



Igneo Infrastructure Partners

The evolving energy transition

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Energy transition is a continuum, with renewable sources varying in availability, financial viability and deliverability. In a sense, the shift from fossil fuels to renewables is itself in transition.

Two important developments in this movement are (1) the substantial reduction in the levelized cost of solar power and (2) the breakthrough in storage enabled by the greater availability and commercialization of lithium-ion technology. Two of Igneo's portfolio companies – Terra-Gen and Soltage – are leaders in marrying these developments to catalyze greater efficiency and reliability in the delivery of renewable power.

Terra-Gen: At the forefront of energy transition

Terra-Gen is one of the largest integrated and independent renewable-energy-power producers in the United States. It has been at the forefront of energy transition since its formation in 2007, with a historical focus on wind and solar projects. Today, Terra-Gen owns and operates more than 30 large-scale energy projects in California, where it derives 90 percent of its revenues. The state's energy-transition efforts have involved moving aggressively away from nuclear and gas power and seeking to replace related lost capacity through wind and, especially, solar. The increased role of these renewables comes with two hurdles – intermittency and the bulk of generation taking place well to the east of the state's major population centers. One solution for both, in which Terra-Gen has become a first mover, is battery storage.

Leading the way in solar and battery storage

Already a leader in the statewide buildout of solar, Terra-Gen also is at the forefront of deployment of battery storage, where the use of lithium-ion technology has delivered a massive drop in the cost of grid storage and will spur its ongoing growth in coming years. With a reliable supply chain for lithium batteries having been created by growth in electric vehicles, Terra-Gen has transitioned its operating model to include battery storage as a third core business alongside, and intertwined with, wind and solar.

Terra-Gen owns and operates four battery-energy storage projects – enough to power 1.5 million homes for approximately four hours. Today, when new renewable

generation is contemplated, it has become the default that some storage location or pairing, in the form of lithium-ion batteries, will come with it.

Battery storage: A game changer for grid storage and cost reduction

Battery storage harnesses the capture of renewable energy for delivery throughout the day, including at times of peak demand. This applies to the natural generation periods of solar into the hours they are most needed. Terra-Gen is a leader in statewide battery deployment, commercializing about 5 gigawatts of storage and filling a growing market demand by turning renewable energy into a more dispatchable resource. While it continues to develop wind, solar and storage in California, it also is increasingly active in Texas, New York and other markets, where it can apply its business model and skills sets effectively.

Terra-Gen invests in projects that are large – usually a minimum 20 megawatts up to 1 gigawatt – and that are connected to the bulk-transmission, high-voltage grid. By contrast, Soltage, a renewable-energy producer, develops generation and storage that interconnects to the low-voltage or distributed side of the grid. It develops, finances and operates solar-plus-storage and standalone-storage projects across the United States. Effectively, Soltage has a similar business model to Terra-Gen and applies it to a different part of the market.

One of the most significant challenges in energy transition is the difficulty of interconnecting power on the grid. The United States has a patchwork of government, regulatory and regional organizations, and transmission permitting and planning is very challenging. Additionally, the sheer volume of applications and the relatively few resources authorities have in assessing them have resulted in much lengthier periods of application review and approval prior to interconnection, particularly to the bulk-transmission grid.

Soltage: Developing solar-plus-storage projects for distributed grids

In the markets where Soltage is focused nationally, the interconnection queues tend to be considerably shorter. These projects are smaller and generally can be sited in areas where the grid needs them. From a market perspective, they

generally compete for retail rates – or some discount to retail rates, but well above the wholesale power price. Because the projects tend to be smaller, they cost a bit more per megawatt to install, and success depends on the ability to execute a meaningful volume of projects effectively. This is Soltage’s competitive advantage.

We believe there is good opportunity for growth both in utility scale, development and operations, where Terra-Gen competes, and on the distributed side, where Soltage focuses. In both markets, the most important success factor is management that can execute effectively. The management teams at both companies have proven effective in developing, operating and managing solar and storage assets in their respective markets.

Impediments and promising developments in energy generation

In the evolution of energy generation, there remain impediments in many sectors, however important and promising some renewable sources may be over the long term. Onshore-wind development often faces local opposition to projects primarily benefiting people distant from their sites; offshore-wind development is complicated, and an industry needs to be built out to construct and service these operations. Nuclear power makes sense from a climate perspective, but it can be difficult politically to embrace this

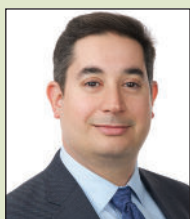


resource. There is much conversation about hydrogen, but many complications in making it usable in the near future.

As these important resources develop incrementally, solar and battery storage are in a particularly exciting moment in the here and now. There is massive deployment of solar power, surpassing wind in terms of new installations, and with the breakthrough in storage powered by lithium-ion technology, both Terra-Gen and Soltage are well positioned to leverage these developments to the benefit of users, the environment and investors.

As of Sept. 30, 2024, the companies mentioned are the renewable-energy holdings for North America.

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John DiMarco is a managing director at Igneo Infrastructure Partners and a member of the investment committee, focused on Igneo’s North American assets. DiMarco

has 22 years of relevant industry experience and focuses primarily on investments in the energy transition sector. He currently sits on the boards of Igneo assets Terra-Gen and Soltage.

Before joining the team in 2020, DiMarco held roles at CCA Capital, Terra-Gen Power, General Electric and Citigroup, where he led or advised on project finance, structured equity and M&A transactions in the power and energy sectors.

CORPORATE OVERVIEW

Igneo is an autonomous investment team in the First Sentier Investors Group. It invests in high-quality, mature, mid-market infrastructure companies in renewables, digital infrastructure, waste management, water utilities and transportation/logistics sectors in the United Kingdom, Europe, North America, Australia and New Zealand. Operating since 1994, the team works closely with portfolio companies to create long-term sustainable value through innovation, a focus on responsible investment and proactive asset management.

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