Dallas Data Center Market

Written by Rich Miller

A Digital Realty data center in Richardson, Texas

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Introduction

This report was prepared by Data Center Frontier, in conjunction with datacenterHawk.

About Data Center Frontier

DATA CENTER Frontier

http://datacenterfrontier.com

Data Center Frontier charts the future of data centers and cloud computing. We write about what's next for the Internet, and the innovations that will take us there. The data center is our prism. We tell the story of the digital economy through the facilities that power the cloud and the people who build them. In writing about data centers and thought leaders, we explain the importance of how and where these facilities are built, how they are powered, and their impact on the Internet and the communities around them.

Data Center Frontier is edited by Rich Miller, the data center industry's most experienced journalist. For more than 15 years, Rich has profiled the key role played by data centers in the Internet revolution.

About datacenterHawk

DATACENTER HAWK
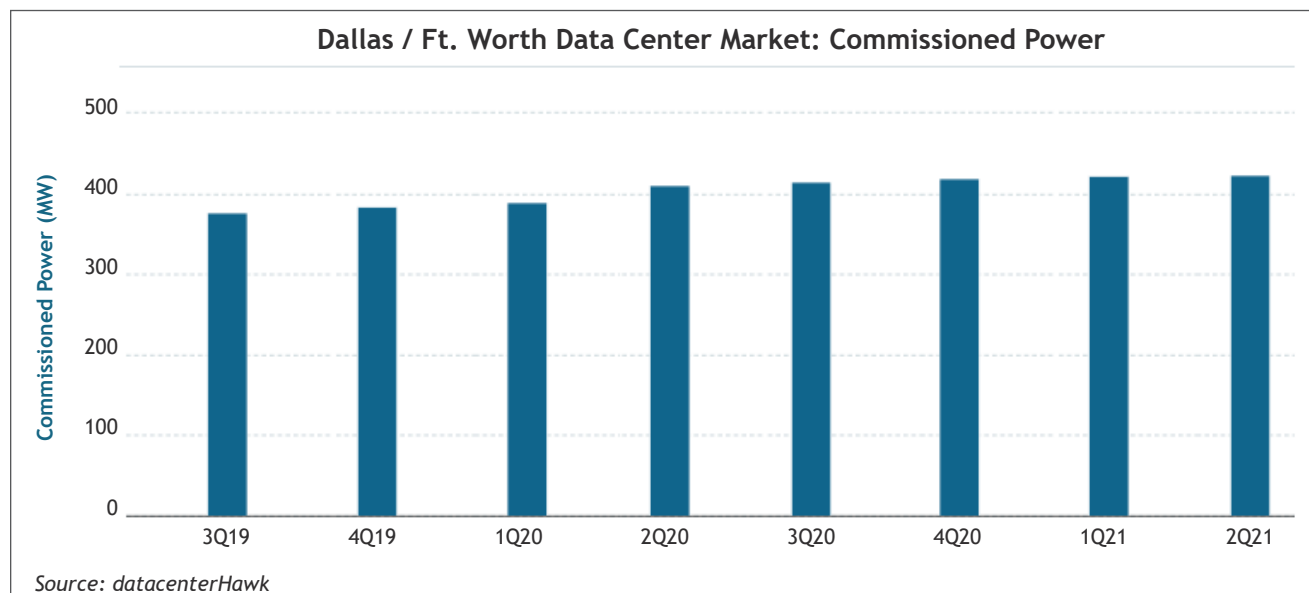
http://www.datacenterhawk.com

datacenterHawk is a convenient "one-stop-shop" for IT professionals, consultants, data center operators and investors to find data center and cloud solutions. Our subscription-based service makes the complex process of searching and analyzing colocation and cloud service providers simple and faster than ever. Our online tools help users compare potential data center solutions using real-time capacity information, financial data, and market research; then present the findings in a sharp, easy to understand report.

For non-subscribers, datacenterHawk delivers hard to find information on the top Internet exchanges, cloud computing providers, carrier hotels, and colocation facilities in North America on a per-report basis. With a credit card number, IT professionals can use datacenterHawk to reduce the time it takes to find data center market information down from hours to seconds.

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Market Overview & Analysis

Dallas / Ft. Worth Data Center Market: Commissioned Power

Source: datacenterHawk

The Dallas/Fort Worth region is one of the busiest and most competitive data center markets in the U.S., and is entering a period of stabilization as developers seek to match their construction timetables with market demand.

With hundreds of megawatts of potential capacity on the drawing board in the Dallas area, data center providers are striking a balance between their available inventory and leasing demand, which is expected to gain pace in coming months.

Dallas is a favored market for both developers and IT end users, benefiting from excellent power and fiber infrastructure, competitive economic incentives and robust competition among service providers.

The Dallas/Fort Worth data center market is home to 3.6 million square feet of commissioned data center space, which translates to 423 megawatts (MWs) of commissioned power, according to datacenterHawk data from the second quarter of 2021. This makes the region the third-largest data center market for capacity in the U.S., behind Northern Virginia and Silicon Valley.

The Dallas market is attracting interest from multiple financial companies looking for their next data center location. Several financial corporations are currently in the market for enterprise leases. These requirements are expected to cause an uptick in activity in the latter half of 2021 in the region.

One of the most noteworthy aspects of the Dallas market is the diversity of its data center ecosystem. Demand spans all sectors of the data center industry, including retail colocation, wholesale data center space, powered shell and build-to-suit projects. The market is boosted by its location in the center of the country, and sees demand for space from multiple business verticals, including hosting and cloud players as well as enterprise customers in finance and energy.

The Dallas/Fort Worth region is the third-largest data center market for capacity in the U.S., behind Northern Virginia and Silicon Valley.

One variable to watch over the next several years will be end users' attitudes about the reliability of the Texas power grid. The state of Texas operates its own power grid, isolating it from power outages from other regional interconnection markets. This has historically been a selling point for Dallas, but the reputation of the ERCOT grid has taken a hit due to the lengthy outages and price spikes during the winter storm that hit Texas in February 2021. The event creates both challenges and opportunities for the commercial data center industry (see the Business Environment section for more on this).

Background and History

The Dallas/Fort Worth data center market has grown steadily over the past fifteen years. Demand in the DFW market often originates from companies with a large presence in the area. However, many companies outside the area evaluating the DFW market find it appealing.

