

## **“Green Prince William County Businesses” Data Center Companies Sustainability Information**

### **General data**

- Between 2010 and 2018, the amount of cloud computing increased by 550%, but energy consumed by data centers grew by six percent during that same time.  
(<https://blog.google/outreach-initiatives/sustainability/data-centers-energy-efficient>)

### **QTS**

- Goal to procure 100% of power from renewable energy by 2025 (2018 baseline) – Has achieved more than 100% renewable energy since 2018
- Conserve 15 million gallons of water annually, with the goal 5%Year over Year improvement.
- EV Charging at 75% of sites (3 years ahead of schedule) – In PWC?
- Goal to plant 20,000 tree per a year (has planted 50,000 trees thus far, however how many in Virginia?)
- Currently designing buildings to meet 100% Green Building Standards (is there a time frame for this?)
- In 2021, QTS recycled 1.7 billion pounds of material and recycled 74.5 % of its operational waste. It’s goal is to recycle 90% of operational waste by 2025
- Has committed to cutting its greenhouse gas emissions by half within 10 years as part of the US Department of Energy Climate challenge
- QTS is moving forward with water free cooling design for ever new QTS Data Center

Source: <https://www.qtsdatacenters.com/-/media/files/sustainability-reports/2021-esg-report.ashx>

### **Microsoft**

- As of June 2021, 80% renewable energy procured coverage from wind, solar, and hydro for Virginia
- Transitioning from petroleum-based diesel to renewable biofuel blends for backup generation, with the goal of being diesel free by 2030
- Corporate pledge to become carbon negative by 2030 and remove its historical carbon since its sounding in 1975 by 2050
  - Contracted to remove 1.1 metric tons of carbon from the environment through Reforestation Projects, Using Biochar for soil amendments, and Direct Air Capture
- 100% renewable energy supply by 2025
- Goal to get 100% of electricity consumption, 100% of the time matched by zero-carbon energy
- Reduce wastewater from date centers by 95% by 2024
- Microsoft’s Virginia Data Centers have been certified as zero waste to landfill by UL Solutions
- Goal to reduce scope 3 emissions by half by 2023 (emissions from suppliers)

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Sources:

[https://infrastructuremap.microsoft.com/pdfs/sustainability/factsheets/Virginia%20\(East%20US%20&%20East%20US%202\).pdf](https://infrastructuremap.microsoft.com/pdfs/sustainability/factsheets/Virginia%20(East%20US%20&%20East%20US%202).pdf)

<https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4Q00D>

**Google:**

- In 2021, Google matched 100 percent of its annual electricity consumption with purchases of renewable energy, bringing more than 7 gigawatts of new renewable energy online. Its goal is to Carbon Free 24/7 by 2030.
  - <https://www.google.com/about/datacenters/cleanenergy/>
- In 2021, Matched 66% of data center electricity use with regional carbon-free sources, on an hourly basis
  - <https://www.gstatic.com/gumdrop/sustainability/google-2022-environmental-report.pdf>
- Implement Carbon Aware computing, scheduling less important task when carbon free sources of electricity are available.
  - Video: <https://www.youtube.com/watch?v=ZonMZJDP5yc>
- By 2030 goal is to replenish 120% of the water that it consumes at its office and data centers
  - <https://blog.google/outreach-initiatives/sustainability/replenishing-water/>
  - Contributions over \$150,000 in 2021 to the following organization local watershed organization
    - Goose Creek Association
    - Loudoun Wildlife Conservancy
    - River Creek Confluence Park Committee
    - Sprout Therapeutic Riding
    - The Potomac Conservancy
    - Virginia Association of Soil and Water Conservation
    - A Farm Less Ordinary
  - In 2022, \$235,000 to the Alliance for the Chesapeake Bay to support efforts to improve water quality in the Potomac Watershed
- By 2030, Google’s goal is to achieve net-zero emissions across its operations and value chain including consumer hardware products

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- Implement eco-friendly routing in Google maps, including providing bike options and public transit options.
- Enable customers to choose lower carbon footprints when booking flights or purchasing appliances.
- Compared with five years ago, Google now delivers around five times as much computing power with the same amount of electrical power
  - 1.1 average annual PUE (Power Utilization Effectiveness – closer to 1.0 the better)
- 78% of corporate waste is diverted from landfills
- 27% of components are refurbished
- 4.9 million components resold for reuse on the secondary markets
- From 2010 to 2021, invested \$3.3 billion in renewable energy projects

Google 2022 Environmental Report: <https://www.gstatic.com/gumdrop/sustainability/google-2022-environmental-report.pdf>

### **NTT**

- Goal to be net zero emissions by 2030.
- 100% renewable energy by 2030
- More than 30% of energy used in NTT data centers comes from renewable sources
- Signed UN Global Compact (Paris Agreement) to align goals to 1.5 degree pathway

