Vendor Profile

Equinix's Sustainability Progress: IT Provider Corporate Responsibility Profile

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IDC OPINION

In the age of digital business, large datacenters are the "factories" or engine of growth. Digital transformation of all business depends on resilient datacenters and widespread connectivity to gather, secure, leverage, and move data. As large consumers of energy and water, datacenters are at the center of conversations around sustainability, climate change, and energy. Global datacenter providers that house hyperscale and large cloud service provider infrastructure have a responsibility to acknowledge and address how their operations that run digital business and transformation are also impacting the earth and its natural resources. Equinix, a global provider of datacenter and connectivity resources, has embraced change within its industry and is leading by example to help create a more sustainable datacenter ecosystem. It has made significant investments in running highly efficient facilities and in buying renewable energy to reduce its impact on the environment. Equinix is embracing transparency in reporting around its operational footprint. Equinix is one of very few datacenter operators that reports total energy usage and carbon emissions in its corporate sustainability report. Further:

- By making investments in operating more efficiently, relying on cleaner sources of energy for its datacenters, and building an ecosystem that enables its customers to power their equipment with cleaner energy, Equinix is changing the trajectory of datacenter energy consumption and decoupling digital infrastructure growth and energy consumption.
- Equinix is investing in new technologies, embracing new ways of operating datacenter facilities, and using its global footprint to extend sustainable datacenter best practices across the globe. The vast reach of its network of facilities enables the companies that house equipment and data in Equinix facilities to leverage more sustainable datacenter operations.

IN THIS VENDOR PROFILE

This IDC Vendor Profile examines Equinix's strategy to reduce the carbon footprint of digital business by building and operating highly efficient facilities, powered by renewable energy, that contribute to more sustainable operations.

SITUATION OVERVIEW

Sustainability is driving new conversations around energy use, efficiency, and social responsibility. Large datacenter owners and operators are in a key position to drive positive change inside and outside the industry. Today, having access to resilient datacenter facilities is table stakes for digital business. With the primary goal of ensuring reliable IT operations in all locations where a company conducts business, the ability to do so while growing sustainably is a major challenge for most

July 2020, IDC #US46725420

organizations. Small changes can be made that impact carbon emissions, but to make meaningful progress can require significant, long-term investment and expertise. As a global provider of datacenter and interconnection, Equinix has a deep understanding of the complexity and commitment required to drive change that makes a positive impact on the environment and the communities it operates in. With its wide reach, Equinix is able to multiply the environmental impact of its progress by extending this innovation to its customers.

At the same time, Equinix has expanded into new markets and built and acquired International Business Exchanges (IBXs) around the world, and it has also sustained growth of its renewable energy footprint. This is no small feat given the pace of growth. In 2019, Equinix purchased renewable energy from wind, solar, small hydro, and biomass to cover 92% of its global electricity consumption — 16 countries are covered at 100%, and 165 of the 200+ locations worldwide offer customers 100% renewable energy.

Company Overview

Equinix, a global provider of datacenter and connectivity resources, builds and operates some of the most advanced and efficient datacenter facilities for 9,700 customers. Equinix operates in 55 markets around the world with more than 210 datacenters.

Company Strategy

Equinix Carbon Efficiency Strategy

Equinix's vision for sustainability spans across the company's environment, social, and governance (ESG) initiatives. As a large datacenter owner and operator, environmental initiatives are central to Equinix's focus; the company has embraced technology and innovative construction processes to drive sustainability goals. By reducing consumption of resources and investing in cleaner renewable energy, Equinix has reduced its carbon footprint 60% while doubling its datacenter and energy consumption footprint since 2015. By shifting to renewable energy for 92% of its operations in 2019 (up from 34% in 2015), Equinix has greatly reduced the carbon intensity of its operations.

