



How a solar bet in Nevada foreshadowed the AI infrastructure revolution

This is a story of how Quinbrook created Rowan Digital Infrastructure, a company built five years ago that now sits at the center of the AI data center infrastructure boom and in which Blackstone recently announced a significant minority investment.

Early in 2017, Quinbrook came across an opportunity to acquire a conceptual development-stage solar thermal project located on 5,000 acres just outside Las Vegas. The original developer had declared bankruptcy, and this Bureau of Land Management (BLM) concept project was the last to be sold before completion. It took us less than 48 hours to make our decision to acquire the development rights for \$1.25 million, based on the compelling fundamentals of the site location and confidence in our own judgment that we could jointly develop this into an investable project. Fast-forward to today: The \$1.3 billion Gemini Project is the largest solar and battery storage project in U.S. history, now fully operational and supplying enough renewable power for the entire city of Las Vegas.

Figure 1: Gemini solar + storage project



Source: Gemini Solar + Storage, a Quinbrook portfolio company, 2024

But that's not the full story. When negotiating the 25-year power offtake agreement with NV Energy, the Berkshire Hathaway-owned power utility in Nevada, we learned that more than 200 megawatts of the 690 megawatts of renewable power that the Gemini Project would supply would be sold by NV Energy to a new data center being developed in Nevada. In 2019, this was an extraordinarily large amount. Hyperscale at the time referred to a facility closer to 50 megawatts!

This super-hyperscale 200-plus-megawatt data center was being built in the high desert of Nevada, a location that was not an obvious choice, given that most existing U.S. hyperscale data center capacity was clustered in markets such as Virginia and Oregon, which offered strong fiber connectivity. At that time, hyperscalers were rapidly emerging as the world's largest corporate buyers of renewable energy (as shown in Figure 2), with their purchase power agreement offtakes supporting the development and financing of a significant proportion of new U.S. renewables

CONTRIBUTORS



David Scaysbrook
Co-Founder and
Managing Partner

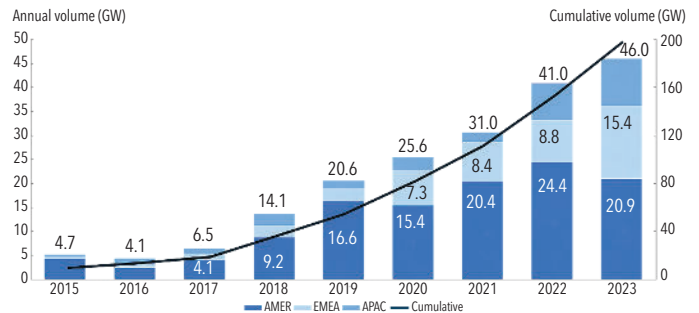


Kathryn Lin
Senior Director

capacity. As a developer, owner and operator, we saw the growing appetite for additional megawatts of capacity from organic cloud demand growth, before even taking into account the exponential growth coming from AI adoption.

Having determined Gemini's cost and structure, we knew solar and storage at scale was the most competitively priced renewable power we had ever seen, particularly for peak daytime and early evening supply. The battery storage system configured for Gemini effectively time-shifted the excess solar power captured during the sunny Nevada day and discharged it into the electric grid in the evening, long after sunset. This proved to be a true game changer for delivered power cost, allowing us to move the cheapest source of renewable power into the costliest time of day, the evening peak demand period.

Figure 2: Corporate power purchase agreement volumes



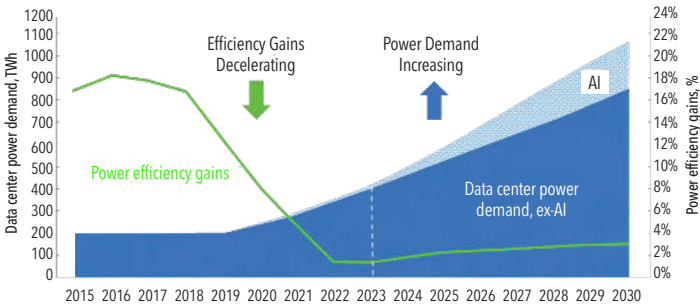
Source: BloombergNEF. Note: Chart is for off-site, publicly disclosed deals only and may be subject to change as more information is made publicly available. Capacity is in GW DC.

Observing these trends in our Gemini project led to our 'aha!' moment, the realization that the hierarchy of needs for the location of hyperscale data centers was shifting to places that could supply low-cost renewable power at scale. Typically, these were not urban locations where most data centers had historically been built. Although latency and fiber connectivity remained critical for cloud operations, power access was becoming increasingly scarce, and many operators recognized that it was easier to build the fiber network than to add megawatts to the grid. The triangulation and priority ranking of fiber, water and power was shifting decisively toward the cost and availability of large-scale renewable power first and foremost.

