

Igneo Infrastructure Partners

Energy transition: Investment opportunities along a dynamic road

A Q&A with John DiMarco, a managing director with Igneo Infrastructure Partners and member of its investment committee for North American infrastructure assets, about the state of energy transition and related investment opportunities

Where are we in the energy transition?

Energy transition is a continuum and will take a long time. Certain areas of industry have made great progress in decarbonizing, and others have a long way to go. The electric power grid is furthest along. In 2024, the renewable share of electricity generation is about 22 percent in the United States, including hydro. It was one-fourth of that 10 years ago. That's meaningful, but it leaves a huge gap. If you add 20 percent for nuclear, we're 42 percent clean. Gas has replaced a significant amount of coal, and that's meaningful by itself. Longer term, renewables will have to slowly replace gas. But there remain impediments to transition in the electric power industry.

What are some of those impediments?

As an example, right now there is massive deployment of solar power, surpassing wind in terms of new installations. That's driven by the substantial reduction in the levelized cost of energy for solar. Just because something is cheap and works, doesn't mean it's easy to deploy.

In the near term, there are challenges with interconnecting power plants onto the grid. That's partly because of the sheer volume of applications and the relatively few resources authorities have in assessing those upgrades. The waiting time to process applications has ballooned in virtually every power market in the United States. In some cases, the time to interconnect is three times or more what it used to be. That's a real challenge because accelerating the energy transition is limited by the inability to get onto the grid.

U.S. electric grids are managed by a patchwork of federal, state and local governments, regulatory and regional organizations. Permitting and planning transmission while navigating all of these stakeholders is very challenging. Much of the renewable resources in the United States are in areas that aren't heavily populated. The center of the country is a huge wind corridor. Generally, however, it has few large population centers. To make productive use of that wind resource, long-haul transmission is needed to deliver power to large population centers, and that brings us back to the challenges of permitting and planning.

Over time, with long-haul transmission planning and more resources focused on interconnection, the grid can be upgraded, but right now it is inadequate to move the percentage powered by renewables to needed levels.

What about other industries?

In the United States, transportation contributes approximately 40 percent of our carbon emissions, and that number has been increasing. There has been a lot of fervor around electric vehicles. Recent electric vehicle sales have been about 8 percent of

total sales. That is meaningful, but it still represents only about 1 percent of passenger vehicles on the road. If you look at long-haul trucking, rail or aviation, they are largely unimpacted by the energy transition at this point, unfortunately. Contrast that on the passenger vehicle side with China, where electric vehicles represent about 45 percent of new car sales. It does show promise for the future, but the fact is, there is going to be a long transition in transportation, and it's not going to be just electrification. Large forms of transport that aren't set up well for batteries are going to have to find a way to use cleaner fuels. This will take time – right now these solutions are either uneconomic or depend on massive subsidies. A lot of this comes down to what can be done to make solutions economical. It's been proved there is a limit to how much more people will pay for renewable attributes without being compelled to, whether in electricity, transportation or other industries.

Thinking about infrastructure, broadly, and energy transition, specifically, where do they fit within an investor's portfolio? What aspect of infrastructure investing tend to be most important to Igneo's investors?

The first thing to note is that infrastructure fits within a well-balanced portfolio. Correlation is quite low to many asset classes, and it can add some stability to portfolio return. Other attributes include income generation and inflation protection, both of which are very important. With the rise of inflation, the expectation for income generation has increased, as well as scrutiny on the level of inflation protection. Some of the reasons investors first sought this asset class are playing out now. But underlying it all is the recognition that this asset class makes sense in a diversified portfolio. As to energy transition, specifically, it provides these same attributes and allows investors to hold companies that will participate in an ongoing, historic reconfiguring of energy production and consumption globally.

What is Igneo's investment approach?

We seek to generate stable, long-term returns by building a diversified portfolio of mature, middle-market, unlisted infrastructure companies and improving them through our active asset management. Generally, the entry point is dictated by the specific opportunity, as well as putting together a balanced portfolio across geographies and subsectors. We seek to underwrite an industry, understand its key drivers, and how companies are working with each other. We underwrite our investments with a specific plan to improve them, over time.

What have been some of the most significant developments in energy transition, and related investment opportunities, in the United States during the past decade? What issues

that were not on your radar five to 10 years ago are front-and-center today?