Breaking the connection between increased IT and datacenter load and increased energy consumption is significant in the journey to greater sustainability. As network traffic and IT workloads have surged, datacenter energy consumption has remained relatively flat due to technology to improve IT resource utilization. This same transformation is happening at the facilities level, with modernized datacenter resources driving the efficient use of energy. In January 2020, Equinix created an Energy Efficiency Center of Excellence to coordinate performance upgrades to existing facilities and create more sustainable facilities. This program is driven by Equinix's engineering group to maximize energy savings and achieve power usage effectiveness (PUE) targets. Making older datacenters more efficient can be difficult and is often the reason that organizations turn to a partner to help. By leveraging its internal expertise and partners, Equinix can transform facilities and drive more efficiency.

The European Data Centre Association (EUDCA) represents the interests of the European commercial datacenter operator community, both politically and commercially. Equinix is directly engaged with the EUDCA, contributing to policy work in Europe that is shaping the datacenter industry of the future — one that is community oriented and supports the essential evolution of the industry's facilities. This includes everything from continuing to deliver energy efficiency to defining strategies to completely transform the industry to rely on renewable, carbon-free power and embrace opportunities to reinsert captured heat into communities. Equinix's vision is to be fully integrated in the green grid of the future.

To maximize its datacenter operations spend, Equinix has used energy-efficient lighting, cold/hot aisle containment, and raised facility temperatures (what it calls "business as usual" improvements). To drive further efficiency, Equinix has made investments in the following technologies to operate more sustainable, resilient datacenters:

- **DCIM and adaptive control systems.** These systems reduce power consumption through gathering data with sensors and implement control policies to drive efficiency. Equinix has reduced its global PUE average from 1.62 to 1.54. (Most datacenters operate at a PUE average of 2.3–2.5.)
- **Heat recovery.** Heat recovery is a system that takes "waste" heat from datacenter facilities and transfers it to areas where people are working or studying in a practical application of reuse/recycle theory. Since 2011, Equinix's HE3 datacenter in Helsinki, Finland, has recovered heat and exported it to the district network. Equinix plans to extend the concept to more sites in the future. By using water that has been heated in the datacenter to 86F (30C), Equinix can supply a residential area of 12,000 people with a source of low-carbon heat.
- **Natural refrigerants.** Equinix uses natural alternatives to hydrofluorocarbon (HFC) that do not deplete the ozone layer.
- **Fuel cells.** Equinix has 38MW of cleaner electricity provided by fuel cells onsite, with nearly 50MW in total planned capacity.
- **Aquifer thermal energy storage (ATES).** ATES uses groundwater during colder times instead of mechanical cooling to reduce spending on energy. These ATES systems are currently in use at Equinix's Amsterdam, the Netherlands, sites.
- **Machine learning (ML) and artificial intelligence (AI).** Equinix is improving the use of energy by relying on ML and AI technology to drive greater efficiency in cooling its datacenters.
- **Renewable energy commitments**. Equinix has 165 sites powered 100% with renewable energy. Out of its total worldwide energy usage of 5,740GWh in 2019, 92% was from renewable sources. In Asia/Pacific, 75% of its datacenter energy is covered by renewable energy certificates. In Europe, it relies on renewables for 99% of its energy needs. In the Americas region, 93% of its datacenter energy is from renewable sources, with 100% of the U.S. operations renewable. Equinix was one of the first datacenters to leverage the virtual power purchase agreement (VPPA) to source offsite renewable energy for its sites in the United States.

With its expansive global footprint, Equinix has both challenge and opportunity. The challenge is to build or retrofit facilities to their efficiency standards in very different climates and in countries with very different regulations. The opportunity is to leverage climates where it is easier to keep servers cool, such as in the Nordic countries. The global presence allows Equinix's customers the opportunity to leverage highly efficient datacenter resources whenever possible.

