



2022 Sustainability Report



Introduction

Introduction

Letter from the CEO

In our first two Sustainability Reports in 2019 and 2020, we detailed how CyrusOne builds data centers for a sustainable future. Since then, the pace of change in technological innovation, social movement, and climate has only accelerated. Sustainability has become a moving target, and we must ensure our company and our data centers are ready to meet these unrelenting challenges successfully by becoming more adaptable and flexible; we must focus on resilience.

This has never been more obvious than during the past two years, when changes have come rapidly in many facets of life. Social justice movements are leading the charge to dismantle systemic inequalities in the US and around the world. Companies and governments are greatly accelerating efforts to combat climate change and habitat disruption. And these positive changes are all occurring against the backdrop of the COVID-19 pandemic, which has highlighted the vulnerabilities in our systems of commerce, health, and work, along with the opportunities a more connected world can provide.

During this time of heightened global change, we at CyrusOne are undergoing our own transformation. In November 2021, global investment firms KKR and GIP acquired us in a \$15 billion transaction that promises to provide substantial additional resources and expertise to accelerate our worldwide expansion and sustainability efforts and help us deliver the timely and reliable solutions at-scale that our customers value.

The future is coming quickly, and we are doing our best to make it a more just and sustainable one. To respond to ongoing changes and achieve the future we hope for, the world requires resilience – a practice we in the data center industry pursue daily. Lately we've started looking beyond our deep understanding of resilient data networks to improving resilience in other areas of our business and our lives.

We seek to maintain a resilient workforce by ensuring our employees and contractors have the support they need to adapt to changing business and world conditions, while we nurture new and diverse talent through internships and training programs. Workforce resilience will only be possible in resilient communities, where needs are met and people are ready for disruptions. Ultimately, the success and health of all of our human and technological

networks depends on a resilient environment – a world with ample water and habitat to supply the needs of both humans and wildlife, and where the effects of climate change are minimized.

You can read more about our support for these Networks of Resilience in the [Social Responsibility](#) and [Environmental Impact](#) chapters, but let me mention a few key efforts here.

I recently signed the [CEO Pledge for Diversity & Inclusion](#) to reinforce our commitment to building innately resilient workforce networks. To hold ourselves accountable as we work toward these goals, we report not only our workforce metrics, but also our occupational safety and supply chain diversity metrics. By working with our supply chain, we see an opportunity to increase our positive impact beyond our own direct scope of control.

Our efforts to support resilient ecological networks were recognized in 2021 by E+E Leader, which honored our **Net Positive Water Chandler** project as one of its [Top Projects of the Year](#). At Chandler, our largest campus, we reduced onsite water use and then partnered with the Bonneville Environmental Foundation and the Arizona Land and Water Trust to restore water flows to the region using BEF Water Restoration Certificates®. These certificates are generated by helping local farmers switch to high-efficiency irrigation systems, which allows more water to stay in natural waterways and builds local biological resilience. Since then, we've added our North Texas Carrollton and Allen data centers and our Dallas headquarters to our *net positive water* portfolio. In building ecological resilience, these facilities also become more operationally resilient without a dependence on scarce water.

As we pursue these new and ongoing sustainability programs, we are united by our motto: **One company, one team, one purpose.** Our facilities share design principles and a commitment to efficiency across locations, and our people are globally connected to serve our customers. Together, we are united in building a resilient company for a more sustainable future.



David Ferdman,
President and CEO



About This Report

Published in July 2022, this updated report covers the calendar year 2021 and represents the best available information at the time of publishing. This report has been prepared based on GRI (Global Reporting Initiative) standardized metrics, presented in [Appendix 3: Standardized Metrics](#). It was formally reviewed and overseen by the Board of Directors and our Senior Management Team, in collaboration with our Sustainability Working Group. The primary data in this report [has been assured](#) to a moderate level ("type 2") by ISOS Group, Inc. For more information on sustainability programs at CyrusOne, visit the [CyrusOne sustainability website](#).



What We Do

CyrusOne is a leading global data center developer and operator specializing in delivering state-of-the-art digital infrastructure solutions. With more than 50 high-performance mission-critical facilities worldwide, the Company ensures the continued operation of digital infrastructure for nearly 1,000 customers, including approximately 200 Fortune 1000 companies.

CyrusOne's leading global platform of hybrid-cloud and multi-cloud deployments offers customers colocation, hyperscale, and build-to-suit environments, which help enhance the strategic connections of their essential data infrastructures and support the achievement of sustainability goals. CyrusOne data centers offer world-class flexibility, enabling clients to modernize, simplify, and rapidly respond to changing demands. Combining exceptional financial strength, a broad global footprint, and continued investment in key digital gateway markets, CyrusOne provides the world's largest companies with long-term stability and strategic advantage at scale.

As a colocation data center real estate company, CyrusOne shares some features with in-house data centers and commercial real estate companies, but there are also important differences. The sections below describe how we compare to these two types of operations.

Colocation vs. In-House Data Centers

CyrusOne is a colocation data center company. This means that we build data halls and support infrastructure (such as the ability to deliver electricity and cooling) so customers can rent space and install their servers in our data halls. This has several important implications and distinctions from in-house data centers:

- **Designed for Flexibility:** Colocation data centers must be designed and built to handle a wide variety of customer loads, equipment types, and capacities. Except for our build-to-suit environments, which are designed to a single customer's exact specifications, our data centers are designed for flexibility and rarely run close to their maximum design capacity (see [Energy Performance](#)).
- **Support Role:** Colocation data center operators do not control the specification or installation of servers. CyrusOne supports our customers in planning and move-in, but ultimately our customers make crucial decisions around server efficiency, cold aisle containment, rack cooling solutions, and end-of-life recycling.

- **Required Resilience:** Colocation data centers promise uptime to customers through redundant systems, comprehensive maintenance, and business continuity planning. While in-house data center operators might strategically allow some of their data halls to go offline during outages, that is not an option for us. For this reason, backup power generation is required. We continue to explore and evaluate alternative technologies to provide the same power resilience with fewer carbon emissions.

Colocation vs. Commercial Real Estate

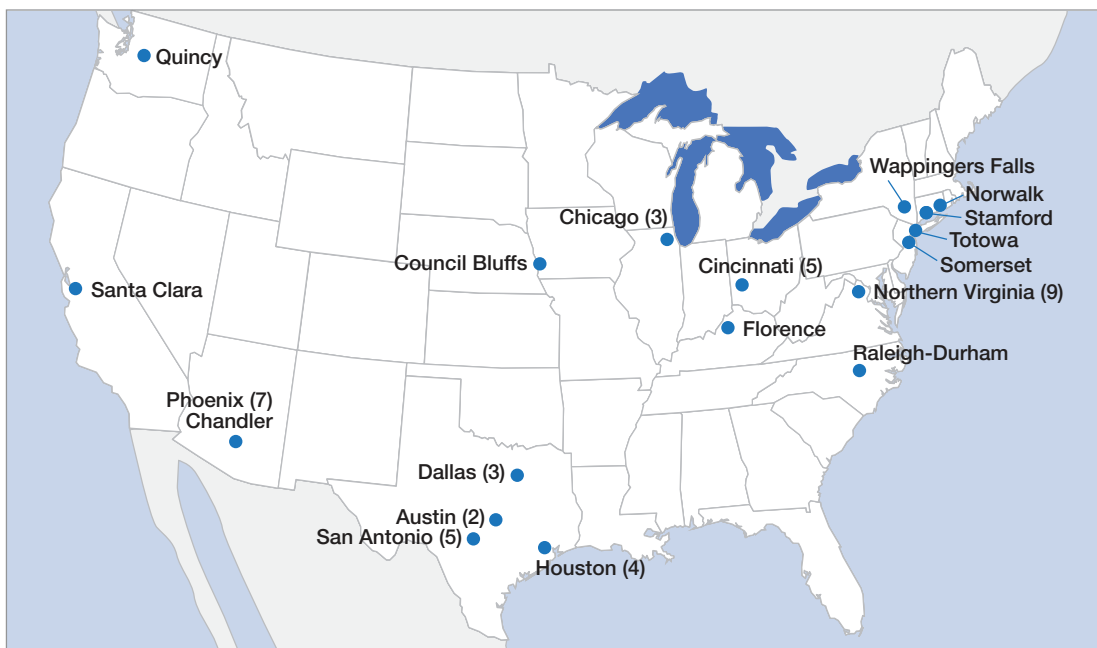
CyrusOne is not just a real estate company, but is specifically a data center real estate company. This means that CyrusOne's real estate portfolios are data centers, and the space is utilized primarily by computer servers. This differentiates us from commercial real estate companies which operate office buildings or commercial spaces in several ways:

- **Digital Occupancy:** Occupancy in our portfolio refers to the installation of servers in a data hall rather than people, so topics of occupant wellness or comfort are not of primary importance to our design and operations.
- **Energy Density:** Data centers use much more energy per square foot than most buildings. Within a data center, the data halls use the most energy per square foot. Depending on the type of electricity the facility is currently using, this can also equate to a high carbon density compared to other types of real estate.
- **Episodic Waste:** Data centers don't generate waste in the same way commercial real estate does. Our most frequent waste sources are break rooms and bathrooms, which contribute low amounts of waste from a small population of technical support, facility maintenance, security staff, and guests. To support customer move-in, we also provide recycling for the cardboard boxes, crates, and pallets their equipment arrives in. This move-in waste may be generated over the span of a few months, followed by years of little waste until a customer does a major hardware upgrade, or new customers move in.



Where We Operate

We provide mission-critical data center facilities that protect and ensure the continued operation of IT infrastructure for approximately 1,000 customers, including roughly 200 Fortune 1000 companies. CyrusOne offers a tailored, customer service-focused platform and is committed to full transparency in communication, management, and service delivery throughout its more than 50 data centers worldwide, which are located primarily in the US and Europe and shown in the maps below (including projects in pre-development). Additional information about CyrusOne can be found at www.CyrusOne.com



United States



Europe



Map reflects facilities as of 12/31/2021.

CyrusOne partners with ODATA in Mexico and South America.

Meeting Third-Party Standards

This report has been designed to provide disclosure compatible with four third-party standards.

Task Force on Climate-related Financial Disclosures (TCFD) Recommendations

As part of our commitment to meeting the recommendations of the TCFD, we have structured this report around the four recommended topics: Governance, Strategy, Risk Management, and Targets and Metrics. Though not specifically addressed by the TCFD recommendations, we include additional highly relevant topics of water conservation, biodiversity, circular economy, and social responsibility.

Taskforce on Climate-Related Financial Disclosures (TCFD) Index	
Topic	Section
Governance	
Board oversight of climate-related risks and opportunities	Board Oversight
Management role in assessing and managing climate-related risks and opportunities	Senior Management Direction , Cross-functional Integration and Coordination
Strategy	
Climate-related risks and opportunities	Climate Risk (Risks and Impacts , Opportunities and Impacts)
Impact of climate-related risks and opportunities	Climate Risk (Risks and Impacts , Opportunities and Impacts)
Resilience of organization's strategy	Climate Risk (Scenario Analysis and Resilience)
Risk Management	
Process for identifying and assessing climate-related risks	Climate Risk (Risk Identification)
Process for managing climate-related risks	Climate Risk (Managing Climate Risk)
Integration into overall risk management	Climate Risk (Managing Climate Risk)
Metrics & Targets	
Metrics used to assess climate-related risks and opportunities	Appendix 3: Standardized Metrics (TCFD) Climate Impact (Metrics and Targets)
Scope 1, 2, and 3 GHG emissions	Climate Impact (Metrics and Targets)
Targets and performance against targets	Metrics and Targets Summary

Global Reporting Initiative (GRI) Standards

To provide transparency, this report has been prepared in accordance with the GRI Standards: Core option. Required elements are found throughout the report:

- **Materiality assessment** was performed based on guidance from GRI 101 Foundation, using the dimensions of importance to stakeholders and impact to the environment or society.
- **Management Approach Disclosures** for material issues are detailed on a company-wide basis in the [ESG Strategy](#) section. Then, in each of the topic-focused chapters ([Social Responsibility](#) and [Environmental Impact](#)), we discuss our management approach for specific topics (e.g., energy, water, biodiversity), as well as specific approaches for subtopics (e.g., energy-efficient building design, energy-efficient operations).
- **Topic-Specific Disclosures** for material issues are included, along with other standardized metrics from TCFD and Sustainability Accounting Standards Board (SASB), in [Appendix 3: Standardized Metrics](#). They are labeled with the GRI disclosure numbering system for ease of reference.

Sustainability Accounting Standards Board (SASB) Guidance

To benefit from the SASB guidance, we have included all relevant recommended metrics from our assigned category, Real Estate (IF-RE). However, since this Real Estate standard is not specific to data centers, we also referenced relevant guidance and metrics for the Internet Media & Services standard (TC-IM). We hope that this combination of metrics will provide a more useful picture for our customers and investors. Our standardized SASB metrics, along with metrics from TCFD and GRI, are listed in [Appendix 3: Standardized Metrics](#).








Third-Party Assurance

The primary data in this report has been assured to a moderate level ("type 2") by ISOS Group, Inc. The assurance statement can be found in [Appendix 3](#), and assured data is marked throughout the report with the stamp shown above.



Sustainable Development Goals (SDG) Alignment

The following chart illustrates our alignment with the United Nations' Sustainable Development Goals. To make sure that our targets are directly related, rather than just thematically related, we specify the SDG Indicator that our target will quantitatively affect. We have thematic connections to other SDG Goals, but their specific SDG Indicators are metrics that our activities do not directly affect, so they are not listed.

