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Sustainable supply chain opportunities take center stage

Don Dimitrievich from Nuveen explains where the opportunities lie in sustainable energy supply chains

Given the backdrop of the Inflation Reduction Act's passage in 2022, 15 months later this historic legislation is supercharging a resurgence of US manufacturing, particularly by supporting supply chain industries that facilitate the decarbonization of power generation and the broader economy. There is wide recognition that a significant increase in power generation will be required to decarbonize the economy – as much as two to three times more than current levels over the next two decades. The capital investment to achieve those targets for the US alone may be as high as $500bn to $1tn annually.[1] With 25 years of investing experience in energy and infrastructure, Don Dimitrievich, Senior Managing Director and Portfolio Manager of Nuveen's Energy Infrastructure Credit business, discusses how the convergence of these two factors could lead to a US manufacturing renaissance in the sustainable energy supply chain and present compelling investment opportunities for infrastructure debt investors.

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How do you view the opportunities today when investing in infrastructure decarbonization opportunities?

The widely recognized need to decarbonize power generation represents a historic opportunity to invest in many asset classes that aim to decarbonize the economy, including renewable generation, energy storage, renewable fuels, energy efficiency, and the circular economy. With these opportunities in mind, sustainable energy supply chains have since become a core focus of our investment strategy. As geopolitical and national security concerns have grown more prevalent, there is a recognition in North America and Europe that having domestic production of the supply chain for infrastructure assets, such as solar cells, panels, inverters, and batteries used for energy storage, is crucial. Relying on global trade, with equipment often sourced from China, is no longer considered a viable option for most US solar and storage developers. Infrastructure investors that recognize this will be able to capitalize on this investment opportunity over the coming years to build out the domestic infrastructure supply chain.

What makes investments in the sustainable energy supply chain attractive?

There are several key trends that together make investing in the sustainable energy supply chain a very attractive risk-adjusted opportunity, and a critical part of the decarbonization narrative in the decades to come.

First, from a demand perspective, we will need significantly more equipment to build the renewable generation and energy storage projects required to meet the increased power generation. As an example, in 2020, 10 gigawatts (GW) of solar projects were built in the US, with that number expected to be approximately 30 GW this year. This is expected to increase by more than three times to 100 GW per year by the end of the decade.[2]

Secondly, government support to incentivize investors and companies to build domestic supply chains is historic in terms of the scope of the monetary incentives potentially leading to a manufacturing renaissance in the US. In addition, the US has imposed tariffs and countervailing duties to discourage companies from purchasing sustainable energy infrastructure from countries that give rise to national security concerns; for instance, solar panels manufactured in China and other Southeast Asian countries are subject to tariffs and duties, making domestically produced panels more economic, once the IRA incentives are taken into account.[3]

Are supply chain opportunities riskier than traditional infrastructure assets?

There is a perception of higher risk in some cases, but we believe it's misguided for the types of supply chain opportunities we're pursuing. All the opportunities we consider involve proven technology with hard assets, contracted offtake with high quality counterparties, strong cash flow, and robust debt service. These projects have all the classic attributes of a typical infrastructure asset. In many instances, such as solar panel production or battery manufacturing opportunities, the equipment is modular in nature, so there is limited project execution and assembly

1 https://about.bnef.com/energy-transition-investment/
https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring

2 https://rhg.com/research/clean-investment-monitor/

3 https://www.reuters.com/markets/commodities/us-says-solar-imports-four-southeast-asian-countries-were-dodging-china-tariffs-2022-12-02/

risk in contrast to the more involved construction risk of traditional infrastructure assets. In other words, the risks associated with supply chain infrastructure could in some cases actually be lower. While the offtake contracts often have shorter durations than traditional infrastructure projects, as credit investors, we can mitigate this risk with scheduled amortization and cash sweeps.

With all the capital that has been raised for infrastructure investments over the last several years, what does the competitive landscape look like for supply-chain investments?

While it's true that infrastructure funds have raised significant capital for decarbonization opportunities, most of this is dedicated to more traditional energy infrastructure assets, such as renewable generation, or hydrogen-oriented and other greenfield technology opportunities. This large influx of capital has not yet been directed to sustainable energy supply chain opportunities, even though the capital need for those opportunities is significant and growing. To put this in context, five years ago, the amount of capital invested in sustainable energy supply-chain opportunities in the US was approximately $2bn, and has grown to $39bn as of last year, before any material impact from the IRA has been made.[4] You can imagine that this opportunity set could increase by hundreds of billions as the significant incentives provided by the IRA and REPowerEU start to take effect. We expect other infrastructure investors will eventually recognize that supply chain investments have attributes similar to other infrastructure assets and can generate better risk-adjusted returns. However, in the interim, this is an opportunity we're pursuing that is less competitive from a capital perspective with better structural and covenant protection.

What benefits can infrastructure debt as an asset class provide to investors seeking to invest in supply-chain opportunities?

There is no doubt that infrastructure debt will play a critical role in funding sustainable energy supply chain investments. Infrastructure debt will likely account for as much as 50–70% of the capital funding required, depending on the structure and risk profile. As we identified earlier, many sustainable energy investments have all the requisite infrastructure attributes – hard assets collateral, strong underlying cash flow generation with offtake contracts and counterparties – making them ideal for credit investing. In fact, we are currently looking at solar cell and panel manufacturing projects, as well as battery and energy storage opportunities, with these characteristics which we believe have very attractive risk-return metrics.

Additionally, even beyond supply chain infrastructure investments, infrastructure debt as an asset class is particularly well suited to the current macro environment concerns surrounding interest-rate volatility and continued inflationary pressures. Infrastructure debt can be structured with a floating rate coupon, which provides interest rate protection. It can also mitigate some of the current market volatility with its steady cashflow, collateral protection, and reduced reliance on equity valuations. In many respects, we believe infrastructure debt is the most attractive investment strategy to take advantage of the growing sustainable energy supply chain opportunities, while mitigating the current market interest rate and inflationary concerns.

Case study of potential investment

Nuveen's energy infrastructure credit platform has the opportunity to support one of the first US solar manufacturing facilities, located in the Midwest, which will produce approximately 3 GW of solar cells and modules, utilizing a leading technology. This facility is expected to come online in 2025 with a substantial equity investment from a leading solar developer and private equity firms that specialize in power and the energy transition. The investment, structured as a senior secured term loan, benefits from strong downside protection with scheduled amortization and offtake contracts with high credit quality counterparties. By recognizing that a solar manufacturing investment is infrastructure-like, we are able to structure it with attractive risk-adjusted returns on a relative basis.

4 https://rhg.com/research/clean-investment-monitor/

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.