Dallas/Fort Worth Market Attributes

Data center users find the Dallas/Fort Worth market attractive because of the following five attributes:

1. Favorable Business Environment
   DFW is home to over 100,000 businesses, with an economy that grows by approximately 6% annually.

2. Competitive Colocation/Cloud Environment
   A large number of qualified operators deliver facilities, services, and expertise to the region's many companies who outsource their information technology (IT) infrastructure.

3. Reasonable Power Cost
   Compared to other primary data center markets, electricity in the DFW area is relatively inexpensive.

4. Robust Infrastructure
   The region's electrical and telecommunications infrastructure is both dense and diverse.

5. Tax Abatement Incentives
   The State of Texas passed legislation in 2013 to grant tax breaks for large colocation and enterprise users.

The economy in Dallas/Fort Worth has drawn large corporate relocations to the market in recent years. Most companies go to Texas due to the state's central location, affordable real estate prices, and good tax incentives. According to Moody's, the cost of doing business in Dallas is 4% lower than the national average, and less than half the cost of doing business in New York or San Francisco.

The DFW area in particular has a diversified labor force, with strong growth recently from the technology and services industries. Between February 2019 and February 2020, the DFW market created jobs at a 2.6% rate which is better than the rest of the state (3.0%) and the United States overall (1.5%), as per the Bureau of Labor Statistics. In addition, the DFW market's unemployment rate is currently 3.2% and has continually declined since 2009.

The early growth of DFW's data center market was focused in downtown Dallas. Because the central business district is rich in telecommunication infrastructure, several large office buildings were retrofit for data center use, most prominently the Infomart Dallas, 2323 Bryan Street and the former Federal Reserve Building. These buildings typically attract smaller colocation customers, along with telecommunications companies.

As the colocation market grew significantly in 2009 and 2010, these companies expanded beyond downtown. An obvious expansion route was the northern suburbs of Dallas, which boomed during the 1990s when the "Telecom Corridor" attracted dozens of leading companies in the telecom, software and semiconductor sectors. This area was hit hard during the dot-bust of 2001 to 2003, but has seen a new round of growth as Dallas has emerged as a hotbed for hosting and colocation. Cities like Richardson, Plano, Carrollton, Allen and Garland benefited from the growth by offering sites and buildings with expansion opportunities. In addition, most colocation providers in the DFW market are choosing to construct new facilities instead of retrofitting existing buildings worthy of conversion.

Market Trends in Supply and Demand

One of the primary factors driving data center activity in Dallas is the healthy economy and the growing list of large businesses, which generates demand for digital infrastructure.

Data center requirements in the DFW market come from companies both in and out of the market. The area is home to the corporate headquarters of 18 Fortune 500 companies including Exxon Mobil, JC Penney, AT&T, Texas Instruments, and others. State Farm's data center in Richardson, just south of their 2.5 million SF regional office campus, is a good example.

In addition, a portion of the data center activity has come from companies tasked with upgrading aged data center infrastructure within an owned facility. Instead of reinvesting in the existing operation, many of those companies have chosen to house their infrastructure with colocation providers, fueling development in the area. This trend is pervasive across all major markets.

Companies from outside the Dallas market view the area as strategic for multiple reasons, including its central location. For enterprises that have data centers in primary coastal markets such as Northern California or New York City, the DFW market is a logical location to be in the center of the United States. In addition, the steady colocation supply delivered over the past few years puts DFW in a position to compete for large, national projects. Larger colocation providers completed record transaction sizes in DFW over the past few years, with some being as large as 10 MW of critical load.

The DFW market has been the beneficiary from the growth of cloud computing as well. Cloud providers, including IBM Softlayer and Rackspace have placed their infrastructure with larger colocation providers. For instance, at Digital Realty's 68-acre Richardson campus, a major portion of the 86 MW at the campus is accounted for by cloud providers. Additionally, hyperscale cloud companies are actively developing their own data centers and leasing capacity throughout the region. It's anticipated this trend will continue, as data center users further embrace cloud computing and cloud providers rely on larger colocation providers for infrastructure support.

From a demand perspective, the DFW market averages approximately 30 MWs of net new growth per year. This growth traditionally comes from financial, technology, managed services/cloud, telecommunications, and the healthcare industry. To handle the anticipated demand, several providers have announced expansions and/or entrances into DFW.

It's anticipated that pricing will remain aggressive in the DFW market given the amount of supply and new companies that are entering the market.

Development in the Dallas market is driven by major wholesale data center providers, who have been creating multi-building campuses to support long-term growth. Colocation and hyperscale players are also eyeing future capacity, adding up to massive planned capacity of 811 megawatts (5.5 million square feet) in Dallas/Fort Worth.

Nearly all of that is for future runway. There were just 11.25 megawatts of data center capacity under construction in 2Q 2021, representing 60,000 square feet. That's an increase from just 2 MWs in 1Q 2021 and 4 MWs in 4Q 2020. The COVID-19 pandemic has been a factor in the construction slowdown, but some other markets (most notably Northern Virginia) saw building booms as the pandemic prompted major shifts to online delivery models for work, learning and entertainment.

The primary factor in the subdued pace of new construction is the inventory outlook in Dallas. There was 51 MWs of commissioned capacity available in 2Q 2021, while the leasing over the previous 12 months absorbed about 32 MWs, with 3.3 MWs coming in the second quarter, according to datacenterHawk. The vacancy rate was 11.96% in 2Q.

This is remarkably similar to the supply picture at the beginning of 2018, when the Dallas market had 50 MWs of available capacity, and 11 MWs under construction – only with a higher vacancy rate of 15%. This history is important, reflecting a disciplined approach to expansion by providers in Dallas/Fort Worth, where most of the leading players have significant experience operating in the region.