CyrusOne Sustainable Development Goals Alignment				
Sustainability Report Section	CyrusOne Target	SDG Goal	SDG Target	SDG Indicator
Water	Net positive water in high-stress regions; 100% water-free cooling in new data centers		Target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Indicator 6.4.1: Change in water use-efficiency over time; Indicator 6.4.2: Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
Energy	All facilities with renewable electricity option		Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix	Indicator 7.2.1: Renewable energy share in the total final energy consumption
Energy	Energy Efficiency Activities		Target 7.3: By 2030, double the global rate of improvement in energy efficiency	Indicator 7.3.1: Energy intensity measured in terms of primary energy and GDP
Climate Impact	Net zero carbon		Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Indicator 9.4.1: CO ₂ emission per unit of value added
Climate Impact	All facilities with renewable electricity option		Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Indicator 9.4.1: CO ₂ emission per unit of value added
Transparency	This report		Target 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	Indicator 12.6.1: Number of companies publishing sustainability reports
Biodiversity	Improve habitats at each facility Protected Areas Assessment		Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Indicator 15.5.1: Red List Index

Metrics and Targets

To measure progress toward our sustainability goals, we have created a set of primary metrics and targets shown in the table to the right. These are the critical metrics that we find most relevant to measuring our progress and against which we set targets. Throughout this report, the primary metrics and targets for each topic are detailed in the relevant sections. For a full list of metrics and their descriptions see [Appendix 2: Primary Metrics](#).

Alignment with Reporting Standards

In addition to our primary metrics, we have aligned our sustainability reporting with several industry standards to provide maximum transparency and to give our customers and investors the accurate comparisons. These metrics mainly appear in [Appendix 3: Standardized Metrics](#).

Data Center Standards

Since we are a data center company, we follow industry-standard metrics developed by The Green Grid, such as Power Usage Effectiveness (PUE), Carbon Usage Effectiveness (CUE), and Water Usage Effectiveness (WUE Site & WUE Source). For more details about these metrics, please see the [Energy](#), [Climate Impact](#), and [Water](#) sections.

Sustainability Reporting Standards

In addition to the description in [Meeting Third-Party Standards](#) that covers TCFD, SASB, and GRI, we go beyond our primary metrics to report on additional standardized metrics and methods from GRESB (formerly known as Global Real Estate Sustainability Benchmark), CDP Climate and Water, S&P CSA (Dow Jones Sustainability Index), and the World Resource Institute Greenhouse Gas Reporting Protocol (WRI GHGP). Specific primary metrics are included throughout the body of the report (and detailed in [Appendix 2: Primary Metrics](#)), and the full list of standardized metrics is detailed in [Appendix 3: Standardized Metrics](#). The primary data in this report [has been assured](#) to a moderate level ("type 2") by ISOS Group, Inc.

Metrics and Targets Summary				
Primary Metrics	UOM	2021 Level	Target Level	Section
Carbon Usage Effectiveness (CUE)	kg CO ₂ /server kWh	0.31	Net zero carbon by 2040	Climate Impact
Building Carbon Intensity	MTCO ₂ e/ft ²	0.172	Net zero carbon by 2040	Climate Impact
Revenue Carbon Intensity	MTCO ₂ e/\$1M Revenue	535	Net zero carbon by 2040	Climate Impact
Carbon Emissions, Scope 1 + 2 (location-based)	MTCO ₂ e	1,109,582	Net zero carbon by 2040	Climate Impact
Carbon Emissions, Scope 1 + 2 (market-based)	MTCO ₂ e	645,620	Net zero carbon by 2040	Climate Impact
Carbon Emissions, Scope 3	MTCO ₂ e	159,711	Net zero carbon by 2040	Climate Impact
Facilities with Renewable Option	% of facilities with renewable option	100%	100%	Energy
Electricity Procured as Renewable	% of all electricity purchased	47%	100%	Energy
Facilities in Europe Powered by Renewable Energy	% of facilities	100%	100%	Energy
Net Positive Water Facilities in High-Stress Regions	# of facilities	4	10 (all currently in high-stress regions)	Water
New Data Centers with Water-Free Cooling	% of new facilities	N/A	100%	Building for Sustainability
Facilities with Improved Habitat	% of facilities	5%	100%	Biodiversity
Diverse Supply Chain Spend	% of Tier I U.S. spend	13.4%	20% by 2024	Supplier Diversity Initiative
Employee Injury Rate (Total Recordable Incident Rate)	Incidents/200,000 hours worked	0.88	0.82	Employee Occupational Safety
Employee Injury Severity Rate (Days Away, Restricted, or Transferred Duty)	DART incidents/200,000 hours worked	0.22	0.40	Employee Occupational Safety

Bringing ESG Together: Chandler

CyrusOne’s largest data center campus, Chandler, is located in the Phoenix metro area of Arizona. In the arid desert of the American southwest, water issues are a high priority, so we designed the facility with water-free cooling and prioritize water efficiency in everyday operations. In 2019, we went further when we selected Chandler to become our first *net positive water* facility, a status we’ve maintained ever since in partnership with the Bonneville Environmental Foundation. These efforts around water also provide benefits to the community and local biodiversity, illustrating how ESG topics intersect and build on each other.



Climate Risk

We have conducted water risk, carbon pricing, and future flood risk assessments to understand this site and prepare for future conditions. See [Climate Risk](#)



Energy Optimization

Five of the Chandler buildings have been Energy Star certified, meaning they performed in the top 25% of energy efficiency in the data center sector. See [Energy](#)



Renewable Energy Procurement

We partnered with our power provider, SRP, to support development of a solar electricity plant, which currently supplies about 5% of the Chandler campus power. See [Energy Procurement](#)



Climate Impact

Renewable energy procurement and efficiency upgrades help us make strides toward our *net zero carbon* goal. See [Climate Impact](#)



Water-Free Cooling

In this *Extremely High* water stress region, we use no water for cooling. See [Water](#) and [Building for Sustainability](#)



Net Positive Water

Since 2019, we have restored 20% more water than we used to regional watersheds through BEF Water Restoration Credits®. See [Water](#) and [Biodiversity](#)



Recycling

We provide onsite cardboard and mixed office recycling to support our customers as they move into our facility. Also, scrap metal is recycled by our vendors, and our spent UPS batteries (replaced every 5 years) are recycled by our battery servicing company. See [Circular Economy](#)



Biodiversity

We support water restoration in the San Pedro River basin to maintain sufficient water flows for the benefit of local wildlife. See [Biodiversity](#)



Safety

In 2021, CyrusOne employees at this facility had no OSHA recordable injuries. See [Employee Occupational Safety](#)



Employment

This site supports 90 full-time employee and contractor positions, such as installation support, facility maintenance, and security teams. See [Responsibility to Our Employees](#)



Community

We engage with our neighbors for all issues brought to us, and donated to local schools and the *Change the Course* campaign to protect the Colorado River. See [Responsibility to Our Communities](#)



Corporate Governance

Corporate Governance*

CyrusOne is committed to institutional integrity and ethics throughout our organization. We ensure the highest standards of business conduct through a variety of proven methods.

ESG Governance

The management and execution of environmental, social, and governance initiatives occur at several levels in our company, as summarized by the graphic below and detailed in the following sections.



Board Oversight

One of the key functions of our Board of Directors (the “Board”) is the independent and informed oversight of our strategy and enterprise risk management, which includes environmental, social, and governance topics. The Board administers this oversight function directly with support from other standing committees of the Board, each of which oversees strategy and risks specific to its respective area of responsibility:

- **Nominating and Corporate Governance Committee:** Monitors the effectiveness and compliance of our corporate governance policies, including our Code of Business Conduct & Ethics; periodically reviews the Board’s structure, composition, and diversity; develops a process for evaluating the performance of the Board; recommends Director candidates to the Board; reviews Board Education; evaluates Board composition, diversity, and refreshment; and oversees the Company’s ESG strategy, practices, and policies. See the [committee charter](#).
- **Audit Committee:** Oversees our major financial and regulatory risks, including cybersecurity and ESG, and the steps our management has taken to identify, assess, monitor, and mitigate these exposures. This includes the process by which risk assessment and management are undertaken. The Audit Committee also oversees and monitors management’s compliance with the Company’s Code of Business Conduct and Ethics and the Company’s Ethics and Compliance Helpline. See the [committee charter](#).
- **Compensation Committee:** Oversees management performance, succession planning, and compensation; sets goals; and evaluates performance under our annual and long-term compensation plans. The Compensation Committee also oversees the Company’s workforce diversity, equity, and inclusion practices and policies. See the [committee charter](#).

Senior Management Direction

The Senior Management Team sets the strategic direction for the whole company. For topics related to operations within the company, the operations management team has a lead role in most decisions regarding energy, water efficiency, and sourcing.

*Corporate Governance information is accurate as of 12/31/2021 when CyrusOne was registered as a public company.

Cross-functional Integration and Coordination

Our Sustainability Working Group (“SWG”) was established in 2019 to integrate sustainability and ESG strategy and planning into each function at the company, to coordinate cross-functionality, and to develop metrics and measure progress. The SWG is co-chaired by our EVP, General Counsel, and our Senior Director of Environmental, Health, Safety, & Sustainability, and its membership consists of the leaders of functions across the company, including those depicted below. Updates on the SWG’s activities are provided to the Board of Directors quarterly and the Senior Management Team monthly.

We take an integrated approach to embedding sustainability in foundational decision-making by working across departments and sharing best practices. This allows us to manage risks and create opportunities across the company rather than restricting sustainability functions to a single department.



Sustainability is a mindset, and you have to have it as a backdrop to the business decisions you make.”

ROBERT JACKSON

Executive Vice President, General Counsel, and Secretary
Dallas, Texas

Talent Spotlight

Weaving ESG into our DNA

The backbone of CyrusOne’s ESG program is the Sustainability Working Group, a committee of leaders from across the company who meet monthly to discuss sustainability strategy, priorities, and progress. The committee’s executive sponsor, Robert Jackson, has been proud to see the SWG’s impact grow over the past few years.

“To me, ESG develops engagement and creates buy-in across functions. This encourages people to work together, giving them the support and resources they need to further their goals,” he said. “As an executive, I get excited about learning from the people who are at the center of our business and know where the problems are, where the opportunities are, and how to make a difference.”

The company is blessed with people who truly care about ESG. “We’ve done a nice job nurturing everybody’s natural desire to do the right thing,” he added. “We know we have the support of all the relevant stakeholders. Progress on sustainability makes good business sense, and our customers are asking for it.”

ESG Strategy

Across Environmental, Social, and Governance topics, we have conducted a materiality analysis and established priorities. We have identified environmental topics as having the greatest impact on our industry based on guidance from the Sustainability Accounting Standards Board (SASB) and our own assessments. Accordingly, we have done the most development on our programs that reduce our environmental impact while continuing to address social and governance topics. Please see our environmental and social vision statements along with our priorities and materiality for all three ESG topics below.

Environmental Vision Statement

At CyrusOne, we recognize that building and operating large data centers leads to a geographic concentration of environmental impacts, even if the total impact is reduced compared to inefficiencies of smaller data rooms. Being a leader in this industry means embracing our responsibility for reducing those impacts.

We approach our sustainability mission in three ways:

- 1. Sustainable Future:** We build data centers that are compatible with a sustainable future. We cannot just build a data center to meet today's challenges; we need to build it with the future in mind.
- 2. Energy and Water Conservation:** We are committed to conserving both energy and water through the effective design, maintenance, and operation of our facilities. We cannot just trade water for energy and ignore its impact.
- 3. Strategic Partners:** We collaborate strategically with our customers to move their sustainability goals forward. Our customers have some of the most ambitious sustainability goals of any industry, so the best thing we can do for the environment is to help them succeed.

Social Vision Statement

We recognize that we have an opportunity make a positive impact for our employees, our community members, our suppliers, and our customers.

We approach our social sustainability mission in three ways:

- 1. Inclusive and Equitable Future:** We work to create a world that's inclusive to all and where everyone has the opportunity to succeed.

This includes a commitment to diversity and equity across all aspects of our business, as well as training and development opportunities to help our employees and community members reach their full potential.

- 2. Safety and Fairness Across the Value Chain:** We are committed to promoting safe and fair working conditions across our value chain, including suppliers, construction, operational contractors, employees, and our communities.
- 3. Strategic Partners:** We collaborate strategically with our customers to move their social responsibility goals forward. Our customers have some of the most ambitious social sustainability goals of any industry, so the best thing we can do to make a positive impact is to help them succeed.

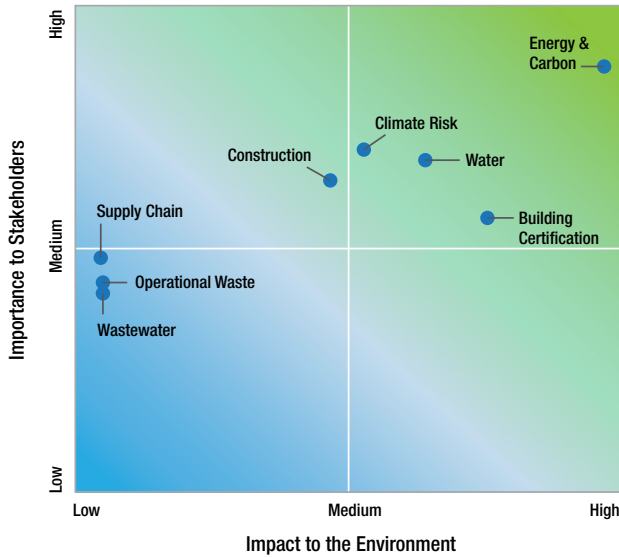
Priorities and Materiality

Priorities for strategy and materiality for sustainability reporting are intrinsically related. We use a unified process to identify where we have the biggest sustainability impacts and where we should therefore focus our improvements. ESG covers many different topics, so it was important to identify which topics are necessary for us to report and which issues to set aside. To make this distinction, we conducted a materiality assessment based on GRI guidance.