### **AWS**

- On the path to 100% renewable energy by 2025
- Commitment to reach net-zero carbon across its operation by 2024
- 17 renewable energy projects in Virginia  
(<https://sustainability.aboutamazon.com/environment/the-cloud?energyType=true>)

**COPT \*** - 2025 Sustainability Goals (does not include efforts of data center end users)

- 5% reduction energy use
- 5% reduction of Scope 1 and Scope 2 Emissions
- Water use – Zero Increase in water use intensity

Source:

[https://d1io3yog0oux5.cloudfront.net/copt/files/pages/copt/db/2284/description/COPT\\_2022\\_SustainabilityReport\\_final\\_final.pdf](https://d1io3yog0oux5.cloudfront.net/copt/files/pages/copt/db/2284/description/COPT_2022_SustainabilityReport_final_final.pdf)

### **Iron Mountain**

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- 24/7 carbon free energy by 2040. Under this commitment we will match our consumption with locally produced (same grid region) carbon free energy each hour of every day. To achieve this we are supporting the development of new wind, solar and hydro projects sited within the PJM grid.
- Signatory to the [Climate Neutral Data Centre Pact](#). This commitment includes specific targets for energy efficiency, water usage, waste-heat recovery, circular product solutions and renewable energy in an effort to be climate neutral by 2030.
- Circular Products - Iron Mountain is the world’s largest IT Asset disposition company, supporting responsible decommissioning of servers through securely salvaging components for reuse and proper recycling at end of life. With the growing number of data centers globally we see this as a critical area of future impact.
- By 2025, plans to build all new multi-tenant BREEAM Green Building Standards

Iron Mountain 2021 sustainability report [here](#)

### **CloudHQ**

- As a large-scale electricity user, we have a strong focus on energy and climate.
  - All our data centers are climate neutral under the Climate Neutral Data Center Pact, including those in Prince William County. This means we are on a path to power all our facilities with renewable energy by 2030 and 70% renewable energy by 2025.
  - We institute continuous improvement regimes for reducing energy consumption in all the data centers we operate. As infrastructure operators our focus is on driving down PUE and improving energy efficiency. Our customers take the baton on to reducing IT power consumption and we work closely with them around shared opportunities such as improved hot aisle containment (i.e., keeping doors closed, installing rack blanks, and proper placement of system sensors).
  - We have a strong programme of climate resilience measures, starting with resilient design and construction practices, through to preparedness for extreme weather, high temperatures, and other climate-driven operational scenarios.
- Circular economy: We divert waste from landfill and minimise the embodied carbon in our facilities wherever it is feasible for us to do so.
  - In Prince William County we have a strong recycling program for operational waste that covers glass bottles, plastics, aluminium, steel, mixed paper, paperboard packaging, and corrugated cardboard and boxes. We work closely with a waste handling partner to identify opportunities to divert as much material as possible from landfill.
  - Our tenants handle their own electronic waste, which occupies a huge portion of the embodied energy and rare earth materials in our facilities. We provide facilities that enable them to repair, reuse and recycle this equipment wherever they can feasibly do so in a secure and responsible fashion.
  - Our policies for construction, demolition and remediation prioritise on-site re-use and the use of recycled materials wherever possible.

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- Water consumption: We conserve and protect water resources as a top priority. We avoid the use of water for irrigation and only ever choose to use water for cooling purposes sparingly, and where doing so allows us to conserve land and energy and reduce emissions. All our Prince William County data centers use zero-water irrigation and water-free or 100% non-potable cooling strategies.
- We underpin all our sustainability efforts with data. This means a program for secure data collection and management; to enable us to track our progress against sustainability goals; and to ensure readiness to meet our legal obligations. We are in the process of expanding this to cover more of our supply chain, and a wider range of environmental attributes.
- We pursue transparency, shared standards for sustainability and independent verification.
  - All our operating data centers are LEED compliant and the majority are LEED Gold certified. This ensures that we are performing well across the range of key sustainability indicators.
  - We operate ISO certification programmes for independent verification of our operating systems and are assessing the wider roll-out of ISO 50001 (energy management), ISO14001 (environmental management), ISO14040 (lifecycle assessment) and UL2799 (zero waste to landfill).
- We aim to develop in a way that protects nature and prioritises the needs of people and the communities around us.
  - We choose new sites carefully, assessing their suitability for a new data center using a scoring process that assesses how sustainable it will be. This includes prioritising brownfield sites, sites with scope to provide jobs to disadvantaged sections of the community and sites where waste heat re-use is feasible, or where more sustainable sources of power and cooling are available.
  - This includes the MDC site, which was developed on reclaimed industrial land, helping us to conserve land, prevent urban sprawl and protect natural habitats around Prince William County.
- All our new developments target net gains in biodiversity, and all our existing sites, including those in Prince William County, enhance the value of the available land to nature by using our biodiverse planting strategy. This uses native and adapted species to increase the value of landscaped areas as a natural habitat, and to minimise the need for intrusive maintenance.