> **AVAILABLE POWER**

> **UNDER CONSTRUCTION POWER**

> **PLANNED POWER**

Source: datacenterHawk
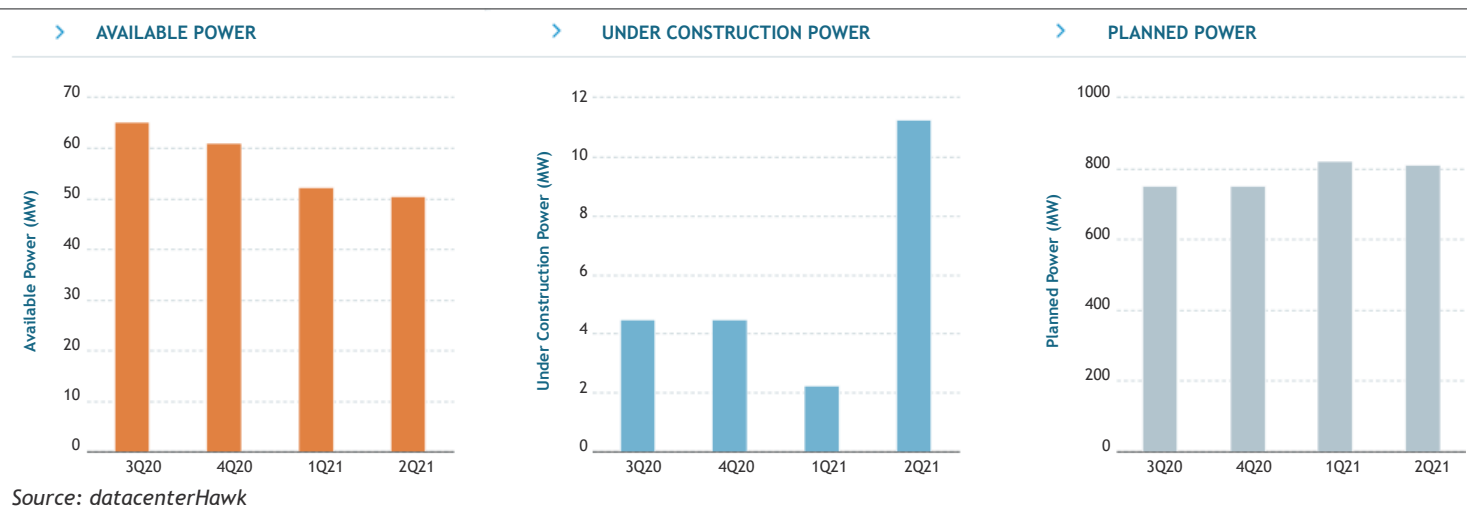
This ample supply of available space, along with the number of providers in the market, creates a tenant-friendly "buyer's market." But hyperscale operators could quickly change that dynamic. The large cloud and SaaS (software-as-a-service) players gobble up data center space in large chunks.

The key question is whether hyperscalers will build or buy. Some cloud platforms and SaaS providers have leased wholesale space in Dallas. But the largest deployments have been company-built campuses for Facebook in Fort Worth and Google in Midlothian, 25 miles southwest of Dallas.

> Digital Realty has also sourced solar power from Pattern Energy's 82.5 MW Phoenix Solar Project in Fannion County Texas to support its data center portfolio in Greater Dallas.

The region's data center capacity is spread across several sub-markets, including major carrier hotels in downtown Dallas, a nexus of wholesale data centers in the "Telecom Corridor" in Richardson, Plano, Garland and Allen. These northern suburbs are emerging as key to the region's data center supply, offering more land for the multi-building campuses that developers covet.

Fort Worth is about 30 miles West of Downtown Dallas, and has emerged as a sub-market to watch in the wake of Facebook's decision to build a data center campus in the Alliance Gateway business park.

Here's a look at some of the recent developments shaping the data center market in Dallas/ Fort Worth area.

▶ **Digital Realty** is upgrading its flagship property in Downtown Dallas, 2323 Bryan Street, to add more colocation capacity. The company has also sourced solar power from Pattern Energy's 82.5 MW Phoenix Solar Project in Fannion County Texas to support its data center portfolio in Greater Dallas.

▶ The Dallas **Infomart** began a new chapter in 2020 with the opening of the Equinix DA11 data center, which expands the iconic carrier hotel property into a multi-building cloud campus. Equinix bought the Infomart in 2018 for $800 million, and invested an additional $142 million to create the first phase of DA11, a four-story stand-alone

structure constructed next door to the main Infomart building.

▶ **QTS** is continuing data center development at its campus in the Dallas market. The provider recently commenced construction on the first phase of their shell at 6351 Longhorn Drive and is expected to deliver power to the building before the end of 2021. Additionally, QTS purchased renewable energy credits from a Texas provider equal to the projected power consumption of their Fort Worth data center.

▶ In July, **DataBank** said it was expanding its DFW3 data center in Plano, adding 12,000 square feet of raised floor space and 1.5 MWs of power. It's the third data hall for the building, which can accommodate six.

▶ In August, managed hosting provider **VPLS** acquired a data center property in Dallas, featuring 18.8 acres of land and a 75,000 square foot existing data center that is 100% leased to a technology company. VPLS hopes to develop additional data center space at the property, which currently supports 2.5 MWs but is expandable to 16 MWs.

▶ **Evoque Data Center Solutions** is renewing its focus on connectivity-driven services across their data center portfolio, including the Dallas market. In 2Q 2021, the operator added Unite Private Networks (UPN) to their network service provider portfolio, offering various connectivity services at Evoque's Allen and Webb Chapel data centers.

▶ **Facebook** has begun the final phase of development at its five-building Fort Worth campus, adding a cold storage data center engineered for long-term storage of customer photos and videos. Construction is expected to be completed in 2022, brining the campus to 2.6 million square feet, representing more than $1.5 billion in investment.

Dallas as the "Big City Edge"

Although Dallas is well known as a connectivity center and "core" network hub, it is also a hotbed for new infrastructure for edge computing, a model which shifts data processing and services closer to the end user. The trend is driven by the increased use of consumer mobile devices, especially consumption of video and virtual reality content and the growth of sensors as part of the Internet of Things.

Several leading players in the edge market have deployments in Dallas, showcasing innovation and laying the groundwork for future growth. Here are some examples:

▶ Amazon Web Services has announced plans to bring a "local zone" to Dallas in 2021. With Local Zones, AWS is creating a more distributed infrastructure to support edge computing and low-latency applications. AWS typically works with local colocation providers to provision Local Zones of about 2 MW of capacity. Dallas is also one of the deployment sites for Verizon 5G Edge, a mobile edge computing (MEC) platform powered by AWS Wavelength, a software product that embeds AWS compute and storage services in the telecom network, enabling developers to use 5G connections to create low-latency apps for machine learning, virtual reality and Smart Cities.

▶ Edge computing specialist Vapor IO is operating several of its data center modules in Dallas, which is one of the five early hubs for its Kinetic Edge network, which uses both wired and wireless connections to create a reliable, low-latency network of colocation sites. Vapor IO is partnering with Digital Realty to offer an "edge-to-core" deployment model, and working with IT Renew to offer recycled IT hardware from hyperscale facilities.