Our Environmental Materiality Assessment was conducted in preparation for the 2020 report. The materiality assessment on Social and Governance topics was last conducted for the 2021 report. Details of the methodology for that assessment can be found in [Appendix 1: Methodology](#).

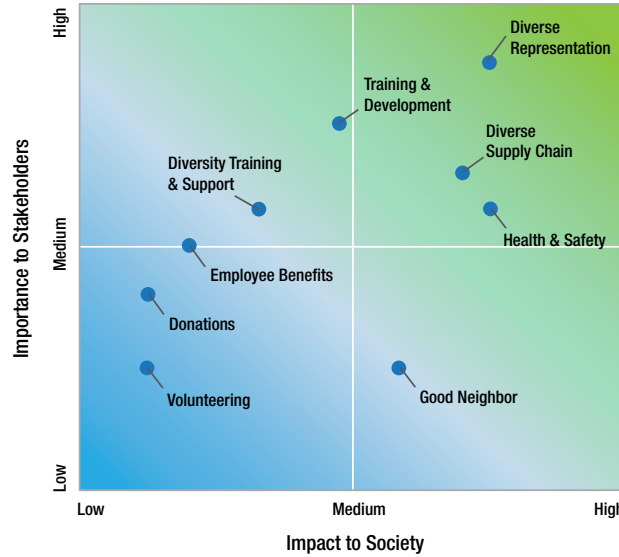
We rated Environmental, Social, and Governance topics on two scales: **Impact** on society or the environment and **Importance** to stakeholders. Combining Impact and Importance gives us the following heat maps of Environmental, Social, and Governance topics, with topics in the top right (green) requiring the most attention and topics in the bottom left (blue) needing the least. The guidance for our sector from SASB (Real Estate) suggests a focus on environmental topics as a primary concern, but we also display social and governance topics on their own scales as well. Discussion of reasoning for each topic is listed below in the sections [What's In and Why](#) and [What's Out and Why](#).

Environmental Materiality



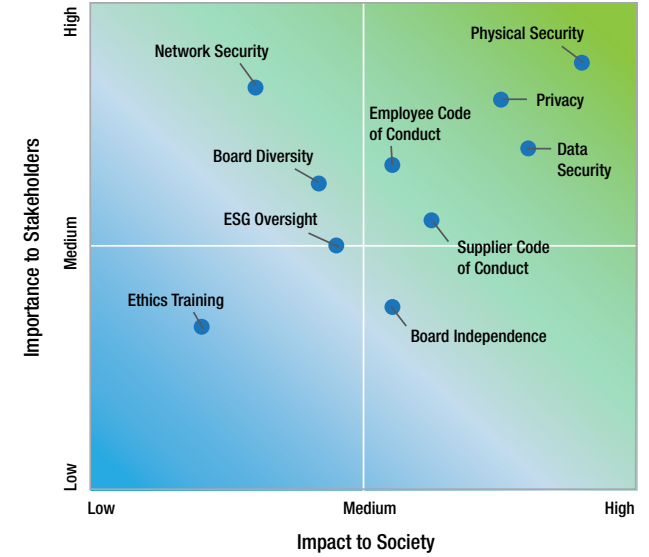
This remains unchanged from last year, with **Energy & Carbon**, **Climate Risk**, **Water**, and **Building Certification** in the high priority quadrant, followed closely by **Construction**.

Social Materiality



This remains unchanged from last year, with topics relating to **Diversity & Inclusion** and **Health & Safety** deemed the highest priority for Social materiality, both regarding impact on society and stakeholder priority. **Volunteering** and **Donations** were judged to be the lowest priority for reporting. **Employee Training & Education** and **Diversity Training & Support** are perceived to have higher importance to stakeholders than impact on society (due to our small population of teammates), while **Good Neighbor** practices are judged to have more social impact but have not been communicated as a priority by stakeholders.

Governance Materiality



This remains unchanged from last year, with topics relating to **Cybersecurity** and **Codes of Conduct** deemed the highest priority for Governance materiality, both regarding impact on governance and stakeholder priority. **Ethics Training** was judged to be the lowest priority for reporting. **Board Diversity** and **Network Security** are perceived to have higher importance to stakeholders than impact on society (due to lack of logical access to customer data), while **Board Independence** is judged to have more social impact but has not been communicated as a priority by stakeholders.

What's In and Why

Below, we give some additional context for what we have identified as material for our reporting.

Materiality Assessment	
What's In	Why?
Environmental	
<i>Energy Consumption and Carbon Emissions</i>	Our single largest impact is energy consumption and the carbon emissions associated with many forms of energy.
<i>Water Consumption and Risk</i>	Increased water stress is an expected consequence of climate change over the next decade in many regions where we operate, and data centers can have a high water risk exposure if dependent on water for cooling.
<i>Building Certifications</i>	In addition to constructing and operating efficient buildings, some stakeholders also value 3rd party certification of these building features (LEED, BREEAM, Energy Star, Green Globes, etc.).
<i>Construction and Site Selection</i>	We have a responsibility to select sites for new facilities where environmental impacts can be minimized and to proactively manage impacts during construction, including recycling and circular economy strategies.
<i>Climate Risk Planning</i>	As a company that prizes resilience and uptime, it is important for us to anticipate and mitigate potential risks to our business from climate change.
Social	
Diversity & Inclusion	
<i>Diverse Representation</i>	Improving the diversity of our company (teammates, managers, executives, and Board) is our highest priority internal social issue.
<i>Diverse Supply Chain</i>	Since we are a relatively small company with only about 450 teammates, increasing the diversity of our supply chain offers an opportunity for greater social impact.
Health & Wellness	
<i>Health and Safety</i>	The health and safety of our teammates and contractors are of high concern, especially with the risks inherent in the construction aspect of our business.
<i>Training, Education, and Benefits</i>	These factors contribute to our teammates' contributions to our work, as well as their overall well-being and quality of life.
Community	
<i>Community investment and engagement</i>	We have a responsibility to make a positive impact in the communities where we operate and to be a good neighbor.

Governance	
Cybersecurity	
<i>Physical Security, Data Security, and Privacy</i>	It is critical that CyrusOne maintains secure facilities and protects our customers' infrastructure and data about our customers.
<i>Network Security</i>	We generally do not have logical access to – and our systems do not connect with – our colocation customers' IT equipment.* Rather, our colocation customers control and operate their own servers. For this reason, network security is primarily a concern for our headquarters and support functions, not our customers' server data.
Ethics	
<i>Business Code of Conduct</i>	Our business code and ethics require ethical and equitable operations, which is very important to our stakeholders.
<i>Supplier Code of Conduct</i>	Our supplier code of conduct allows us to have a greater social impact by requiring ethical business practices in our supply chain.
Oversight	
<i>Board Diversity</i>	Our board is committed to reflecting a diverse representation of skills, perspectives, and backgrounds (including with respect to race, ethnicity, national origin, gender, and sexual orientation). We have two female directors, including the Chair of the Board, and our lead independent director is Black.
<i>Board Independence</i>	The structures and practices of our board and its committees are set up to maintain independent oversight of our company to represent long-term shareholder interests.
<i>ESG Oversight</i>	Our board and its committees have direct oversight of Environmental, Social, and Governance risk, strategy, practices, and policies through the mechanisms described under ESG Governance.

*The exception to this rule is our small, managed service business in a few data centers, which represents less than 2% of our gross revenue.

What's Out and Why

It is equally important to identify what we will not focus on in our reporting and to give context for why these topics play a minor role for CyrusOne's business.

Materiality Assessment	
What's Out	Why?
Environmental	
<i>Procurement and Supply Chain</i>	Since we do not process a steady stream of raw materials the way a manufacturer would, we will not focus on supply-chain environmental impacts (other than electricity generation, which is represented above under Energy Consumption and Carbon Emissions). Supply-chain Social Responsibility issues are represented by the <i>External Diversity</i> and <i>Health & Safety</i> topics.
<i>Solid Waste Generation</i>	Our facilities do not generate significant waste during operation other than lead-acid batteries, which we will continue to manage responsibly and evaluate for alternatives. Construction waste will be considered under <i>Construction and Site Selection</i> .
<i>Wastewater Generation</i>	With our strategy of utilizing water-consumption-free cooling designs, most of our facilities do not generate industrial wastewater in the same way that facilities with evaporative cooling do.
Social	
<i>Donations</i>	While we will continue our corporate giving programs, particularly during crises like the pandemic, our structure as a REIT places limitations on our ability to donate in significant amounts, so our ability to make an impact is limited.
<i>Volunteering</i>	While we will continue to support our teammate volunteering programs, our relatively small headcount for a company of our revenue means that the total impact we can have through volunteering is limited.
Governance	
<i>Ethics Training</i>	While we train on ethics annually and we see ethics training as a first step, we recognize that it is only part of an overall system of guidelines, resources, and checks and balances to support ethical behavior in our organization.

Future Evaluation

We will update our materiality for next year's report and continue to update materiality for all topics every three years.



Phoenix-Chandler (Arizona)



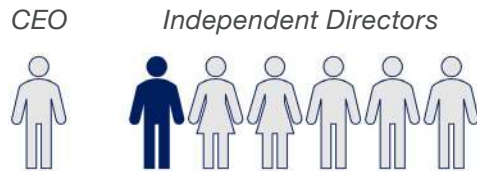
Santa Clara I (California)

Ownership and Oversight

Board Performance

Our Board of Directors consists of seven directors, six of whom are independent (all except Mr. Ferdman, our President and CEO). Furthermore, the independent directors have no direct ties to one another, management, or the company, aside from their role on the Board and their stock ownership per our stock ownership guidelines, which promotes alignment with our stockholders. The positions of CEO and Board Chair are separate and our Board Chair is an independent director, which further promotes the Board’s independent oversight of management.

Just like the rest of CyrusOne, the diversity of the Board is also a priority – 43% of our directors are women or of an ethnic/racial minority, including the Board Chair and the Lead Independent Director. In addition, each of the Board’s standing committees has diverse representation. The Board is committed to actively seeking out additional highly qualified women and minority candidates. We also invest in ongoing director education and annual Board and committee self-evaluations. The following image represents the state of the board as of December 31, 2021.



Executive Compensation

The Compensation Committee is responsible for CyrusOne’s executive compensation philosophy and policies, as well as the annual and long-term executive compensation program that flows from them. Our long-term success depends on our ability to attract, motivate, focus, and retain highly talented individuals who are committed to our vision and strategy. A key objective of our executive compensation program is to create an ownership culture that aligns pay with performance and overall stockholder value creation.

Our compensation philosophy is to incentivize thoughtful capital allocation and value creation for our stockholders by using competitive pay packages to attract and retain talented executives. These pay packages are intended to (1) cultivate an ownership culture; (2) align the compensation for our executive officers with sustainable, consistent, balanced growth; and (3) achieve specific short- and long-term goals set by the Compensation Committee.

Sustainability-linked Executive Compensation

We use a combination of compensation programs to incentivize our executive officers to achieve growth and value creation over the short and long term. A portion of our compensation program is tied to completion of sustainability initiatives. This collection of priority projects and metrics is intended to supplement and drive progress towards sustainability – an important area of interest for our stockholders.

Financial Audit

Management is responsible for the preparation of CyrusOne’s financial statements and the financial reporting process. This process includes implementing, maintaining, assessing, and reporting on effective internal control over financial reporting.

The Audit Committee – pursuant to its [Charter](#) – oversees the Company’s financial reporting process on behalf of the Board of Directors. All members of the Audit Committee are independent under applicable US Securities and Exchange Commission (SEC) rules and Nasdaq listing standards related to service on audit committees. All three members of the Audit Committee are audit committee financial experts as defined by SEC rules.

The Audit Committee is responsible for the appointment, compensation, and oversight of our independent auditor and ensuring their independence by limiting non-audit services from the firm. In fulfilling its oversight responsibilities, the Audit Committee, management, and the auditor reviewed the audited financial statements for the year ended December 31, 2021, contained in CyrusOne’s Annual Report on Form 10-K for the year ended December 31, 2021. They also discussed the quality, not just the acceptability, of the accounting principles, the reasonableness of significant judgments, and the clarity of disclosures in the financial statements, and expressed an unqualified opinion on the Company’s financial statements and internal controls.

In reliance on the reviews and discussions referred to above, prior to the filing of the Company’s Annual Report on Form 10-K for the year ended December 31, 2021, with the SEC, the Audit Committee recommended to the Board of Directors (and the Board approved) that the audited financial statements be included in such Annual Report for filing with the SEC.

CyrusOne is proud to have had no late filings, incidents, or investigations, no material weaknesses, and no recent restatements. For more information, see our 2021 [Annual Report](#).