At that same time, COVID-19 had supercharged cloud computing demand and 5G increased data consumption, reversing long-term trends towards power efficiency and pushing demand beyond grid capacity. This was evidenced by Dominion's public

acknowledgement in summer 2022 that they would be unable to energize under-construction data centers as a result of transmission constraints. These real-world examples reinforced our initial thesis that power access and costs were becoming top priorities in site selection.

Figure 3: Data center electricity consumption (TWh) and power efficiency gains (%)



Sources: Masanet et al. (2020), Cisco, IEA, Goldman Sachs Global Investment Research

Serendipity led us to a small team of project developers who had also identified this emerging thesis. They needed an investor and sponsor to back their ambitious plans to locate sites for “powered land” that would appeal to the small cadre of hyperscale data center operators. This was 2021, and they had struggled to convince potential investors that this thesis warranted early-stage investment. Enter Quinbrook. We had already developed a high conviction around the concept and had commenced site prospecting in Australia, securing our “Supernode” site as a combined battery storage and hyperscale data center campus, which is now the largest in the Southern Hemisphere.

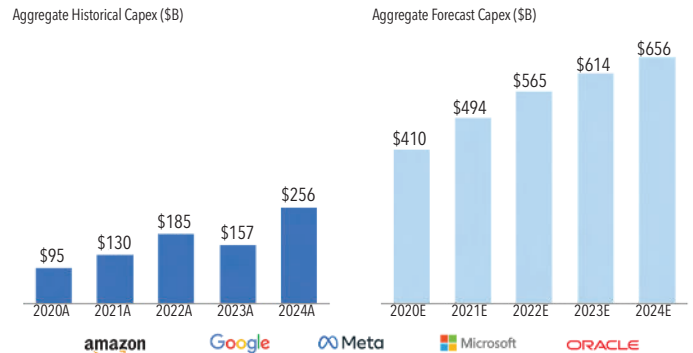
We created an investment holding company, Rowan Digital Infrastructure, to fund an expedition to locate and secure sites where that triangulation of power, water and fiber coalesced and where a hyperscale data center could be successfully developed and built. Following early success, our conviction strengthened.

Although the U.S. data center industry was already populated by hundreds of developers and operators, those existing players were not power specialists. Historically, most developers entering the sector from a real estate background had been able to rely on utilities for service and had not needed to understand grid operations in depth. We recognized these developers would not be equipped in the new world of grid constraints and capacity shortfalls, and there was a clear gap in the market for “infrastructure as

a service” for large-scale sites. This shift to data centers dedicated to a single hyperscaler was exactly what we first observed in Nevada a few years prior.

We realized that Rowan’s investment strategy needed to be completely customer-centric, dedicated to addressing the evolving site location, infrastructure and power needs of hyperscalers. The rapid advancement of generative AI – i.e., the AI or digital revolution – has made access to power at gigawatt scale the highest of priorities for the world’s largest data center operators with Rowan now uniquely positioned to deliver what they urgently need.

Figure 4: Hyperscale capex estimates (\$B)



Sources: Respective Q2 earnings reports for each of the companies (logos shown) in the graphic above

Fast-forward, just five years from the ideation of Rowan as a startup, Quinbrook has assembled a team of more than 150 people who are now delivering some of the largest hyperscale campuses ever conceived and helping hyperscale customers in achieving their stated capacity goals. Rowan was recently ranked the fifth largest hyperscale developer by capacity in the U.S.¹ and has committed more than U.S. \$7 billion with a growth pipeline of more than 5 gigawatts. Blackstone’s recent investment further underscores Rowan’s attractive fundamentals and growth potential.

The scale and velocity of the AI boom and the extraordinary pace for power demand growth have taken nearly everyone by surprise, possibly even the hyperscalers themselves. What is transpiring now has exceeded most reasonable expectations for what was once a nascent digital industry. It is rapidly rewriting the supply/demand dynamics of power markets across the world and has set a strong benchmark for Quinbrook, but the “ideas factory” at our firm is already hard at work on the next big one.

¹ Altman Solon market research

CORPORATE OVERVIEW

Quinbrook is a specialist investment manager focused exclusively on the infrastructure needed to drive the energy transition. Led and managed by a senior team of energy industry professionals, Quinbrook is an accomplished asset creator and business builder that conceives, develops, constructs and operates a diverse array of innovative infrastructure projects and growth platforms. Since its founding in 2015, Quinbrook has invested in more than 40 gigawatts of energy infrastructure assets and businesses representing a total transaction value exceeding \$27 billion spanning large-scale renewable-power generation, biofuels production, long-duration storage, and hyperscale data centers.

CORPORATE CONTACT

Matt Curran, Senior Director | MC@quinbrook.com | +1 925-354-2601 | www.quinbrook.com



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