▶ Edge computing startup EDJX is deploying capacity in a Cyxtera data center in Dallas. integrating a software-defined power solution from Virtual Power Systems (VPS) that brings new efficiencies to power management. EDJX offers several form factors for placing distributed edge servers in offices and stores, ranging from micro servers the size of a credit card to full racks of Open Compute hardware. Like Vapor, EDJX is offering recycled hardware from ITRenew.

While we are in the early days of edge computing, successful edge ecosystems will likely mean additional traffic and business for nearby data centers, which can offload data for additional analytics and modeling work. The significant population and mix of enterprise IT and service providers in Dallas/Fort Worth positions the region as a potential growth hub for edge applications.

Business Environment

Power Overview

The discussion of power infrastructure and service in Dallas and other Texas markets is more relevant than ever in the wake of the February 2021 winter storm, in which frigid temperatures led to lengthy utility outages, coupled with price spikes when power was available. Some history and background on the grid in Dallas / Fort Worth are useful in discussing the storm, its impact and its legacy.

Texas is unique in that it is decoupled from the interconnected power grids serving the eastern and western United States. Among the contiguous 48 states, Texas is the only one that has a standalone electric grid entirely within the state. This means that with few exceptions, Texas produces the electricity consumed within its borders and is not subject to the Federal Power Act, a Depression-era law where the Federal Power Commission oversees all interstate electricity sales. The Electric Reliability Council of Texas (ERCOT), a nonprofit corporation governed by a board of directors and subject to oversight by the Public Utility Commission of Texas and the Texas Legislature, is responsible for managing 90% of the electricity in the state of Texas.

The State of Texas introduced competitive electric markets in 2002, creating a system where electric generation and supply is a retail business competing for customers while the transmission — often the incumbent owners of power lines — remains heavily regulated. The confluence of a competitive market, the abundance of in-state power sources (notably natural gas), and a standalone power grid have driven power costs in the Dallas/Fort Worth market down over the past few years. This low-cost power makes DFW more competitive, attracting both regional and national transactions.

For many years, Texas data center operators have argued that the independent ERCOT grid was an advantage, isolating Dallas and other large Texas markets from problems on other grids. The February winter storm put a dent in that argument, exposing the lack of winterization in many generation and transmission assets as a vulnerability.

In June, Texas Gov. Greg Abbott signed a package of reforms that will require ERCOT to weatherize energy facilities to handle extreme weather, creating substantial financial penalties for operators that fail to protect their equipment. The prompt action should prevent a repeat of some of the reliability and pricing issues seen in February. This may reassure companies weighing Dallas against non-Texas markets in data center site selection.

Texas has a growing supply of wind energy, which accounts for 20 percent of the electricity generated in Texas, up from 10 percent in 2015. During the early hours of the February winter event, some public officials and commentators pointed to the state's reliance on wind energy as a culprit in the outages. Subsequent inquiries focused on the lack of weatherization as the core issue, exacerbated by the gas plants going offline and Texas grid's isolation making it hard to source electricity beyond its borders.

Renewables are important, as the availability of green energy options is crucial to the DFW region's aspirations to emerge as a player in deals with hyperscale providers, who require renewable energy to support their data centers and ESG commitments. Due to its intermittent nature, wind energy can be challenging to integrate into power grids. Texas has some advantages on this front, as it has an abundant supply of natural gas plants, which can adjust their power output more quickly than coal-fired plants.

The February storm may bring new business for the many commercial data centers who remained online throughout the event, as the lengthy utility outages knocked many on-premises data centers offline, reinforcing the value of using a third-party provider facility engineered for continuous operation through regional disasters.

Some Dallas providers cultivated good will with their customer support during the winter storm, most notably with Digital Realty, which provided diesel delivery to support a customer's on-premises operations from running out of fuel.

Disaster Risk

Beyond the unusual winter storm, new entrants to the Dallas/Fort Worth market can sometimes worry about tornado risk. In addition, small earthquakes that have rattled the market recently have raised safety concerns. Data center providers in DFW know

to address these concerns by designing facilities that meet building codes and withstand seasonal bouts of high-powered winds.

Tax Incentives Overview

Texas legislators passed a bill in 2013 to eliminate taxes paid on qualifying hardware and software purchases for data centers. While the exemption does not cover local sales taxes on purchases, data center owners/operators/occupants are 100% exempt from the 6.25% state sales and use taxes for up to fifteen years on electricity consumption and equipment purchases. This exemption includes purchases of servers, generators, storage devices, software, and other systems necessary for data center operations. To qualify, the data center must:

▶ Total 100,000 SF of gross building area

▶ Achieve a capital investment of $200+ million over a five-year period

▶ Create at least twenty permanent jobs for locals

▶ Pay wages equivalent to 120% of the national average

Connectivity Overview

Multiple carriers' fiber networks blanket the DFW Metroplex connected to a robust last-mile infrastructure. Logix (a regional fiber provider based in Texas), CenturyLink, Cogent, EarthLink, FiberLight (another regional player based in Atlanta, GA), Level 3, Sprint, Verizon, Windstream, and XO all serve the Metroplex. Long-haul fiber from multiple carriers connects the urban centers of both Ft. Worth and Dallas. Telecom giant AT&T relocated their world headquarters to downtown Dallas in 2008 and the company's long-haul fiber is prevalent in DFW. AT&T fiber runs through the Alliance Airport area (home to the new Facebook data center) south to downtown Ft. Worth, then west to downtown Dallas, and winds up into the northern suburbs of Carrollton and Lewisville — an area with several large colocation data centers. To the east in Dallas' northern suburbs of Richardson and Plano, enterprise-grade fiber infrastructure attracted the majority of DFW's new data center construction in the past five years.

Service Providers in Dallas/Fort Worth

Digital Realty

Digital Realty (DLR) is a real estate investment trust (REIT) and is the largest global provider of multi-tenant data center capacity, according to 451 Research. Digital Realty supports the world's leading enterprises and service providers by delivering the full spectrum of data center, colocation, and interconnection solutions. Digital Realty's global data center footprint gives customers access to the connected communities that matter to them with 291 facilities in 47 metros across 24 countries on six continents.

Digital Realty's presence in this state-of-the-art interconnection and colocation hub helps global enterprises and leading communications providers overcome the barriers created by data gravity. Digital Realty's research projects a 164% CAGR in data gravity through 2024 in the Dallas market.