Ownership

CyrusOne believes that Directors should be stockholders and have a financial stake in the Company. Each non-employee Director is required to own shares of the Company's common stock worth at least 5x the cash portion of the annual base retainer. The Chief Executive Officer is required to own shares of the Company's common stock worth at least 6x his or her base salary. Each of the Company's other Named Executive Officers (as defined in the Company's proxy statement from year to year) is required to own shares of the Company's common stock worth at least 1.5x his or her base salary. All such individuals who are elected or appointed will have five years from the time they are elected or appointed to meet the minimum ownership requirements.

As of December 31, 2021, each of our non-employee directors and named executive officers has met the minimum requirements for stock ownership (taking into account any grace period as applicable). Directors and officers are also covered by our written policy that prohibits hedging and pledging of Company securities.

Compensation paid to our non-employee directors and our Named Executive Officers is disclosed and available [here](#).

Ethics

Our governance practices to promote ethical business conduct are focused on four different programs:

1. Board Structure
2. Employee Ethics
3. Anti-Corruption
4. Antitrust

These programs, together, seek to avoid improper behavior or the appearance of improper behavior across our company.

Board Structure

The structure of our Board of Directors is designed to support the interest of shareholders and other stakeholders, including ethical business conduct:

- The Board of Directors is not classified; instead, each of our directors is subject to nomination and election annually.
- All seven of our current directors (other than Mr. Ferdman, our CEO)

are "independent" according to the meaning of the Nasdaq listing standards.

- The Board has separated the positions of Chair and CEO with an independent director serving as Chair (as well as a Lead Independent Director).
- Our independent directors meet regularly in executive sessions without the presence of management.
- The three standing committees of the Board consist entirely of independent directors, and each of the members of the Audit Committee and the Compensation Committee meets the applicable heightened independence standards of the federal securities laws and Nasdaq listing standards for service on those committees.

Code of Business Conduct & Ethics

We are committed to the highest ethical standards in the conduct of our business; therefore, the integrity of each employee, officer, and director is of paramount importance. All employees, officers, and directors are accountable for their actions and must conduct themselves with the utmost integrity. As part of conducting business ethically, employees, officers, and directors must conduct business in strict observance of all applicable federal, state, and local laws and regulations as set forth by those bodies that regulate the company's business and those that regulate public companies, such as the Securities and Exchange Commission. Persons who act unethically or violate the company's [Code of Business Conduct & Ethics](#) and supplementing written policies may be subject to disciplinary action, up to and including termination or removal, and, if applicable, referral to the appropriate authorities for prosecution. CyrusOne hosts annual training for our employees regarding our Code of Business Conduct & Ethics and provides resources to support compliance.

We are committed to establishing and maintaining an effective process for employees, officers, and directors to report – and for the company to respond to and correct – any type of misconduct or unethical behavior. Each employee, officer, and director has a duty to report any known or suspected violation of the Code of Business Conduct & Ethics, including any violation of the laws, rules, regulations, or policies that apply to the Company. We make it easy for our employees to report any suspected violations, including raising the concern with their manager or with any member of the Human Resources department, the legal department, or the executive leadership team. We maintain additional methods for reporting concerns or seeking guidance about known or suspected violations of the Code of Business Conduct & Ethics or any applicable law or Company policy, including an Ethics &

Compliance Helpline. The Helpline allows for confidential and anonymous reporting of concerns in the United States and elsewhere as permitted under local law. All reports of known or suspected violations are handled sensitively and with discretion. We also prohibit retaliation against an employee who, in good faith, seeks help or reports known or suspected violations.

Anti-Corruption Policy and Program

Our anti-corruption and anti-bribery prohibition is simple – no teammate may:

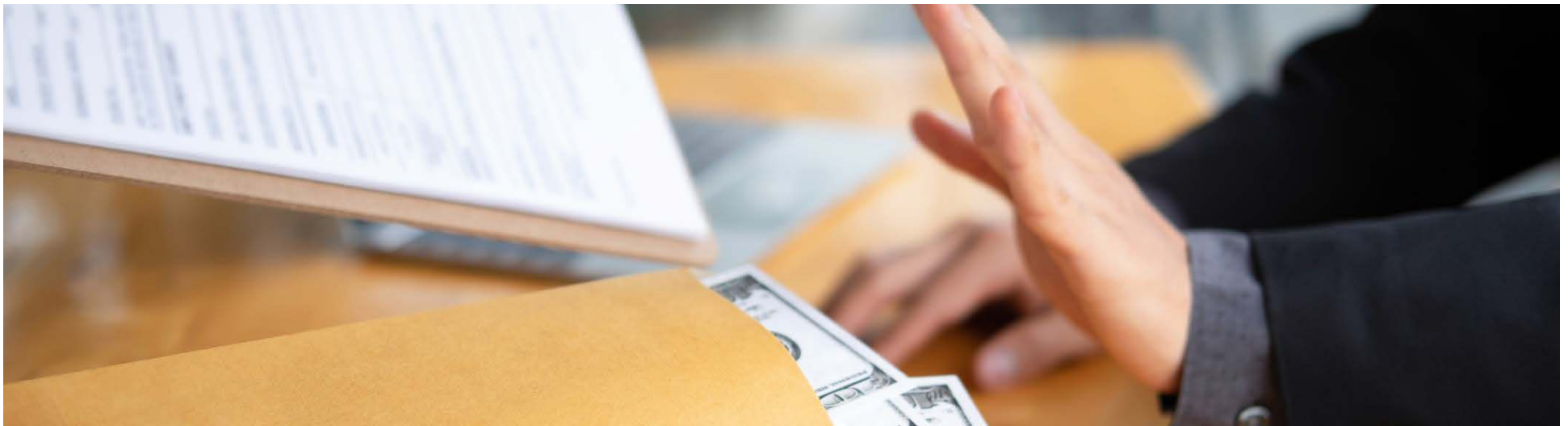
1. Give or offer any payment, gift, hospitality or other benefit in the expectation that a business advantage will be received in return, or to reward any business received;
2. Accept any offer from a third party that you know or suspect is made with the expectation that we will provide a business advantage for them or anyone else;
3. Give or offer any payment (sometimes called a facilitation payment) to a government official in any country to facilitate or speed up a routine or necessary procedure; or
4. Threaten or retaliate against another person who has refused to offer or accept a bribe or who has raised concerns about possible bribery or corruption.

We maintain an Anti-Corruption and Anti-Bribery Policy, which details the prohibitions and requirements for dealing with government officials, including employees of government agencies and state-owned entities. Due diligence

must be conducted when hiring and doing business abroad with third-party agents, and any expenditures involving government officials must be pre-approved per the Anti-Corruption and Anti-Bribery Policy. Employees who observe any “red flags” that indicate potential corruption must report them to the General Counsel or the Ethics & Compliance Helpline. CyrusOne is committed to complying with anti-corruption and anti-bribery laws wherever it does business.

Antitrust Incident Prevention

Antitrust laws (also known as competition laws or fair-trade laws) of the US, the EU, and other countries are designed to protect consumers and competitors against unfair business practices and to promote and preserve competition. Our policy is to compete vigorously and ethically while complying with all antitrust, monopoly, competition, and cartel laws in all countries, states, and localities in which the Company conducts business. Our employees are advised to exercise caution in meetings with competitors since any meeting with a competitor may give rise to competition law concerns. Thus, we require that our employees obtain prior approval from the General Counsel if they need to meet with a competitor for any reason. The contents of the meeting should be fully documented. Whenever any doubt exists as to the legality of a particular action or arrangement, employees are encouraged to contact the General Counsel. As of December 31, 2021, CyrusOne was not under investigation for any antitrust actions.



Transparency

ESG Reporting

This is our third annual sustainability report, which is our primary method of reporting ESG topics. We treat transparency as our guiding principle in an attempt to honestly analyze our sustainability programs and report the areas that need improvement along with our successes. For instance, we promote the water-saving cooling we use at many facilities, hoping to inspire others in our industry to think seriously about water consumption. However, we also disclose the number of facilities in our portfolio that still consume large amounts of water.

We are methodical about both the content and structure of our report, which is designed to provide disclosure that is compatible with several third-party standards, as discussed in the [Introduction](#).

Our transparency efforts extend to several new sections on our website:

- The [Environmental Sustainability](#) page presents an in-depth discussion of our corporate strategies regarding sustainable design, conservation of water and energy, and strategic sustainability partnerships.
- Our [Social Responsibility](#) and [Corporate Governance](#) pages outline our commitment to diversity, inclusion, ethics, and integrity within CyrusOne and the surrounding communities.
- To facilitate clear disclosure, we created an [Investor ESG](#) page where we post documentation to improve our transparency.

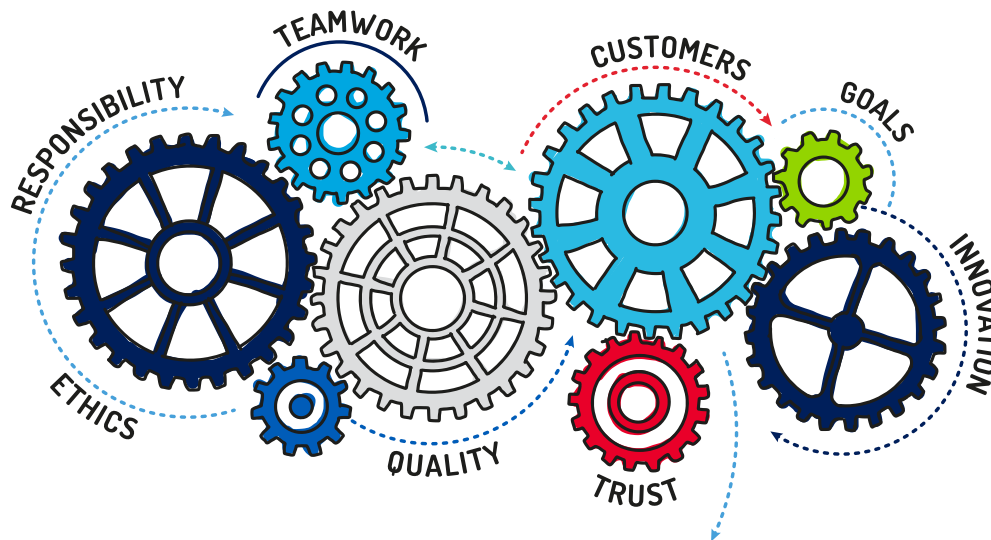
To assist our customers with their environmental disclosure process, we also added sustainability profiles to the webpage for each of our [US-based facilities](#). These profiles include:

- Analysis of regional water stress and the facility's water use
- Regional grid greenhouse gas emissions factors and renewable percentages
- Any applicable certifications for the facility (Energy Star, LEED, etc.)
- Other sustainability highlights particular to the facility

After the publication of our 2021 Sustainability Report and website updates, we saw significant improvement in our scores on investor ratings that rely on publicly available information (ISS Quality, MSCI, Sustainalytics, etc.), providing concrete evidence of the quality of disclosure. Additionally, this year, we completed the following investor surveys: GRESB, DJSI (Dow Jones Sustainability Indices), CDP Climate, & CDP Water.

This year, for the first time, we have pursued third-party assurance of our primary environmental and social data. The assurance statement can be found in [Appendix 3](#), and assured data is marked throughout the report with a red stamp.

We will continue this commitment to transparency in the coming years as we work toward our sustainability goals.













Political Advocacy

CyrusOne does not engage in lobbying to directly influence policy. We do participate in industry trade associations that may engage in policy influence. We review the policy positions of these trade associations for consistency with our policy aims through high-level participation in working committees

related to social and environmental topics. If we discover an inconsistency, we attempt to influence the organization to align its position with ours.

CyrusOne is a member of the following industry groups:

<p>Data Center Coalition (DCC). The DCC represents and advances the interests of the data center community and advocates for a strong business climate, policies, and investments that support the growth and success of this business sector. CyrusOne serves on the board of directors of the DCC.</p>		<p>German Datacenter Association (GDA). The GDA represents its members—operators and owners of data centers of all sizes—in relation to laws, regulations, standards, norms and political issues. In the long term, the group seeks to sustainably improve the framework conditions for operating data centers in Germany</p>	
<p>The Data Centre Trade Association (DCA). The DCA is a not-for-profit trade association comprising leaders and experts from across the data center sector.</p>		<p>Host In Ireland (HII). Established in 2014, HII works to inform global decision-makers within the technology and data industries about Ireland’s data hosting caliber and capabilities.</p>	
<p>Dutch Data Center Association (DDA). The Dutch Data Center Association unites leading data centers in the Netherlands in a common mission: the strengthening of economic growth and the profiling of the data center sector to government, media, and society.</p>		<p>Infrastructure Masons (iMasons). iMasons was established to provide infrastructure executives and technical professionals an independent forum to connect, grow, and give back.</p>	
<p>European Data Centre Association (EUDCA). EUDCA developed the Climate Neutral Data Centre Pact (CNDP), which creates binding terms for members to adopt a target to become climate neutral by 2030 with required annual reporting of progress. CyrusOne serves on the board of EUDCA and is a founding member of the Pact.</p>		<p>National Association of Real Estate Investment Trusts (Nareit). Nareit serves as the worldwide representative voice for REITs and real estate companies with an interest in US real estate. Nareit’s members are REITs and other real estate companies throughout the world that own, operate, and finance income-producing real estate, as well as those firms and individuals who advise, study, and service those businesses.</p>	
<p>France Datacenter Association. France Datacenter promotes the sector as a pillar of the digital economy with public authorities. The group disseminates best practices between professionals and promotes the reliability and performance of the sector in the media.</p>		<p>techUK. With over 800 members across the UK, techUK creates a network for innovation and collaboration across business, government, and stakeholders to provide a better future for people, society, the economy, and the planet.</p>	

Enterprise Risk Management

Role of the Board in Risk Oversight

One of the key functions of the Board of Directors is oversight of our enterprise risk management process with support from other standing committees of the Board, each of which addresses risks specific to its respective areas of oversight.

