

Sustainable Finance & Advisory

Powering Tomorrow: The Sustainability Imperative for Data Centers



The data center space continues to expand, with revenue expected to reach \$948 billion by 2030, an almost 200% growth from \$340.2 billion today.¹ This growth will be costly to the environment if sustainability is not jointly considered. Data centers are huge energy consumers, and their energy usage is expected to quadruple by 2030, with the tech industry accounting for 5-20% of global energy utilization.² In addition to energy, data centers are also large water consumers, as a 1-MW load data center uses around 6.75 million gallons water per year. In the U.S. alone, data centers utilized more than 660 billion liters of water in 2020.² Tech firms are already facing backlash for the energy and water performance of existing data centers and some have been prohibited from building data centers in the EU due to high energy consumption.² Additional regulatory pressures and initiatives are also driving the need for more sustainable data centers, like the EU Climate Neutral Data Centre Pact, a major pledge of industry players to

achieve climate neutrality by 2030, and Virginia's Data Center Efficiency Bill, which would require data center operators to meet energy efficiency requirements to be eligible for the sales and use tax exemption for data center purchases. Clearly, more sustainable data centers are necessary for long term success.

Major players like Microsoft, Meta, and Google are already adopting sustainable practices like procuring renewable energy for their facilities. It is expected that the global sustainable data center market will reach \$213.4 billion by 2030, comprising efficient IT equipment, sustainable building design, monitored water consumption, and climate friendly data storage and servers to reduce energy and water consumption.³ By adopting more sustainable practices, data centers can not only reduce electricity consumption and carbon emissions but also reduce capital expenditures and long-term costs through improved life span.

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1. Adam, "Data Centres in 2030: Challenges and Trends for the Next 10 Years"

2. Forbes, "Pioneering The Future of Sustainable Data Centers"

3. Fortune Business Insights, "Green Data Center Market Size, Share & Covid-19 Impact Analysis"

The following represent best practices for developing sustainable data centers:

Efficient Data Center Equipment	Equipment represents nearly two-thirds of the energy consumption of a data center. Purchasing energy saving certified equipment, including enterprise servers, power suppliers, storage servers, network switches, and routers can greatly reduce energy consumption and increase efficiency. For example, an ENERGY STAR certified server consumes 30% less energy than a standard server, saving on average more than 650 kWh/year. ⁴
Optimized Air Flow and HVAC	On average, the HVAC consumes 40% of the energy at data centers. Optimizing HVAC performance through adopting inexpensive airflow management practices for cooling efficiency, moving to a hot aisle/cold aisle layout for server racks which will reduce the fan energy consumption by 20-25%, or using a cooling tower instead of a mechanical chiller to supply chilled water for cooling the data center can reduce overall energy use. ⁵
Improved IT and Power Infrastructure	Ensure full utilization of IT and power infrastructure by removing underutilized servers and consolidating to increase server utilization, enabling power management features that will reduce power consumption during times of low utilization, deploying efficient and smart power distribution units (PDU) that monitor power usage, and installing energy efficient UPS systems to minimize electrical losses.
Sustainable Data Center Building	Obtaining green building certifications like LEED or ENERGY STAR, ensuring lighting is upgraded to LED and building upgrades are made in a timely manner, and sourcing 100% of electricity from clean or renewable sources are best practices for operating the data center buildings.
Renewable Energy	Integrating clean energy sources into a data center can reduce its carbon footprint. Renewable energy can be procured through a variety of onsite and offsite methods, including onsite, through PPAs or VPPAs, or through REC purchases.
Water Consumption	Data centers can reduce their water consumption by optimizing the timing of introducing water into the cooling cycle of servers and locating the data center in a naturally cool climate geography which will reduce the need for water to cool the servers (“free cooling”).

4. ENERGY STAR, [“Data Center Equipment”](#)

5. ENERGY STAR, [“Optimize Airflow and HVAC”](#)

As data centers look to adopt more sustainable practices, they can potentially broaden their investor base and leverage sustainable finance solutions to reduce financing costs. There have been a number of recent transactions that highlight the different sustainable finance opportunities, from sustainability linked to green use of proceeds, for data centers embarking on their sustainability journey.

Select Sustainable Finance Data Center Transactions

<p>Netrality Data Centers</p>	<p>Closed a \$380 million sustainability-linked credit facility comprised of a \$125 million term loan, a \$155 million revolving credit facility, and a \$110 million delayed draw term loan. The facility includes two KPIs, reduction in portfolio PUE and energy-efficient capital expenditures, and pricing will be determined based on achievement of annual targets related to these KPIs.⁶</p>
<p>Aligned Data Centers</p>	<p>Issued \$1.35 billion in green securitized notes, using their Green Finance Framework to identify qualifying use of proceeds for this issuance. The notes were externally analyzed by Sustainalytics, and qualifying expenditures include investment in data center infrastructure that target PUE of 1.35 for data centers that use water-based cooling technology and 1.45 for data centers that use water-free cooling technologies. Aligned was also the first data center to issue a sustainability-linked loan.⁷</p>
<p>CyrusOne</p>	<p>Launched its inaugural \$701 million Green ABS transaction for five of its data centers in 2023. CONE updated its existing Green Finance Framework to explicitly contemplate securitized products and eligible projects include data centers with design PUE of less than or equal to 1.5 for existing, retrofitted, and new-build infrastructure.⁸</p>
<p>Equinix</p>	<p>Included ESG Amendment language in its \$4.0billion credit facility in late 2022. This allows Equinix to add in KPIs at a later date through an amendment process. Integrating this language into a credit facility indicates the company’s intent to further incorporate sustainability into their business strategy.⁹</p>

In addition to tailoring sustainable financing options for our data center clients that are looking to operate more efficiently and sustainably, Wells Fargo is also committed to occupying sustainable data centers. Four new data centers are currently under construction, all of which are pursuing LEED Gold certification. The new data centers have a target PUE of 1.2, have 100% of electric energy offset by renewables, and will use refrigerant-based cooling which is expected to reduce water usage by 90%.¹⁰ Wells Fargo is also supporting a number of emerging energy efficient technologies that will help data centers operate more sustainably through its [IN2 Innovation Incubator](#) in partnership with NREL. Wells Fargo is leading by example and is eager to assist our clients in adopting more sustainable practices.

6. PR Newswire, “[Netrality Data Centers Secures \\$380M Sustainability-Linked Loan to Support Energy-Efficiency](#)”

7. Aligned, “[Aligned Sets Record for Largest-Ever Inaugural Data Center Securitization As Part of \\$1.725 Billion in Structured Sustainable Debt Financing](#)”

8. Data Center Dynamics, “[CyrusOne to Issue \\$701 Million in CMBS](#)”

9. [Equinix Filing](#)

10. Wells Fargo Securities, LLC.

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