Anchored by an on-site private substation, DLR's Data Center Park-Dallas 68-acre facility serves financial, technology, cloud, and managed hosting companies.

Digital Realty is the largest data center provider in the Dallas/Fort Worth market, according to datacenterHawk, which tracks data center infrastructure across the country and provides the market data in this report. While its presence covers multiple locations, DLR's Data Center Park-Dallas facility at 850 East Collins in Richardson, TX is the biggest. Anchored by an on-site private substation, this 68-acre campus serves financial, technology, cloud, and managed hosting companies. The company has delivered and leased all of 907 Security Row, a 138,000 SF, seven-pod data center. They will increase the density of each pod up to 1.6 MW. In 1Q 2016, Digital announced the development of 1210 Integrity Way, a 455,000 SF, three-story data center located directly next to 907 Security Way. The building is master-planned for 36 pods, making it the largest building Digital Realty has developed in the Dallas market.

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Digital Realty's ownership of the Convergence campus in Lewisville, TX offers users an additional land site development opportunity. In 2012, DLR purchased the campus for $123 million and operated it ever since. CyrusOne and several other enterprise users operate data centers at Convergence.

Digital Realty's acquisition of Telx netted a data center at 8435 Stemmons Freeway. Located on the second floor, Telx operates a 20,000 SF data center in a 230,700 SF eleven-story building. The N+1 infrastructure was built to support approximately 1,040 kW of UPS capacity. Digital Realty also took over a Telx location at 2323 Bryan Street in downtown Dallas, a building they own and which houses an Internet Exchange.

In 4Q 2016, they announced the purchase of 48-acres of land in Garland. The $17 million purchase will ultimately support up to 960,000 SF of new data center space. When the Richardson campus is complete, Digital intends to break ground on the new campus. Additional land adjacent to their Garland site was purchased in 4Q 2017.

In 4Q 2020, the company began development on 908 Quality Way, an ancillary building on their Richardson campus, with plans to demolish the existing structure and construct a multi-story 100,000 SF data center.

Aligned

Aligned is an infrastructure technology company that offers colocation and build-to-scale solutions to cloud, enterprise, and managed service providers. The company strives to utilize intelligent infrastructure to deliver data centers like a utility — accessible and consumable as needed. By reducing the energy, water and space needed to operate, Aligned's data center solutions are supplemented by patented cooling technology to improve reliability and data security. The company currently operates data centers in five US metro markets — Chicago, Dallas, Phoenix, Northern Virginia, and Salt Lake City — with their Plano facility claiming the title of the first Pay-per-Use data center in the industry. Aligned Energy is headquartered in Plano, Texas.

The company is building a 30 MW data center with a total of 300,000 SF at 2800 Summit Avenue in Plano, a suburb north of Dallas. The powered shell facility was originally retrofit by a private developer, and purchased by Aligned in 2014. After completing the initial construction in November of 2015, the company delivered the first two 12,000 SF data halls and 5 MW of critical load. Their energy-efficient infrastructure uses 85% less water than traditional water-cooled systems, allowing them to guarantee a 1.15 rating for their Power Usage Effectiveness (PUE).

Ascent Data Centers

Ascent is a data center colocation provider located in St. Louis, MO. Founded in 1998, the company has since grown to the Atlanta, Chicago, Dallas, and Toronto market as well. Ascent's client list includes several Fortune 500 companies, and the provider continues to evaluate opportunities for growth throughout the country. The company's Dynamic Data Center Suite offering offers customers purpose built, dedicated data center infrastructure. Ascent serves companies in the following markets: Technology, Financial, Healthcare, Telecommunications, Pharmaceutical, and others.

In 2Q 2016, Ascent purchased a 45,000 SF data center in Plano previously occupied by an enterprise user. The hardened facility is currently equipped with 2.7 MW of commissioned power and can be expanded to 7.2 MW. Ascent intends to invest $90 million in the project.

Carrier-1

Carrier-1 is a colocation company headquartered in Dallas, TX. The company's executive team comes with extensive experience in the data center market, working with companies like CoreXchange and The Planet. They currently have a presence in the Dallas market and are focused on providing superior colocation services.

As of 1Q 2021, Carrier-1 has delivered nearly 35,000 SF data center space with over 3.7 MW of critical power available. The first two 1 MW, 10,000 SF data hall have been fully leased, with a third 1.5 MW, 14,000 SF hall currently available. The facility has the capacity to handle an additional 25,000 SF of data center space and 6.5 MW of critical power. The UPS infrastructure has been constructed to an N+1 standard while the generators are N+2. In addition, the facility provides over 30,000 of office and support space.

> Cologix's growth strategy is based on acquiring data centers in strategic, densely-connected markets.

Cologix

Formed in 2010, Cologix is a colocation provider with a footprint in multiple U.S. and Canadian markets. The Denver-based firm delivers highly-scalable colocation, network, and interconnection services. Cologix's growth strategy is based on acquiring data centers in strategic, densely-connected markets. Cologix hosts six Internet Exchanges in Minneapolis (MICE), Montreal (QIX), Toronto (TORIX), Vancouver (VANIX), Columbus (Ohio-IX), and Dallas (DE-CIX) to enable peering opportunities for their carrier, cloud, and managed services customer base. With the acquisition of Net Access in 2015, COLO-D in Q4 2018, and Metro Optic in Q1 2019, Cologix substantially increased the company's geographical footprint and pool of resources. They currently operate 38 data centers in 11 markets.

Cologix Dallas facility is housed at the Infomart Dallas, the city's largest carrier hotel. The company operates three data halls inside the building, combining for a total of 50,000 SF and 4.8 MW of commissioned capacity.

Compass Data Centers

Compass Data Centers is headquartered in Dallas, TX and delivers data centers for customers throughout the United States. Their product, which is typically constructed as 10,000 SF and 1200 kW, can be built anywhere, delivered in six months, and is Tier 3 Designed and Certified by the Uptime Institute, ensuring customers that the data center purchased is the data center delivered. In addition, the product is easily scalable in equal amounts over time.

Compass has two primary sites in Dallas. Their first is a facility in Allen built as a partnership with TierPoint. The first 16,000 SF of commissioned space came online in 2Q 2017, with 74,000 SF of additional space planned. The site also contains two 450 SF micro data center pods installed in 3Q 2018. Compass intends to showcase the pods as models for prospective clients.