The Audit Committee, particularly, has the responsibility to consider and discuss our major financial and regulatory risk exposures (including cybersecurity and ESG) and the steps our management has taken to identify, assess, monitor, and mitigate these exposures, including the process by which risk assessment and management is undertaken. The Audit Committee also reviews and evaluates the performance of our internal audit

function, the system of internal controls, and the results of internal audits, as well as oversees and monitors compliance with the Company's policy on related party transactions, our executives' compliance with the company's Code of Business Conduct and Ethics, and the Company's Ethics and Compliance Reporting Helpline.

The Compensation Committee oversees succession planning for our executive officers and assesses and monitors whether any of our compensation policies or programs have the potential to encourage excessive risk-taking.

The Nominating and Corporate Governance Committee monitors the effectiveness of our corporate governance guidelines, the company's compliance with applicable corporate governance requirements, and the company's corporate social responsibility policies and practices.



Data Protection and Information Security

CyrusOne recognizes the critical importance of data protection, information security, and privacy for our employees, customers, and our business. Our commitments in this area are a foundational pillar of brand trust and, increasingly, a source of competitive advantage in an era of accelerated innovation, global data proliferation, and fast-changing regulatory frameworks.

We take a three-tiered approach to our program by: 1) Developing a comprehensive understanding of the landscape of data we must protect; 2) Employing multiple layers of protection; and 3) Establishing a hierarchy of controls to minimize exposure to risk from the outset whenever possible.

Data Protection

Having a holistic view of the data we must protect is just as important as putting measures in place to protect it. Our efforts break down into four major categories:

- 1. Privacy of Our Customers and Employees:** Our privacy policies and standards have been developed to keep personal data safe, to respect privacy, and to maintain the confidence of our customers, employees, and partners at all levels. Our [Privacy Policy](#) describes our practices as well as the rights individuals have to request information about their personal information. We also have [policies and standards](#) to keep CyrusOne in good standing with the EU General Data Protection Regulation (GDPR).

We provide training to ensure our employees understand how to respect and protect privacy. Training topics include HIPAA Privacy and Security, Protecting Personal Information, Global Data Protection, and the ISO 27001 International Standard for Information Security Systems, among others.
- 2. Operational Technology:** We protect the function and data recorded as a function of our operational technologies such as our Building Management Systems and Emergency Power Systems.
- 3. Business Data:** We protect the data generated during the course of normal business, such as personnel records, accounting and invoicing records, and sales information.
- 4. Customer Server Data:** As mentioned in [Priorities and Materiality](#), we do not have logical access to customers' data that is housed in our data centers, save for our small managed service business in a few data centers, which represents less than 2% of our gross revenue. So our exposure to risk from customer server data is very limited.

In 2021, we completed a comprehensive process to document the specific instances of personal private information we capture across the organization and how long that data is stored.

Information Security

Information Security is defined as the protection of data and its critical elements, including the systems and hardware that store, process, and transmit that information. The physical security of our facilities, cybersecurity, and network security are important components of information security and guide our strategy.

Physical Security

The protection of our facilities and physical assets is essential to maintain the trust and confidence of our customers. At CyrusOne, we employ seven layers of security protocols at our data center facilities.

1. Facilities are surrounded by anti-scale, high-security fencing.
2. Outer perimeter areas, such as parking lots, are monitored with closed-circuit cameras.
3. The outside of buildings is monitored with closed-circuit cameras.
4. Lobby areas are guarded by security guards at all times, as well as monitored by closed-circuit cameras; dual authentication is required for access beyond all lobby areas.
5. The inner core of the facility is monitored by closed-circuit cameras and employs strict access controls.
6. Data halls are monitored by closed-circuit cameras and employ strict access controls.
7. Customers may customize security protocols for entrance to their cage.

In 2021, we have taken significant steps to ensure consistency in our physical security standards across all of our facilities, both in the US and Europe. In addition, we upgraded our Global Security Platform at almost all of our facilities, with plans to complete the remaining upgrades in 2022. We have also implemented enhanced training programs for our employees on topics such as Emergency Response Planning, Customer Service Standards and Expectations, and Safety Standards and Compliance. To learn more about the measures we take to ensure the physical security of our facilities, see our web page on [Physical Security](#).

Cybersecurity

We have a Cybersecurity Program with a dedicated internal team coupled with specialized 24/7 security services partners. The team actively monitors and responds to potential threats. Our control framework is based on the NIST Cybersecurity Framework and enables us to manage cybersecurity-related risks. These controls have been designed to collectively ensure data confidentiality, integrity, and availability at CyrusOne. We also perform annual third-party audits including Penetration Testing and Vulnerability Analysis to benchmark our maturity, and our senior management team provides quarterly updates to the Audit Committee and Board of Directors on cybersecurity.

In 2021 we engaged a third party to conduct a Cybersecurity Maturity Model Certification (CMMC) Assessment. Results from the Assessment showed CyrusOne maintains an overall well-defined, mature set of cybersecurity processes and practices, scoring at a high level for multiple domains, including asset management, incident response, media and physical protection, personnel protection, and risk management. In addition, we made significant progress against several of our cybersecurity roadmap objectives including implementation of a threat intelligence platform and doubling the number of penetration tests to our systems.

Employees are key to the success of our cybersecurity strategy. All employees and contractors undergo annual mandatory Information Security Awareness Training on how to identify and avoid potential security risks by keeping data, devices, and networks secure. In addition, we conduct continuous simulated phishing campaigns, as well as communication for awareness of social engineering tactics. This past year, we launched a new training program based on real-world attacks and designed to give employees immediate feedback and training materials. We aim to provide protections across all our operations while continuing to build confidence with our customers, employees, and partners.



One of the first things customers ask is, ‘What do you have for us for security and how can we ensure you’re going to live up to that?’

DANA HERRICK
Director of Global Security Operations
Aurora, Illinois

Talent Spotlight

Creating an Atmosphere of Vigilance

When it comes to physical security for CyrusOne’s 56 data centers around the world, consistency is key, according to Director of Global Security Operations, Dana Herrick. “Having one process makes everyone’s life easier, whether you’re an employee or a customer,” Herrick said. “If we operate in different silos, it becomes confusing and too hard to manage.”

Herrick oversees a department that must handle many moving parts to make sure everything works in tandem to maintain a secure environment. It’s about creating an atmosphere of vigilance. “Security is usually your first impression when you come into a building,” Herrick said.

Security is crucial for us because it’s crucial for our customers. “Our CEO always says, ‘Power and security are our two most important things,’” she continued. “One of the first things customers ask is, ‘What do you have for us for security and how can we ensure you’re going to live up to that?’”

“It’s ever-evolving,” she said. CyrusOne lives up to those standards and expectations in part with the best technology and a constant effort to upgrade and improve. “We work on the back-end to make sure we’re not falling behind with the technology that we use,” Herrick said. “And we’re constantly communicating with vendors to find the best solution.”

In the end, physical security relies not only on the latest technology, but on consistent policies and communication. “It’s about making sure that everyone – customers, employees, contractors, and vendors – understands the operations and procedures that CyrusOne has put into play,” she said.

Network Security

CyrusOne seeks to proactively reduce the risks to electronic information resources through the implementation of controls designed to detect and prevent errors before they occur. Detrimental access to the CyrusOne network is defined as any intervention, from either an internal or external entity, that creates any situation whereby authentication and access control mechanisms are bypassed that may compromise the confidentiality or integrity of information resources or render them unavailable. CyrusOne proactively reviews physical and logical risks to information assets and takes action to mitigate these identified risks.

Hierarchy of Controls

When it comes to the protection of data and our physical technology assets, our belief is that we should minimize exposure to risk from the outset whenever possible. We have established a hierarchy of controls that help us minimize risk in four ways:

- 1. Minimize Collection:** We limit the sensitive information we collect to what is necessary, such as customer data for billing, site access, or security purposes.
- 2. Limit Retention:** We only retain the data that is necessary for our business operations.
- 3. Protect Retained Data:** The data we do retain is protected with security measures described above, such as encrypted transmission of data to third parties and strict access controls.
- 4. External Assurance:** Our facilities and operations are designed to comply with rigorous standards set by trade groups and certifying organizations. For more information, see our [Security Certifications and Audits web page](#).



We often have to spend a lot of late nights in cold data centers fixing problems that hackers try to create.”

AARON MCKEE
Director of Cybersecurity
Dallas, Texas

Talent Spotlight

Holding Down the Information Security Fort

In the world of cybersecurity, the threats are real, constant, growing and have the potential to grind the world to a halt. As a data center company that connects exponentially increasing amounts of data and information, much of which is proprietary and sensitive, information security is an issue CyrusOne considers paramount and one Director of Cybersecurity Aaron McKee takes personally.

“We don’t want to just say that we’re secure when the data is only 95.3% secure,” McKee said. “I can’t tell you that our data is secure if I don’t know how people are accessing it or where it’s stored. Going through our security process is always eye-opening, and I think in the last couple years we’ve grown by leaps and bounds, probably above a lot of our competitors.”

Communication is key. “Anytime data is accessed, you have to assume it’s being copied,” he said, “and you can’t assume the other places where it lives now are as secure as the one you painstakingly created. It’s out of your hands at that point, which is why it is critical that everyone understands the importance of information security.”

The information security effort never ends, but McKee takes pride in ensuring that CyrusOne customers can not only assume their data is secure, but they can truly believe it.

Business Continuity

CyrusOne regards business continuity at all times as a fundamental management priority, as our business depends on providing customers with a highly reliable data center environment. We approach our business continuity planning in four main ways:

- 1. Site selection:** We choose to build facilities in low-risk locations, design our buildings and systems for resilience, and build in redundancies, where needed.
- 2. Business Continuity Planning:** We develop Emergency Action Plans and Procedures for a range of event scenarios — as varied as natural disasters, power outages, or cyber-attacks — to ensure critical functions continue to operate in the face of a disruption or disaster. These plans are developed both at the companywide level and for each of our facilities. CyrusOne is ISO 22301 Certified and our planning adheres to ISO 22301 Business Continuity Framework standards.
- 3. Testing and training:** We regularly run tabletop exercises and incident drills at our facilities and within our IT environments to ensure our employees know what to do in different scenarios. In addition, we provide our employees with annual training on various aspects of emergency response planning.
- 4. Continual improvement:** Based on the outcomes of the drills and exercises we run with employees, we make adjustments and improvements to our Emergency Action Plans when needed.

In the event that an emergency situation does occur, CyrusOne has an Event Management System and Emergency Response Protocols designed to protect the safety and security of our employees, customers, and partners, and to minimize the risk to our business. We also prioritize customer communications at these times to ensure our customers are kept up to date on status and so they can activate their own business continuity planning, when needed.



Our goal is to make sure our customers always have access to the services that we provide.”

PAM COOPER
Operations, Governance, and Compliance Manager
Dallas, Texas

Talent Spotlight

Staying One Step Ahead of Disaster

Natural disasters are unpredictable, but our customers expect constant, uninterrupted service. That’s where Pam Cooper comes in. She and her team oversee business continuity and disaster recovery, constantly planning ahead, amending, and adapting emergency plans to keep our data centers operating smoothly when the world outside brings chaos.

Among the tools of the trade Cooper’s team employs are “tabletop” exercises that bring together leaders from across the company to test their responses to possible disaster scenarios.

“A few months before the pandemic hit, a tabletop exercise focusing on a loss of technology scenario revealed that many of our employees still worked primarily from desktop computers. Seeing a need for more mobility, we issued laptops to many staff in January 2020, leaving us a step ahead when the lockdown hit and forced many of us to work remotely.”

Then, in February 2021, Winter Storm Uri slammed Texas and again tested our resilience and planning. While some power issues cropped up due to the hard freeze rarely seen in the Lone Star State, we were able to adapt. We learned lessons that will help us stay up and running should another massive winter storm hit near any of our facilities.

Like the Wizard of Oz, Cooper and her team work their magic tirelessly behind a curtain, constantly planning, strategizing, testing, and adapting so CyrusOne employees and customers notice no changes in service when bad things happen. “I hope everyone can relax,” Cooper said. “My job is to make sure we are ready for anything that happens.”

Climate Risk

It is becoming more evident every year that companies must understand climate risk in order to achieve long-term success. No longer a far-off threat, the impacts of climate change are being felt worldwide in the form of increased storm intensity, devastating wildfires, and massive flooding. We cannot just continue as usual and expect to prosper — instead, we must learn to predict and prepare for future conditions.

At CyrusOne, we consider climate change in two ways. First, we evaluate how our activities impact the climate and contribute to climate change. We discuss these impacts and our ongoing efforts to reduce them in the [Climate Impact](#) section. Secondly, we think about how the changing climate might impact our business — in other words, our climate risk. We understand that even if we mitigate our climate impact by reducing carbon emissions to zero, we will still need to prepare for the potential effects of climate change.

CyrusOne's approach to understanding and addressing climate risk is multi-faceted. Below are the most salient risks we have identified and how we are working to mitigate them.