Fifteen years ago, solar was nowhere, but 10 years ago it was very much in active development and beginning a period of explosive growth. If you look at the past 10 years, the leveled cost of solar has dropped in half. Solar is very economical now and is the dominant technology in interconnection queues.

The other big development, looking back five or six years, has been the explosion in battery-storage development. Storage is important to managing the cyclicity of renewables, so it's been important to add that to the grid. Ten years ago, however, lithium-ion costs were quite high, and battery storage was still nascent. Compared with 10 years ago, the cost of grid storage has dropped 80 percent to 90 percent, largely because of battery storage, which was less than a gigawatt 10 years ago, where now we will add about 15 gigawatts of storage in 2024. Storage has become so mainstream that when we think about adding renewable generation, it's becoming a near-default assumption there will be some storage included.

Much of that adoption is because of the growth in electric vehicles. There's now a well-developed supply chain established for lithium-ion batteries, and the same battery technology that is in electric vehicles is sitting alongside substations.

What else is on the horizon?

One area is offshore wind. From an energy perspective, it will make sense to build out 25 gigawatts to 35 gigawatts on the U.S. Eastern Seaboard. The reason Igneo hasn't yet invested in U.S. offshore wind is that we didn't believe equity risks were being compensated for with adequate returns. Seven or so years ago, offshore wind seemed ready to take off. With that came a lot of capital and wind development projects began to trade as if the risk level were commensurate with onshore wind. I think that's proved to have been a mistake. Offshore development is significantly more complicated, and a whole industry needs to be built out to construct and service these operations. This is high-capacity renewable-power generation that is geographically close to some of the most expensive power markets in the country. Until recently, however, it did not appear that its risks were being appropriately priced by the equity markets. We're starting to see that change now.

In terms of other areas, nuclear power makes a lot of sense from a climate perspective but is difficult politically. Events such as the Fukushima nuclear accident reverberate globally. It is an area the United States should focus on if we are going to move the needle in adding clean power generation. The likelihood is it will be with smaller modular reactors and newer technologies, but that may be a decade away.

There is a great deal of conversation about hydrogen, but there are many complications in making it usable. It's an area that continues to gather a lot of research capital because, if those complications can be solved and the costs of bringing it to market come down, it offers huge promise for decarbonization. It will take time for it to become broadly investable, and we'll need to see the end-user market for hydrogen more developed first.

Can you talk about your focus on middle-market infrastructure companies?

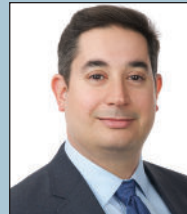
Our firm has been investing in infrastructure for 30 years. We were one of the original infrastructure investors in Australia, moved successfully into Europe and now to North America, always focusing on the middle market. We believe there is less competition and more attractive investment opportunities in the middle market. The United States has a somewhat fractionalized regulatory and governmental system – one country, but infrastructure operators in hundreds of markets. There are many localized situations that don't get the same national competition for investment and have the opportunity for robust buildout and the ability to add value.

You identify four key areas for investment for Igneo – renewables and energy transformation; transportation and logistics; digital infrastructure; and waste and water. Do you view these as discrete, or do investments sometimes cut across them?

They are all interrelated. Renewable-power generation, for example, fits within energy transition. But one of the areas where demand for renewable-energy generation is exploding is from the buildout of data centers. They are different businesses, but they share a connection, and their fates are both tied to the development of the electric grid. When we manage our portfolios, we think about broad industry trends that cut across the sectors in which we invest. We cover our four sectors, plus the seams that connect them to one another.

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John DiMarco is a New York-based managing director at Igneo Infrastructure Partners, a global infrastructure investment manager that seeks to deliver sustainable value creation by investing in unlisted infrastructure. Igneo manages \$18.8 billion for more than 200 institutional investors worldwide, as of March 31, 2024.

CORPORATE OVERVIEW

Igneo Infrastructure Partners is the direct infrastructure investment team of the First Sentier Investors Group. Igneo seeks to deliver superior risk-adjusted returns by acquiring and managing high-quality, mature, mid-market infrastructure companies operating in the renewables, digital infrastructure, waste-management, water utilities and transportation/logistics sectors across the United Kingdom, Europe, North America, Australia and New Zealand. Operating since 1994, with one of the longest-established teams in the market, Igneo creates sustainable long-term value through innovation and proactive asset management.

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