Their second site is 155-acre parcel 20 miles south of Dallas in Red Oak, acquired in 3Q 2019. Compass plans to construct a multi-building data center campus with up to 260 MW of commissioned power.

CyrusOne

CyrusOne is a global colocation company headquartered in Dallas, TX. They have more than 50 data center facilities throughout the United States, South America, Europe, and Asia and are continually growing. In efforts to drive down operational costs for customers, CyrusOne delivers their "Massively Modular" data center concept, which brings power/space to the market quickly in large facilities. In addition, the company offers solutions with various levels of redundancy (N/N+1/2N). The company's strong customer relationships with Fortune 1000 data center users made them an attractive acquisition for Cincinnati Bell in 2010 for $525 million. CyrusOne went public in 1Q 2013, steadily growing through both construction of new data center facilities in top markets and strategic acquisitions of rivals, including Cervalis in 2015 and Zenium in 2017.

After going public, CyrusOne relocated its corporate headquarters to Dallas/Fort Worth. In 2011, they purchased a former warehouse space at 1649 West Frankford Road in the Dallas suburb of Carrollton, and have since been developing data center infrastructure within the massive building.

CyruOne's strong customer relationships with Fortune 1000 data center users made them an attractive acquisition for Cincinnati Bell in 2010 for $525 million.

CyrusOne's data halls in 1649 West Frankford are approximately 55,000 SF of data center space with 4.5 MW to 9.0 MW of critical IT load available. The operator is currently pursuing opportunities to fill the capacity in the final data hall.

The company also operates a campus in the North Dallas suburb of Allen. CyrusOne acquired the site in 2Q 2017 and opened their first facility in 3Q 2018 with 4.5 MW of commissioned power. The first building will total 27 MW at full delivery, with the campus to ultimately accommodate 100 MW.

In 1Q 2021, CyrusOne executed a power purchase agreement for 67 MW of solar energy, making their Dallas operations carbon-neutral.

Cyxtera Technologies

Cyxtera has 61 data centers spanning 1.9 million square feet in 29 markets around the world. The company was recently acquired and taken public by Starboard Value Acquisition Corp. (SVAC) in a deal that values Cyxtera at $3.4 billion. The company was created when private equity firms BC Partners and Medina Capital acquired CenturyLink's colocation portfolio in 2017 and combined the assets to form Cyxtera Technologies. The company offers highly secure solutions to meet strict requirements such as those expected in financial and government entities.

Originally built for Exodus Communications, Cyxtera's Dallas/Fort Worth data center at 14901 FAA Boulevard, a robust building owned by Digital Realty facility minutes away from DFW International Airport. The 265,000 SF building houses two separate Cyxtera data centers (DL1 and DL2). Each data center has redundant power feeds from TXU Energy, with approximately 24 MW total utility power delivering a minimum power density of 150 W/SF.

DataBank

DataBank is a provider of enterprise-class data center services, cloud solutions, interconnectivity, and managed services with a presence in various markets across the Central United States. DataBank was acquired by Digital Bridge Holdings in 2016, and has continually grown since. Due to a number of acquisitions since 2017 — namely that of C7 Data Centers, two facilities previously owned by 365 Data Centers, managed cloud firm Edge Hosting, and Zayo's data center assets — DataBank increased its geographical footprint to 65 data centers across 29 markets. DataBank is headquartered in the former Federal Reserve Bank Building in downtown Dallas.

Due to a number of acquisitions since 2017, DataBank increased its geographical footprint to 65 data centers across 29 markets.

DataBank has seven facilities in the Dallas/Fort Worth market. One data center is located in downtown Dallas in the former Federal Reserve building at 400 South Akard. They have since expanded and now have 10,000 SF of data center space and 1 MW of critical power available.

The company's second DFW data center is a 50,000 SF facility in Richardson with 40,000 SF of data center space. The Richardson data center's infrastructure is 2N through the UPS, generators, and cooling units. Each pod delivers 1.5 MW in critical IT load. Both the downtown Dallas and Richardson facilities are owned by Digital Realty.

In 2Q 2017, DataBank announced their purchase of a third data center in DFW, which was under construction by Stream Data Centers in the Legacy area of Plano. The 145,000 SF facility features 60,000 SF of white space, with the ability to double capacity in the future. The first 1.5 MW of commissioned power was delivered in 1Q 2018. In July, DataBank said it was expanding DFW3 to add a third data hall of 12,000 square feet of raised floor space and 1.5 MWs of power.

DataBank's remaining four Dallas data centers were acquired as part of their 4Q 2020 purchase of Zayo's data center assets. These four data centers include a hall at the 1950 N Stemmons carrier hotel and a former Stream Data Centers facility at 1100 Empire Central Place. The four data centers offer approximately 7 MW of commissioned power combined.

Equinix

Equinix is a global data center company providing colocation, interconnection, and connectivity services to users. The California-based company has more than 220 data centers in 26+ countries throughout the world, and gives access to over 450+ cloud providers in their portfolio. Equinix operates its data centers under the International Business Exchange (IBX) product name. The IBX system enables Equinix's partners and users to leverage a scalable, globally-connected technology platform for application, managed service, and information delivery.

The majority of Equinix's DFW footprint lies within the Infomart building in downtown Dallas, which the company acquired in 1Q 2018 for $800 million. Equinix formerly leased four data halls in the 1.6 million SF carrier hotel. The Dallas Equinix facility is a major peering network exchange for the southern United States, with 100 network providers offering direct connectivity to cloud and content services.

The IBX system enables Equinix's partners and users to leverage a scalable, globally-connected technology platform for application, managed service, and information delivery.

In 3Q 2015, Equinix announced an expansion in Plano, TX with T5 Data Centers. A lead tenant pushed Equinix to expand into the large facility and they will be the only data center colocation provider in the facility. Both Thomson Reuters and T-Mobile also have a large presence at the data center. In 1Q 2016, Equinix delivered DA7, a 38,000 SF of data center space and 4.0 MW of critical power.

In 1Q 2019, Equinix began construction on its new building adjacent to the Infomart. The first capacity in the four-story data center came online in 2Q 2020 with 9.7 MW of commissioned power, and the ability to double capacity in the future.