FUTURE OUTLOOK

Large datacenter owners and operators have an opportunity to drive positive change for the industry and position IT as part of the solution, not the cause of problems, in the journey toward more sustainable operations. Protecting the earth's resources and showing progress on environmental sustainability goals are increasingly important to investors and top talent. Companies such as Equinix will differentiate their business and prove value through their success in implementing greener technologies and improving the efficient use of resources. Equinix is in a good position to lead by example. Its investments in new technologies to accelerate the shift to cleaner energy, as well as

innovation in technology to reduce overall energy consumption, will drive positive change across the broader datacenter ecosystem. Equinix is actively testing new technologies and applications to make its operations more sustainable. These include direct liquid cooling to substantially reduce PUE, software-defined power to improve power provisioning and allocation, and generatorless datacenters to advance the use of fuel cells and replace generators.

Beyond its own procurement of renewables, Equinix is supporting the shift to clean energy on a broader scale with its involvement in the Renewable Energy Buyers' Alliance (REBA), which helps energy buyers develop strategies to procure cleaner energy. Helping build an ecosystem that brings together providers and consumers helps build the market to drive the adoption of clean energy. With a focus on the larger, global picture, Equinix is in a key position to enable cross-industry collaboration to deliver robust and stable green energy as well as heat recovery networks. Equinix's strategy is to roll out future IBXs to be part of integrated and community-focused energy solutions.

As organizations seek to reduce their carbon footprint, they will look for providers that not only share these goals but can accelerate their progress. By shifting to new ways of operating datacenters, the carbon impact of digital business will be mitigated. As more datacenters are purpose built with not only business resilience in mind but operational efficiency, they will be able to continue to reverse the equation of more IT and more data adding up to increased energy spend and negative impact on the environment.

Digital transformation has the potential to dramatically increase efficiency across many industries — manufacturing, transportation, mining, and utilities will be operating very differently over the coming decade and have the potential to use technology and data to produce, operate, and scale more efficiently while reducing greenhouse gas emissions. With this transformation depending on datacenter resources to accomplish, it is imperative that these industries partner with datacenter providers that are prioritizing sustainability in all regions of the world.

ESSENTIAL GUIDANCE

Advice for Equinix

Building partnerships with renewable energy providers and fostering a broader adoption of cleaner resources to all business will extend the positive impact Equinix has made in its own facilities. By educating policymakers on the opportunity for technology to drive sustainability progress, large datacenter providers can position themselves at the center of change for good. By investing in cleaner technologies, large datacenter providers can create robust markets and make these cleaner resources available to organizations that do not operate on a large scale. Serving as a testbed for innovation, Equinix can help refine and productize impactful technology that can further improve efficiency and conserve natural resources.

Equinix customers own and operate their own IT infrastructure inside of Equinix facilities. For this reason, Equinix has a limited ability to influence strategies around equipment decommissioning and disposal and increasing IT utilization rates. Gaining the most value out of infrastructure, reducing ewaste, and ensuring environmentally responsible asset disposal are important aspects of sustainability. Equinix is in a good position to foster partnerships and help customers adopt new technologies and processes to become more efficient and sustainable. As customers rely more on Equinix to support digital transformation initiatives and modernized IT, Equinix's ability to communicate best practices and enable new partnerships to support these best practices will be a differentiator.

Communicating clear short-term and long-term goals for adoption of innovative technologies to drive efficiency and tracking strategy and progress would underscore Equinix's commitment to transparency. Although some investments may not yet be deployed across all facilities, the ability to see where or when they will be deployed will help Equinix customers understand and make choices on where to place workloads that also support their own sustainability goals.

LEARN MORE

Related Research

- *Circular Economy Principles for Greener Datacenters* (IDC #US46446120, June 2020)
- *Technology and Sustainability: The C-Suite in the Anthropocene Era* (IDC #EUR246412520, June 2020)
- *COP25: The Role of Technology in Climate Change* (IDC #EUR146238620, April 2020)
- *IDC Market Glance: Resilient and Sustainable Datacenters, 3Q19* (IDC #US44742719, August 2019)

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