Risk Identification

CyrusOne takes several approaches for identifying climate-related risks:

- **Enterprise Risk Management:** Climate issues raised in the enterprise risk management process are delegated to senior management for action, such as further investigation using our [Climate Risk Management Tools](#).
- **Stakeholder Engagement:** Issues raised by our stakeholders, particularly customers and investors, highlight emerging risks and opportunities that inform our overall climate risk management and reporting capabilities.
- **Climate Risk Investigations:** We contract experts to perform initial climate risk investigations on our behalf. These investigations give us an idea of the scope of the issue as it applies to our operations. If the investigation finds significant risk, we commission a full Climate Risk Assessment, such as the ones detailed in [Climate Risk Management Tools](#).
- **Industry Engagement:** We engage with our peers through industry associations like Nareit, the Data Center Coalition, and the European Data Center Association (EUDCA) to identify climate-related risks that are specific to our industry.

Risks and Impacts

We have identified five main climate risks, detailed below with their impacts.

Transitional Risk: Regulatory Risk/Barriers to Operate

Laws, regulations, or public perception may limit our ability to develop new facilities in a particular region or restrict areas in which we wish to operate. We address the risk of new barriers to operation by anticipating local impacts from climate change and limiting the related local impacts of our facilities by design. Limiting our facilities' water demand and improving wildlife habitat in the areas where we operate will allow us to demonstrate benefits to local communities. Our **Environmental Impact Assessments** and **Protected Areas Assessments** help us to avoid barriers by identifying sensitive lands that affect the local community and slow project development. Our **Water Risk Assessment** helps us to understand the regional water risk of an area during site selection so we can minimize our impact on local water supplies, which are anticipated to be reduced by climate change in many places. For more information, see the [Water](#) and [Biodiversity](#) sections.

Transitional Risk: Cost to Operate

Global climate change and the adaptations required to mitigate it can increase operating expenses in various ways. We performed a detailed **Carbon Pricing Assessment** to evaluate the impact of potential carbon price increases, such as national carbon taxes and customer internal carbon prices. Unsurprisingly, we learned that our highest risk from carbon price increases comes from increased costs for carbon-intensive electricity. This analysis helps to inform our drive to improve efficiency and acquire renewable energy for all facilities, and it gives us a way to prioritize regions where the carbon emissions from grid electricity are highest.

Transitional Risk: Customer Preference

It is important to consider not only how climate risk affects our business but also how it impacts our customers. As the business environment changes along with the climate, our customers' preferences and incentives are also adjusting, which can impact the competitiveness of our product offering. For example, our **Carbon Pricing Assessment** gave us increased insight into how our customers' internal carbon prices and carbon reduction goals might affect their purchasing decisions. As companies prioritize climate change mitigation strategies, they will be looking for business partners who can help them achieve these goals. Through a dedication to transparency, we help our customers understand how our services support their sustainability targets. Through stakeholder engagement, our customers have also communicated

an increased focus on water conservation in recent years, so our **Water Risk Assessment** and ongoing commitment to water-consumption-free cooling align us well with this customer preference.

Physical Risk: Water Stress

Drought is one of the commonly predicted consequences of climate change. Increased water stress in areas where we operate may reduce our access to water for operations or increase friction with local communities. Facilities dependent on water for cooling may face operational interruptions or require costly retrofits to less water-intensive types of cooling.

To understand our exposure to water risk, we conduct an annual **Water Risk Assessment**, which is described in the [Water](#) section. We address the risk of increased water stress through our commitment to building new data centers that are not dependent on water for cooling. Furthermore, we have a target for our facilities in high water stress regions to become *net-positive* contributors of water to their local watersheds; this serves to reduce our exposure to water stress and improve the regions' water supplies. We believe that our aggressive stance on prioritizing water conservation will insulate us from significant risk of business disruption as water scarcity increases.

Physical Risk: Flooding

Climate change is predicted to increase the likelihood of flooding due to excessive rainfall events and sea-level rise. Shifts in weather patterns have demonstrated that flood risk maps based solely on historical data do not accurately predict future flood risk. Sea-level rise from climate change is predicted to cause flooding in regions near coasts and increase the range of impacts from severe coastal weather events like hurricanes.

To understand this risk, we have conducted a **Future Flood Risk Assessment** using a variety of tools to consider the effects of different climate change projections on the flood risk at our facilities. This allows us to anticipate any additional risk in the future to existing facilities and develop mitigation strategies when needed. This is also an opportunity to use more complete information about future risks to select sites for new facilities.

Opportunities and Impacts

Given the almost unthinkable scale of the challenges and loss related to climate change, it seems callous to refer to it as an opportunity. Instead, we strive to manage risk and seek ways to grow our business ethically in the face of climate change and other environmental challenges by providing solutions to the problems and helping to shape our industry for the better.

Increased digitization of work and materials is one path toward decreasing our collective environmental and climate impacts. As virtual meetings replace air travel and cloud document storage replaces file cabinets, there are true benefits for the environment. Data centers like ours assist in this transformation. Our goal is to reduce our own environmental and climate impacts so we can contribute to the transformation without creating additional issues.

Our strategy for this transformation includes:

- **A transition to renewable electricity:** Like our competitors, we recognize that our high electricity consumption is our primary climate impact and that the solution is to phase out the use of carbon-intensive electricity in favor of high-quality renewable options that are both *additional* and *regional*.
- **A focus on water conservation:** Unlike many in our industry, we strive to build data centers that do not rely on evaporating large amounts of water for cooling. Since climate change is likely to increase water scarcity in many places, this strategy will prevent us from contributing to water shortages in the communities and landscapes where we operate.
- **Innovation in backup generation:** To meet our *net zero carbon* target, we will have to address our diesel-fueled backup generators. We are investigating various innovative strategies to maintain uptime during electricity outages without burning fuels that contribute to climate change.

We believe that, by building our business in a way that provides solutions to global problems, we will appeal to our customers by helping them to meet their own sustainability goals. In doing so, we will ethically grow our business in the face of this collective global challenge.

Scenario Analysis and Resilience

Our tools use different climate scenarios to ensure that our strategy is resilient and adaptable to changing conditions. Overall, our targets are set to contribute to staying below 1.5°C warming and striving for the SSP1-1.9 scenario. When weighing climate risks, the specific scenarios considered in our tools include two climate scenarios (RCP4.5 and RCP8.5) and two socioeconomic scenarios (SSP2 and SSP3), based on CMIP6 models.

Managing Climate Risk

The management of climate risk requires [Cross-functional Integration and Coordination](#) organized by the Sustainability Working Group, which meets monthly to report on progress, assign responsibility for required actions, and request support from other groups. Group members discuss identified climate risks, related tools, and progress toward climate goals. The Sustainability Working Group reports to senior management who update the Board on climate risk management progress, which is then integrated into the [Enterprise Risk Management](#) process. Climate risks are represented both as primary risks (such as impacts from natural disasters) and as secondary contributions to other primary risks (such as competitive risks). For more detail, see the [ESG Governance](#) section.

Climate Risk Management Tools

This section summarizes our inventory of climate risk management tools used to evaluate the risks identified above:

- **Carbon Pricing Assessment:** See below
- **Environmental Impact Assessments:** See [Biodiversity](#)
- **Future Flood Risk Assessment:** See below
- **Protected Areas Assessments:** See [Biodiversity](#)
- **Water Risk Assessment:** See [Water](#)

We know that there are additional strategies we can employ to further understand our exposure to climate risk, which we see as an important aspect of managing business risk. We will continue to expand our efforts to reduce exposure to climate risk in the future, investigating topics such as extreme heat and wildfire risk.

Carbon Pricing Assessment

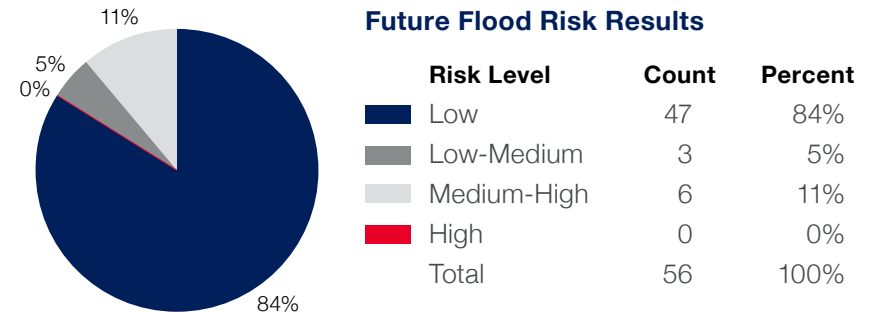
We conducted a detailed Carbon Pricing Assessment, in which we compared multiple pricing scenarios and evaluated impacts to each of our facilities, taking into account the effects of different customer contract types, variations in the carbon intensity of electricity, and consumption of carbon-emitting fuels (diesel and natural gas). We also evaluated the potential impact of carbon price increases on new facility construction. We use this information to understand how carbon prices might impact our business situation, as well as how it may affect our customer's priorities and requirements.

For more detail about this assessment see [Appendix 1: Methodology](#).

Future Flood Risk Assessment

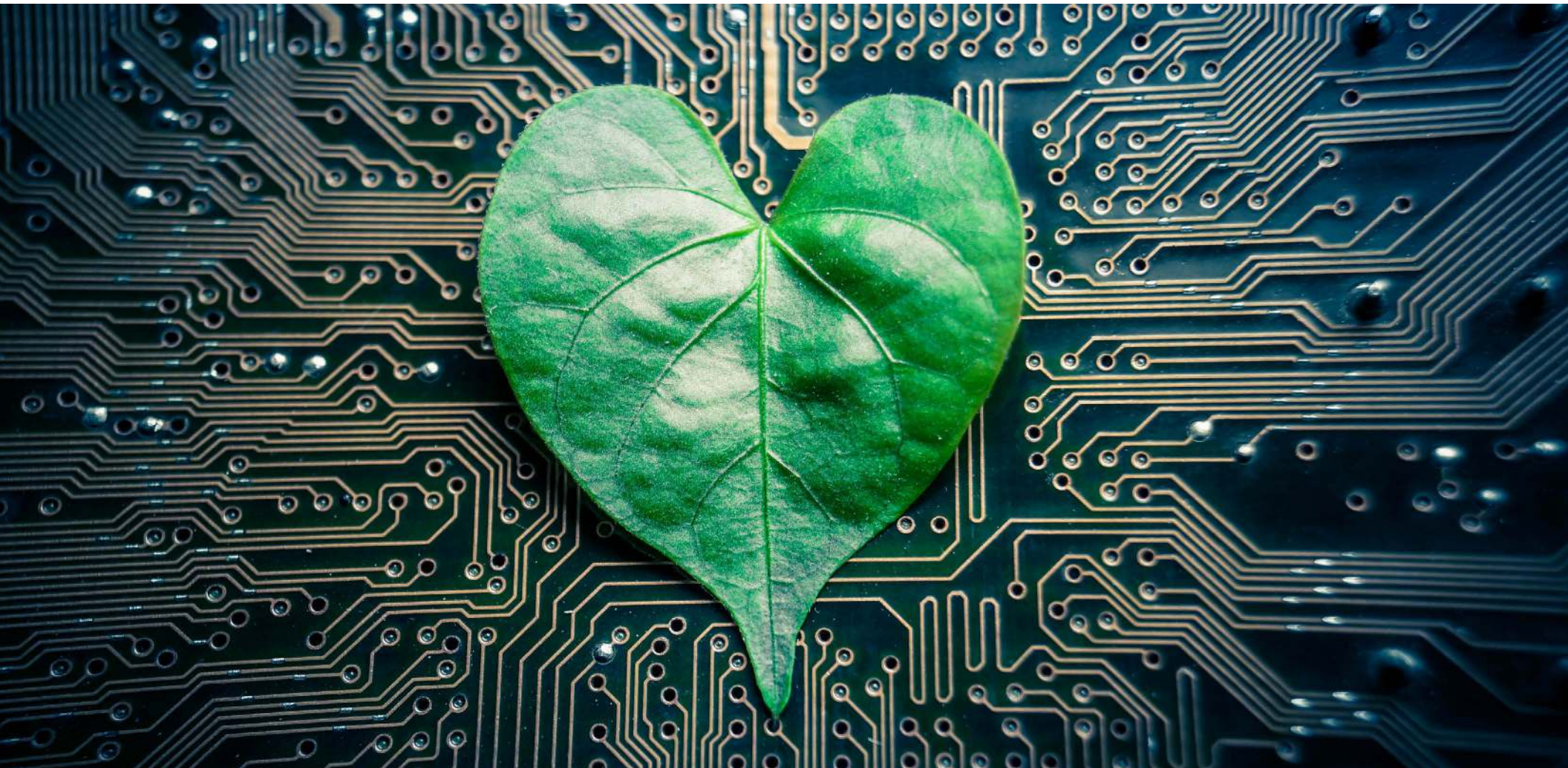
According to government flood maps that rely on historical data (such as US FEMA or UK Environment Agency), we only have one facility with any exposure to flood risk. However, we understand that traditionally “flood-safe” areas may face increased flood risk due to climate change. We evaluated projections of future flood risk using a variety of tools, including the Flood Factor and UK Long Term Flood Risk tools, as well as other government-issued reports.

Using these tools, we found that over 80% of our facilities are located in areas that will retain a *low* flood risk categorization over the next 30 years.



For the remaining facilities that are projected to face increased flood risk, we can now evaluate targeted actions to make these facilities more resilient to this potential future flooding. We also use these future flood risk tools proactively to research and select new locations.

For more detail about this assessment see [Appendix 1: Methodology](#).