Evoque Data Center

Evoque Data Center Solutions is a colocation provider that operates nearly 30 data center facilities worldwide. A portfolio company of Brookfield Infrastructure, the company was launched in January 2019 upon the Brookfield acquisition of AT&T's data center assets. The subsequent rebranding to Evoque included the transfer of colocation operations, fixed assets, leases, and ownership of 31 facilities (18 located in North America) to the new company. Evoque Data Centers is headquartered in Dallas, Texas.

Although formerly owned by AT&T, both data centers in DFW are carrier-neutral facilities — a requirement to enable the redundancy prized by AT&T's enterprise customers. Their data center in Allen, TX (a suburb near the fiber-rich area north of Dallas known as the "Telecom Corridor") is the larger of the two. Evoque's Dallas Area II data center is located in an office park owned by Digital Realty about twenty minutes away from their corporate HQ.

Founded in 2000, Flexential concentrates on managed cloud services such as infrastructure as a service (IaaS) and disaster recovery with compliance regimes.

Flexential

Flexential provides cloud computing, data center, and other scalable technology infrastructure solutions and managed services, primarily for mid-market businesses. The company is headquartered in Charlotte, NC and has a growing data center footprint in the southeastern corner of the United States. Founded in 2000, Flexential concentrates on managed cloud services such as infrastructure as a service (IaaS) and disaster recovery with compliance regimes that include SOC 1 Type 2, SOC 2 Type 2, SOC 3 Type 2, PCI, and HIPAA. In 3Q 2017, Peak 10 completed their acquisition of ViaWest, giving the company a portfolio spanning 38 data centers across 19 different markets. In 1Q 2018, the combined companies rebranded as Flexential.

Flexential has a presence in downtown Dallas, Richardson, and Plano, TX. Their downtown facility, located at the Infomart Dallas, is 100% leased.

Flexential's Richardson data center is located at 3010 Waterview, and is also fully leased. The building, in which Flexential leases approximately 85,000 SF, was purchased in 1Q 2016 by GI Partners, a private equity firm out of San Francisco. There are several other tenants in the facility. The company delivered its newest data center in Plano in 4Q 2016. The data center will operate 148,000 SF of high density raised floor at full build, with a projected PUE of 1.3.

In 4Q 2020, Flexential initiated an expansion at their Plano data center, which will add 2.25 MW of commissioned power.

H5 COLO

H5 COLO is a Dallas-based provider of fault-tolerant IT infrastructure for a wide variety of industries and clients. The company operates a secure, carrier-neutral, and purpose-built SSAE 16 Type 2-compliant facility with an onsite network operations center and in-house engineering teams.

H5 COLO's data center on the second floor (four story building) of 12712 Park Central in Dallas is blocks from the "High Five" freeway interchange, a prime location to reach both downtown Dallas and growing data center clusters in the city's northern suburbs.

INAP

INAP is a global colocation company headquartered in Atlanta, with a presence in 20 cities offering colocation, cloud, and managed services. The company's focus on the technology, healthcare, financial, online education, and gaming industries has propelled their growth over the last few years. In addition, INAP's focus on low latency/high availability network services provide vertically-integrated services to their clients.

INAP's Dallas/Fort Worth facility is located in Plano, TX. INAP converted the building, which was previously a call center, into a 55,000 SF data center at full build. With 3 MW of critical IT load, and Energy Star certification, customers looking for colocation and cloud services continue to view INAP as a logical partner option.

In 1Q 2018, INAP executed a lease with an unnamed social media networking group. The group will lease capacity at INAP's Dallas and Northern California data centers. In 2Q 2018, INAP completed a 2 MW expansion at their 1221 Coit data center, driven by expansion demand from existing customers.

Lincoln Rackhouse

Lincoln Property Company has focused on managing residential and commercial properties for over 40 years. Upon acquisition of Rackhouse Group in 2010, the newly-created Lincoln Rackhouse division allowed to diversify into data center development and construction services for enterprise clients. Lincoln Rackhouse is headquartered in Dallas, Texas.

In 2Q 2018, Lincoln Rackhouse purchased three data centers from Bank of America, giving them a presence in Dallas, Kansas City, and Phoenix. The Dallas data center is the largest of the three assets at over 500,000 SF and sits across the street from INAP's Plano data center. Lincoln Rackhouse will lease back a portion of the data center capacity to Bank of America. In 4Q 2018, Lincoln Rackhouse announced CBRE would manage the three data centers purchased.

NTT Global Data Centers Americas

Founded in 1999, NTT Global Data Centers Americas is a division of the telecommunications company NTT (Nippon Telegraph and Telephone Corporation). NTT Global focuses on providing an array of information and communications technology (ICT) solutions in 90 countries and delivers over 500,000 square meters of data center space to 20 regions worldwide. In 2019, the company announced a rebrand of all data center subsidiaries—RagingWire, e-Shelter, Gyron Internet, and NetMagic—under NTT's umbrella, renaming the newly-formed company NTT Global Data Centers headquartered in London, England.

After purchasing a 42-acres site in Garland in August of 2015, NTT began development to deliver their first of five buildings, each capable of containing 15 MW of critical load. Power is supplied by Garland's municipal power company at the city's cost (approximately $.04 to $.05 per kW hour).

In 2Q 2017, NTT delivered the first data halls at their TX1 facility. In 3Q 2017, NTT executed a 2 MW lease in the first hall at their TX1 facility.

QTS Data Centers

QTS Realty Trust (QTS) operates more than 25 data center properties in the US and Europe. On Aug. 31, QTS was acquired by Blackstone Infrastructure in a $10 billion transaction. The company traditionally finds large, robust facilities and transforms them into LEED-certified data centers. QTS' client list

QTS Data Centers bought a 40-acre land site with a 700,000 SF semiconductor manufacturing plant in 2013 and is retrofitting it in phases for data center use.

includes mostly Fortune 1000 customers, to whom they provide hybrid, wholesale, and hyperscale data center services, along with a variety of managed services through their Software-Defined Data Center infrastructure.

QTS operates a large data center at 6431 Longhorn Drive in Irving, a suburb halfway between Ft. Worth and Dallas. The company bought a 40-acre land site with a 700,000 SF semiconductor manufacturing plant in 2013 and is retrofitting it in phases for data center use. QTS delivered the first two data halls of Phase 1 soon after, and one of which was fully leased by a technology company before delivery. The facility receives power from two separate 138 kV utility feeds and has an on-site substation. As a result of a power purchase agreement with CitiBank in 2Q 2018, the Irving data center will be powered by renewable wind energy for 10 years. QTS is actively filling the remaining space at the facility, and seeking opportunities to fill their adjacent 379,000 SF shell. QTS also has surrounding land available for the development of three additional 24 MW data centers.

