due to decarbonization, the onshoring of the infrastructure supply chain and increased manufacturing activity, and AI-related power demand. As a result, you're talking about a step-fold increase from where we've been over the past two decades. The reality is that most of the people working at utilities haven't seen this type of demand growth in their careers. So we need to invest in renewables and energy storage, as well as energy efficiency that can help reduce demand.

The war in Ukraine, and the consequent disruption in Russian gas to the European continent, led to the increased use of coal fired power generation. This in turn, created more awareness for the need for energy security and the recognition that natural gas can be part of the solution, to avoid reliance

on dirtier sources of energy. In commercial and pragmatic terms, we should invest in natural gas to help meet surging power demand but remain vigilant in doing so responsibly and committing to investment strategies that help facilitate the longer-term trend of decarbonization.

How will the growth of digitalization impact power needs, and consequently infrastructure?

Generative AI is potentially a powerful game-changer. All the major tech companies are investing in this technology, which will require a significant amount of incremental power. We've been seeing this trend build over the last several years, and it's now widely recognized that power supply is the bottleneck for the build-out of large-scale data centers. The one cautionary point I would also make is that we're seeing potentially hundreds of billions of expected investment in AI. If it turns out that the anticipated efficiency gains from AI don't fully materialize, we're going to find ourselves with significant excess data center and power capacity. As credit investors, we're focused on ensuring that projects we finance have off-takers that are well-capitalized and strong counterparties so that we can guard against potential issues down the road associated with excess power capacity.

What are the benefits of non-investment grade infrastructure debt when applied to investing in the clean energy and natural gas sectors?

The investment project finance market can be appropriate if the project meets certain defined criteria to meet investment grade credit risk, such as fully contracted offtake or certain debt service coverage ratio and other cashflow metrics. In those instances, the private placement project finance debt is often the right solution, and from a cost of capital perspective, it's appropriate.

Where non-investment grade infrastructure debt really comes into the equation is where there's a need for the project equity owner to have more flexibility in terms

of the capital structure. As non-investment grade debt providers, we may not need as long of an offtake duration as traditional investment grade project finance, and we can work with different ways of being paid down through excess cash sweeps.

The Basel III framework has imposed stringent regulatory requirements on banks, including increased capital charges, which impacts their ability to provide debt capital. That limits banks' ability to lend, which could have an impact in investment areas where banks have been more active. For example, commercial banks have been more active in the European infrastructure market, so banks may be more constrained to meet the growing capital needs as the addressable market expands dramatically. This creates a significant opportunity for providers of flexible capital.

What misconceptions may investors still hold about infrastructure debt?

When people hear the term infrastructure debt, they sometimes only think about the very long-duration project finance investments. While there is a need for such capital, there is more room in investors asset allocation for flexible capital solutions like we focus on in the non-investment grade space, as it provides attractive risk adjusted returns. The misconception here is that achieving higher returns than historically expected involves taking on equity-like risks, but there are more opportunities available apart from equity and project financing. Part of this stems from the asset class's evolution. In the coming years, we're likely to see hundreds of billions in annual capital deployment, and, when structured with an appropriate return profile for each project, non-investment grade infrastructure can offer attractive returns. This can be achieved while maintaining downside risk mitigation, allowing investors to avoid the risk levels associated with equity investments.

Don Dimitrievich is a Senior Managing Director and Portfolio Manager for Energy Infrastructure Credit at **Nuveen**. He joined Nuveen in November 2022 to establish a multi-billion credit and structured equity investment business to ensure secure energy supply and provide sustainable energy solutions to decarbonize energy consumption.