Environmental Impact

Environmental Impact

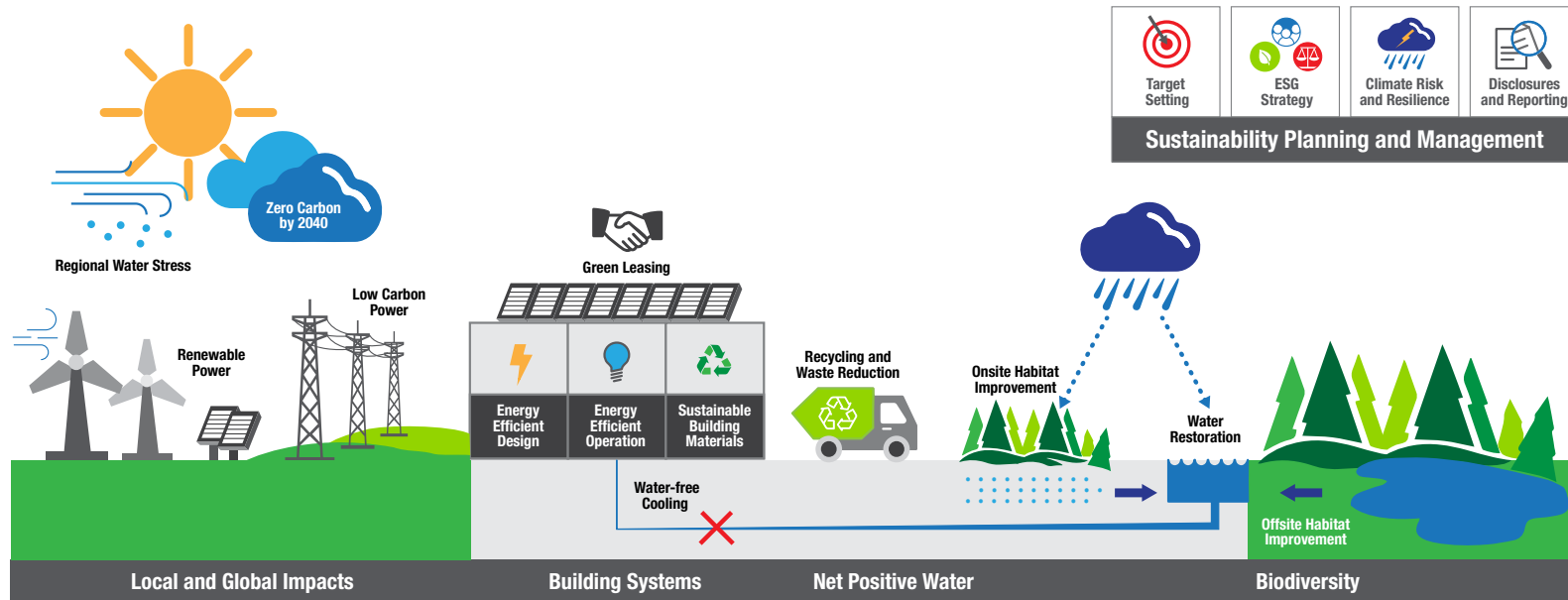
In the past, sustainability programs in the data center industry have been almost exclusively focused on energy and carbon emissions. This is understandable, as climate change is the most pressing global challenge of our era. By their nature, data centers require a large amount of energy. They must remain fully operational 24/7 and run IT equipment that draws large amounts of power. Furthermore, these systems generate heat, which requires energy to keep them cool. To save electricity and thus reduce carbon emissions, traditional data centers evaporate millions of gallons of water per month, all of which are removed from the local watershed, increasing local water scarcity.

We believe this approach is short-sighted, as increased water stress is a major risk of climate change in many of the regions in which we operate. As water stress in these regions increases, data centers that depend on

water for operation will become vulnerable to water shortages, potentially leading to conflicts with local communities, loss of reputation, and business disruption. In addition, water that is evaporated for cooling is removed from the local watershed, contributing to negative impacts for the plants and animals that depend on that water as part of their habitat.

This is why CyrusOne takes a more holistic view of environmental impact. We are committed to reducing our carbon footprint and providing industry-competitive energy efficiency without sacrificing water or imposing negative impacts on biodiversity where we operate. Instead, we strive to make our impact on the environment a positive one through restoring water to watersheds in high-stress regions and improving habitats on or near our data center campuses in an attempt to do not only “less harm” but also to do “more good.”

Sustainable Data Center Infrastructure



Building for Sustainability

Large data centers like ours have great potential to achieve energy and greenhouse gas reductions by combining the computing power of many smaller data rooms into fewer larger data centers. The concentration of this computing power allows for more efficiencies, but it also concentrates the environmental impacts into a single region. For issues like greenhouse gas emissions, this concentration is of small consequence since the emissions go into the same atmosphere and climate change is a global phenomenon.

However, for local issues like water stress and habitat loss, concentrating resource demands into a single region can have big impacts on local communities and landscapes. Our strategy is to avoid as many of the negative consequences of our data centers as possible so we can enable the efficiencies that come with scale.

Our *Building for Sustainability* strategy is summarized as stages of development and considerations at each stage:

Stages of Data Center Development



In this section, we will discuss our sustainability strategies for the first three stages of development: Site Selection, Design, and Construction. The Operating and Partnership stages will be covered in the [Energy](#), [Water](#), and [Climate Impact](#) sections.

Strategy

At CyrusOne, we have long had a strategic focus on efficiency. We are known for building data centers quickly and effectively due to detailed planning and a standardized design. These same strengths lend themselves well to reducing environmental impacts. From site selection to cooling design to construction, efficiency is key to saving both time and resources.

Site Selection

Risk Management

When selecting sites for new data center construction, we use our climate risk assessment techniques to evaluate factors such as future flood risk and water stress (current and future). This provides insight into the chance of climate and weather-related impacts for each potential site and allows us to make more informed siting decisions. See the [Climate Risk](#) section for more information about our tools.

When looking for new data center locations, we prioritize sites in areas already designated for data centers or similar uses via zoning, or in existing planned developments like technology or business parks. This selection process, along with environmental impact assessments and protected areas assessments, gives us confidence that our facilities will not create negative impacts on prime wildlife habitats. By understanding sensitive habitats that are on or adjacent to our sites, we can anticipate and mitigate impacts during site selection. See the [Biodiversity](#) section for more information about our Environmental Impact Assessments and Protected Areas Assessments.

We also take into account the carbon emissions rate of the local electricity grid and the local availability of renewable energy purchasing opportunities, prioritizing sites that support our *net zero carbon* goal. For more information about how we prioritize renewable energy opportunities, see [Energy Procurement](#). As we advance our green building strategy, site selection takes on an expanded role for additional selection criteria such as development density, transportation options, parking capacity, habitat, and open space. By adding these criteria to the initial due diligence process, it helps us select sites for purchase that support our later design and construction ambitions.



Site selection is the foundation. If we don't consider sustainability at the very start of the process, then we haven't set ourselves up for success as the site progresses."

AASHNA PURI

Senior Manager of Project Development and Sustainability
London, England

Talent Spotlight

Connecting the World, Gently

At CyrusOne, we see sustainability as a vital part of our mission. It permeates everything we do, and site selection is no exception. Senior Manager of Project Development and Sustainability Aashna Puri has lived and worked around the world. This experience has allowed her to develop a unique sense of the needs and issues at different locales and the role sustainability plays in each.

"When developing sustainability guidelines for site selection, we tried to come up with criteria that were consistent across both markets that we're entering for the first time and also markets that we're already present in," she said. "What we decided to do was look at the UN's Sustainable Development Goals and align our approach with them as much as possible."

"Water supply and renewable energy availability are the two most important issues that could immediately disqualify a site," Puri said. Having lived and travelled so extensively, Puri has a real passion for the site selection work she oversees at CyrusOne. "This is the future of our world – what we build connects the whole world digitally and we must do it in a sustainable way."

"Connecting people and connecting different parts of the world whilst making sure that we have a gentle impact on the environment is really important. The work that I do at CyrusOne brings those two core values together."

Design

During facility design, several tradeoffs and decisions need to be made. To help illustrate these important decisions, we highlight two significant distinctions in this section: 1) the tradeoffs that are made between energy and water consumption; and 2) the relationship between onsite water consumption and water consumption in the energy supply chain. Navigating these tradeoffs allows CyrusOne to take a multi-factor approach to reduce negative environmental impacts.

Energy/Water Tradeoffs

New CyrusOne data centers are designed to avoid dependence on water consumption-based cooling, providing increased reliability and reducing regional environmental impacts. Traditionally, data centers have utilized cooling systems that evaporate water, removing millions of gallons of water from the watershed and discharging wastewater with highly concentrated contaminants to the local treatment system.

Avoiding evaporative cooling results in a somewhat higher design PUE (Power Usage Effectiveness, a common metric used to measure data center efficiency) than could be achieved by “burning” water instead of electricity, but it allows us to prepare for the future and mitigate the impacts data centers have on regional water supplies. We do not ignore our carbon footprint — on the contrary, we are aggressively pursuing energy efficiency and low-carbon electricity. Our facilities are designed for a future where they will neither consume large amounts of water nor emit large amounts of carbon.

For more discussion of Energy/Water tradeoffs, [see our website](#)

Onsite Water vs. Energy Supply Chain Water

We understand that no matter how much we reduce our onsite water consumption, as long as we are reliant on grid electricity, we are indirectly responsible for the consumption of large amounts of water through traditional thermoelectric electrical generation for the foreseeable future. We have begun efforts to quantify this energy supply chain water consumption in order to understand both our full impact on water resources and the risk of electrical supply disruption due to increased water stress. The water consumed in electricity production, sometimes referred to as the “embodied water of electricity” or “virtual water,” is often used to justify employing less expensive evaporative cooling to save electricity. The rationale is that water



There are many things that fall into the competition between us and our competitors, and ESG is right up there at the top.”

WAYNE LUNSFORD
Director of Engineering
North Cincinnati, Ohio

Talent Spotlight

Competing at the Leading Edge of Efficiency

A lot of thought, technology, and strategy go into designing the modern data center. One of the factors a well-designed facility must include is energy efficiency, for today and the future.

Director of Engineering Wayne Lunsford sees energy efficiency as a multi-pronged obligation. “First of all, we want to be environmentally responsible – it’s the right thing to do,” he said. “Secondly, our customers demand it. They are savvy about the topic, and we are competing against our peers, who are doing it as well. We’ve got to be on top of our game.”

Ensuring we meet our energy savings goals means staying up to date with technology by keeping an ear to the ground for new ideas and approaches. “The technology will continue to change,” Lunsford added. “It’s not static by any means.”

To that end, Lunsford’s ongoing task to lower PUE includes investigating the latest technology and sometimes testing it out to predict impact and viability. That work often takes years to come to fruition, but it is necessary to ensure CyrusOne does all it can to reduce energy usage.

On top of energy efficiency, Lunsford has begun a pilot program with several suppliers in the United States that could eliminate the need for the diesel generators we use for back-up power in the event of power outages, eliminating a source of carbon and pollution emissions. “I’m also working with some suppliers on designing a new chiller that is more efficient and will lower our PUE significantly. These are things customers are very concerned about these days, and this is how I help with ESG.”

expended onsite is simply replacing water that would have been used in electrical generation and that it all evens out in the end. There is some truth in this hunch, especially when the electricity consumed comes from thermoelectric sources (like fossil fuel or nuclear generation). However, we know that solar and wind generation consume negligible amounts of water. As both electrical grids and individual consumers like CyrusOne replace thermoelectric sources with wind and solar generation, the water embodied in the electricity we consume decreases dramatically. When we reach our *net zero carbon* target through the use of renewable energy, we will consume effectively no water for cooling at the vast majority of our facilities, whether directly through water-consuming cooling or indirectly through our electricity use.

To see the results of our supply chain water analysis, see [Metric: Total Water Usage Effectiveness \(WUE Source\)](#).

The Path to Zero Water

As discussed in our [2021 Sustainability Report](#), over the last three years, we’ve had an opportunity to conduct a case study in grappling with the embodied water of electricity and the tradeoffs with onsite water consumption for cooling. In 2020, we upgraded our flagship data center in Carrollton, Texas, from a hybrid air- and water-cooled system to a water-consumption-free design. This had the impact of slightly raising the average Power Usage Effectiveness (PUE) while reducing the onsite water use by 65% (the remaining water being used for fire safety tests, landscaping, and domestic uses). Also in 2020, we purchased BEF Water Restoration Certificates® to offset our onsite water use at Carrollton, restoring 20% more water than we consumed to achieve our *net positive water* designation.

Subsequently in 2021, we began receiving power from a new solar electricity source in Central Texas, which provided around 40% of Carrollton’s power needs for that year (the project only began generating midway through the year). We used the World Resource Institute’s [Guidance for Calculating Water Use Embedded in Purchased Electricity](#) to estimate the water consumed in the energy supply chain for three years: 2019, when we were still consuming water onsite for cooling and purchasing all of our electricity from the regional grid; 2020, with water-free cooling and grid electricity; and 2021, with water-free cooling and an electricity mix of ~40% solar and ~60% grid.