QTS operates a second DFW campus located in Fort Worth. QTS acquired the data center in 1Q 2017 from HCSC in a sale-leaseback transaction. The purpose-built 260,000 SF data center holds 80,000 SF of raised floor space, and is fully leased.

Skybox Data Centers

Skybox Data Centers is a data center development company located in Dallas, TX. Founded in 2013, the company is delivering data centers designed for enterprise users with high performance computing requirements. The firm built their first facility in Houston, which was sold in late 2020 to aid their plans for growth into new markets. Skybox is currently building its first facility in Chicago, partnering with Prologis.

In 2016, Skybox completed a 14.4 MW, 150,000 SF powered shell in Plano. Skybox sold this facility to a cryptocurrency mining operation in 1Q 2018. Based on demand, Skybox has the ability to add three more data centers to the 21-acre site.

Stack Infrastructure

Launched in 2019, Stack Infrastructure is a data center company branded and sponsored by investment company IPI Partners. Stack offers an array of tailored infrastructure services to customers across the US. Stack's current assets include 21 data centers and parcels of land in 9 US markets.

Stack Infrastructure's Dallas campus is located in Plano in the Legacy Business Park. The campus consists of two large data centers with land for a third facility. The first was purchased from an enterprise user whose plans to convert the purpose-built shell into a data center stalled in 2011, and is now almost wholly leased to Equinix. The second data center is built on a 9-acre parcel purchased in 2Q 2016. Delivered in 4Q 2017, the first data halls feature 2.15 MW of commissioned power, with a full 10.75 MW total capacity planned for the building.

Stack Infrastructure also has plans for a large data center campus north of Fort Worth in the AllianceTexas business park. Stack intends to develop the 350-acre site into a 400+ MW campus.

Stream Data Centers

Stream Data Centers is a privately-held colocation provider with a presence in Chicago, Dallas, Houston, Minneapolis, Phoenix, and San Antonio. Stream's data centers are built to attract users that value private infrastructure in multiple forms — including the physical data hall, UPS, PDU, generator units, equipment yards and office space. Stream Data Center tenants have the opportunity to control their own infrastructure, and their facilities are typically dual fed from two separate substations, delivered with 2N electrical redundancy. The company is headquartered in Dallas.

Stream constructed two data centers in Dallas in 2015 and 2016, both of which Stream sold to enterprise users. DataBank also purchased a data center project from Stream in 2Q 2017, which Stream began construction on in the previous quarter.

In 2Q 2018, Stream purchased 22.7 acres of land, with plans to construct a 140,000 SF data center. The site is across the street from RagingWire's Garland campus, and adjacent to a large Oncor substation. The first 3 MW of commissioned power came online in 3Q 2019, with another 30 MW of planned capacity.

Tierpoint

Tierpoint is a cloud, colocation, and managed services provider headquartered in St. Louis, MO. The company's national growth strategy is to acquire operators of highly-redundant, carrier-neutral data centers in mostly underserved or secondary markets. Tierpoint's largest acquisition to date was the $575 million purchase of an enterprise managed IT services provider Windstream's data center assets in October 2015.

The Tierpoint facility in Dallas is a 68,000 SF retrofitted data center to the west of downtown Dallas. Tierpoint announced the delivery of its cloud infrastructure as a service (IaaS) offering in 3Q 2014.

In 3Q 2016, TierPoint partnered with Compass Data Centers to construct a new data center in Allen. Delivering 16,000 SF of raised floor as Phase I, the facility will total 90,000 SF at full buildout. The data center was delivered in 2Q 2017. This is TierPoint's second data center in the market.

In 4Q 2018, TierPoint released their Cloud Connect Express service, providing users with a private, dedicated connections to public cloud services from their data centers.

VPLS Solutions

VPLS Solutions is an IT services providers formed in 2019 after Evocative's purchase of VPLS. Solutions from VPLS include cloud, managed services, and colocation, as well as access to the company's global network backbone. VPLS operates 18 data centers in the US, Europe, and Asia, all of which are carrier neutral and feature diverse compliance certifications. The company is headquartered in Los Angeles, California.

In 1Q 2018, VPLS purchased Cyberverse, adding three data centers to their portfolio. Among the purchased facilities was CyberVerse's 600 kW leased inside Aligned's Dallas data center.

In August, VPLS acquired a data center property in Dallas, featuring 18.8 acres of land and a 75,000 square foot existing data center that is 100% leased to a technology company. VPLS hopes to develop additional data center space at the property, which currently supports 2.5 MWs but is expandable to 16 MWs.

About Our Sponsor

Digital Realty www.digitalrealty.com/

As the largest provider of multi-tenant data center capacity, Digital Realty and its global family of brands deliver the full spectrum of data center, colocation and interconnection solutions to support the world's leading enterprises and service providers—from cloud and information technology services, communications and social networking to financial services, manufacturing, energy, healthcare and consumer products.

By solving the most complex infrastructure, connectivity and workload use cases across network peering, hyperscale, low-latency, HPC/ Big Data and artificial intelligence, customers experience a flexible and differentiated value journey. Digital Realty stands as the trusted global partner to support the sustainable growth of the world's most innovative enterprises and data-driven corporations.

Digital Realty's global data center footprint gives customers access to the connected communities that matter to them with 291 facilities in 47 metros across 24 countries on six continents.

While Digital Realty customers trust and rely on its centers for data exchange, colocation and interconnection solutions, they also depend on its sustainable design to minimize environmental impact. Digital Realty is committed to continually optimizing the use of energy and natural resources in order to deliver improved performance for its customers.

Digital Realty's commitment to sustainability is outlined in the company's 2020 Environmental, Social and Governance Report. Here are some key achievements:

▶ More than 2.3 million metric tons of CO_2 equivalent emissions avoided in 2020, enough to power 415,000 US homes annually.

▶ 100% renewable energy for all European properties

▶ 100% renewable energy for U.S. colocation portfolio

▶ 556 MW new solar and wind energy under contract in the U.S.

▶ Leader in Green Building: More certified Green Buildings than any other Provider

▶ Achieved U.S. Department of Energy target goal of 20% energy efficiency

▶ Is the largest Green Bond issuer in the data center industry, having issued $5.6 billion in cumulative green bonds.