Carrollton Onsite and Supply Chain Water Consumption			
Water Consumption (kgal)	2019	2020	2021
Cooling Technology	Hybrid	Water-free	Water-free
Onsite Water	13,261	4,611	3,234
Energy Supply Chain Water	84,015	87,806	52,672
Total Water	97,276	92,417	55,906
Water Restored	0	5,533	3,703
Regional Water Impact	97,276	86,884	52,203

Water emission factors from WRI’s [Guidance for Calculating Water Use Embedded in Purchased Electricity](#)

The table above shows the results of these calculations: When our water restoration is taken into account, the facility’s total regional water impact decreased almost 50% between 2019 and 2021. From here, it’s easy to imagine a future when the facility uses 100% renewable electricity for the full promise of *net zero carbon* with *net positive water*.



Energy Efficiency

Strategy

We have mentioned the large amount of energy used by data centers, and our goal to reduce our dependence on fossil fuel-derived electricity with regional, additional renewable energy. However, the first step is to decrease our environmental impact by increasing energy efficiency. Our standardized design incorporates efficiency at every level. The three primary design strategies we employ are:

1. Minimize data hall heat
2. Right cooling, right place, right time
3. Supplier partnerships

For more information on how we implement this strategy, see the [Energy Efficiency](#) page on our website.

Metrics and Targets

Here are the primary metrics we use to measure our progress in designing efficient data centers. For more information about these metrics, see [Appendix 2: Primary Metrics](#).

Target: Industry-Competitive PUE Without Consuming Water

Our target is for all newly built facilities to offer competitive energy efficiency without consuming water for cooling.

For more information about water-free cooling, see the [Water](#) section. For more information about how we operate efficiently and track PUE, see the [Energy](#) section.

Metric: Design PUE

Power Usage Effectiveness (PUE) is the ratio of a data centers' total electricity usage to the electricity delivered to servers. For more information about PUE, see [Appendix 2: Primary Metrics](#).

We make a distinction between a facility's Design PUE (the idealized PUE of a facility running at full capacity, based on its design and assumptions about customer servers) and its Operating PUE (the measured PUE of a facility in a given year based on actual conditions). Operating PUE will always be higher (worse) than Design PUE because, to maintain redundancy and flexible capacity, colocation data centers are generally never run at full capacity. For more information about improvements in our Operating PUE, see [Energy](#).

Though we use a standardized design, the Design PUE varies at each facility due to the influence of the local climate; the warmer it is outside, the more energy it takes to maintain data hall temperatures. Therefore, we report the range of Design PUE across our facility locations. Since PUE varies by season, we report the annual average PUE ("annualized"). In 2020, we updated our standard design to incorporate higher-efficiency air-cooled chillers that take advantage of external air temperatures to enhance cooling efficiency (also called "economizers" or "free cooling"). While these systems provide increased efficiency everywhere, they give particular benefit to facilities in cooler climates, leading to a wider Design PUE range for our new design than for previous iterations.

Annualized Design PUE (Standard Design)					
Metric	Climate	2018	2019	2020	2021
Low PUE	Cooler Climates	1.32	1.32	1.18	1.18
High PUE	Warmer Climates	1.36	1.36	1.28	1.28
<i>Scope: highest and lowest design PUE (kWh total/kWh servers) for locations where CyrusOne operates</i>					

Since PUE has a theoretical minimum of 1.0 (meaning no support energy used), the 2020 design reflects a 44% reduction in support energy in our cooler climates and a 22% reduction in warmer climates from our previous design.

Target: 100% Water-Free Cooling in New Data Centers

We have a target to build all new facilities with the ability to operate with zero water-consumption cooling. By committing to this strategy, these facilities can be efficient facilities cooled without the consumption of water both now and into the future.

Metric: Percentage of New Data Centers with Water-Free Cooling

In 2021, we did not finish construction on any data centers, so we have nothing to report this year.

Construction

Lifecycle Assessment

To better understand the climate impact of data center construction as a portion of the facility's entire emissions, we performed a simple lifecycle assessment of our recently completed Council Bluffs, Iowa, and our upcoming Santa Clara, California, data centers. Compared to the United Nations Environmental Program (UNEP) finding that building construction accounted for 28% of global emissions from the building sector versus 72% from building operation, construction of our data centers accounts for approximately 1-2% of their lifetime total emissions. For more information on this, see the [Lifecycle Assessment](#) page on our website.

We recognize that as the electricity we use becomes greener, construction-related emissions will be a larger percentage of what's left, so we must also consider more sustainable construction materials and methods. For more details about this strategy, see [Circular Economy](#).

Green Building and Operations Certifications

Until recently, we have pursued green building certifications on a case-by-case basis. We are evaluating a new green building standard and whether we will pursue certification for all new facilities or just build to that standard without third-party certification. The table below shows green building certifications that cover some or all of each building as of the end of 2021.

For all new facilities we design and construct in Europe, we are targeting BREEAM Very Good certification. This process is in progress for the following facilities:

- London II expansion
- London III
- Paris I
- Frankfurt III
- Dublin I
- Madrid I

Our new facility in Madrid is acting as a pilot development for BREEAM Spain and will become the first data center in Spain built under the BREEAM Data Centres International accreditation.

For all new facilities we design and construct in North America, we are evaluating the best certification strategy going forward.

Green Building and Operations Certifications (2021)		
Facility	Certification	Level
Amsterdam – Polanenpark I	ISO 14001 EMS	Certified
Chicago – Aurora I	Green Globes	3 Globes
Chicago – Aurora II	Green Globes	3 Globes
Frankfurt I	ISO 14001 EMS	Certified
Houston West I	LEED Core & Shell	Silver
London I	ISO 14001 EMS	Certified
London II	ISO 14001 EMS	Certified
London II	BREEAM	Very Good
London III	ISO 14001 EMS	Certified
Phoenix – Chandler I	Energy Star	Certified (2019)
Phoenix – Chandler II	Energy Star	Certified (2020)
Phoenix – Chandler III	Energy Star	Certified
Phoenix – Chandler IV	Energy Star	Certified
Phoenix – Chandler V	Energy Star	Certified
Somerset	LEED Core & Shell	Gold

Energy

By nature, data centers require a large amount of energy. They must remain fully operational 24/7 and run IT equipment that draws large amounts of power. Furthermore, these systems generate a large amount of heat, requiring energy to keep them cool. This is why energy issues are typically seen as the primary environmental concern for data centers. Our main source of energy is electricity, though we also use diesel for backup generation, and some facilities use small amounts of natural gas for comfort heating. For the most part, we focus on electricity because it provides the vast majority of our energy. This section focuses on the Performance and Procurement of our Energy. For more information about how new facilities are designed to be energy efficient see [Building for Sustainability](#). For more information about the carbon emitted due to energy use, see [Climate Impact](#).

Strategy

Our approach to reducing our environmental impact through energy falls under three main strategies: (1) Our standard **design** for new data centers incorporates many energy efficiency measures. We review best practices in the industry, partner with suppliers, and take innovative approaches in design and construction to achieve cost-effective efficiency. (2) For existing facilities, we strive to reduce energy and carbon emissions through **smart operational practices** and facility upgrades. (3) Through strategic site selection and energy procurement, we can increase renewable and low-carbon **power sources** for our operations.

A key part of our strategy is to integrate water and energy metrics to give a more complete picture of our efficiency. As described in [Building for Sustainability](#), water use is usually “invisible” to energy calculations like PUE, frequently leading to the tradeoff of decreased energy use for increased water consumption. However, we know that water consumption can have huge regional environmental impacts. By reporting energy metrics that reference water use, we are charting a new course in our industry for increased transparency and hope that others follow suit.

Energy Performance

Along with facility design and construction, we also strive to reduce energy consumption after the commissioning of new facilities and within operations of our existing facilities.

Strategy

We focus on operating all facilities efficiently through the use of building management systems, airflow modeling, and carefully balancing cooling delivery with server needs. We work with customers to offer rack blanking panels, advise on cold aisle containment, and properly size airflow floor tiles to get the most utility from the chilled air that we supply to data halls. We also partner with our suppliers to identify new high-efficiency technologies and customize equipment specs to meet our particular needs.

To get the most efficiency gains for our efforts, we first look for ways to retrofit and upgrade equipment at our least efficient facilities. To inform our decisions about where to invest in upgrades, we also consider the carbon intensity of the local grid to achieve the biggest carbon reduction for our investment. We also favor opportunities to achieve both energy efficiency and reliability improvements with the same project.

Within our strategy, there are two key distinctions we make in our portfolio: 1) whether the facility is a *legacy* build or a *modern* design, and 2) whether the facility consumes water for cooling (“*wet*”) or not (“*dry*”). For a full explanation of facility designations (*legacy*, *modern*, *wet*, *dry*) see [Appendix 2: Primary Metrics](#).

Data Center Portfolio Composition

This table summarizes the composition of our data center portfolio. The percentage is based on the total available colocation square footage at directly managed *built-out* facilities. “*Built-out*” means that a customer has not only rented the space, but has also installed their servers and begun to draw significant power. We have water data coverage for 95% of our directly managed, open building area (whether *built-out* or not).

Data Center Portfolio	
Reporting Category	% of Portfolio CSF
Legacy Dry Facilities	6%
Legacy Wet Facilities	20%
Modern Dry Facilities	69%
Modern Wet Facilities	5%
Scope: Total colocation floor area at directly managed built-out facilities with water data	

Highlight Story: Partnering for a Brighter Future

When it comes to sustainability, technology is always changing, and sometimes it's challenging to find the capital and employee hours to keep our older facilities up-to-date. As part of our holistic approach to sustainability, CyrusOne is partnering with Energy-as-a-Service (EaaS) leader [Redaptive](#) on a pilot program to retrofit our Austin III and San Antonio I data centers with high efficiency lighting.

The several-month project will replace 769 traditional lamp fixtures in Austin III and 1,138 in San Antonio I with high-quality LEDs with occupancy sensors. CyrusOne expects annual output for utilities at both facilities to drop immediately thanks to the retrofit. Austin's annual lighting-related energy consumption is expected to fall 31%, while San Antonio's is estimated to plunge 54%.

While LEDs aren't a new technology, this new partnership with Redaptive allows us to implement these upgrades with no capital outlay and no disruption to our customers. Instead, our customers will benefit from improved PUE.

Once the retrofits are complete and full data analysis from the pilot program has occurred, CyrusOne intends to retrofit other data centers armed with the experience and knowledge gained from the projects in Austin and San Antonio.



Austin III (Texas)



Austin III (Texas)

Computational Fluid Dynamics (CFD) Optimization

We use Computational Fluid Dynamics (CFD) modeling to simulate the flow of chilled air throughout a facility. CFD Models are advanced mathematical simulations that require expert modeling of the space and hours on high-performance computers to complete, but give key insights into how air and heat move through our facilities. Unlike in-house data centers, colocation data centers have a split responsibility between the servers (controlled by the customers) and the cooling systems (controlled by CyrusOne). Coordinating these two efforts for energy efficiency is not a simple matter. By using CFD modeling we can partner with customers to recommend optimal settings for our cooling equipment and customer server arrangements to ensure that both operate efficiently.

We perform CFD Modeling to customize the cooling of each data hall at various stages of the data center lifecycle:

1. Between construction and operation
2. During customer build-out
3. For ongoing optimization

For more details on our CDF optimization process, see the [Computational Fluid Dynamics](#) page on our website.

Risk Management

Energy efficiency reduces our environmental impact and also provides resilience against some types of risk. By reducing our reliance on energy, we also reduce the strain we place on the grid and the resulting risk of grid power interruptions, as well as our exposure to price volatility. Additionally, having efficient operations allows us to minimize regulatory risk, such as preempting costly adaptation measures with energy-efficient programs in place to meet more stringent regulations in the future.


Metrics and Targets

Here are the primary metrics we use to measure our progress on energy-efficient operations. For more information about these metrics, see [Appendix 2: Primary Metrics](#).

Metric: Absolute Energy Consumption

Our operational energy use calculations include four sources: (1) CyrusOne electricity for server support and common areas, (2) Customer electricity for their servers in our data halls, (3) Natural gas for comfort heating (only used at some facilities), and (4) Diesel for emergency backup generation.

These data are combined into a common unit for aggregation (MWh). We use standard conversion factors for natural gas and diesel (from the European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector). For more detail about the scope and methods, see Energy Inventory in [Appendix 1: Methodology](#).



Total Energy Consumption (MWh)				
Energy Type	2018	2019	2020	2021
Non-renewable fuels purchased and consumed	19,093	34,764	31,239	57,800
Non-renewable electricity purchased	1,911,336	2,353,566	2,715,176	1,689,636
Steam/heating/cooling and other energy (non-renewable) purchased	0	0	0	0
Total renewable energy purchased or generated	10,316	29,894	59,197	1,505,087
Total non-renewable energy sold	0	0	0	0

*Scope includes: **CyrusOne electricity** for server support and common areas; **Customer electricity** for their servers in our data halls; **Natural gas** for comfort heating (only used at some facilities); and **Diesel** for emergency backup generation.*

Energy Intensity

We measure energy intensity from two different perspectives:

- **Power Usage Effectiveness (PUE):** The ratio of total electricity to the electricity delivered to servers. Measured both as Design PUE and Operating PUE.
- **Building Energy Intensity:** The energy per built-out colocation floor area in our facilities measured in megawatt-hours per square foot (MWh/ft²). This includes energy from diesel and natural gas as well.

Each of these metrics gives us a different perspective on how we're doing on reducing the energy intensity of our operations. They are detailed below.

Metric: Power Usage Effectiveness (PUE)

Power Usage Effectiveness (PUE) is the ratio of a data center's total electricity usage to the electricity delivered to servers. This extra, non-server power (anything in excess of a PUE of 1.0) is used to operate the cooling, lighting, and other mechanical systems necessary for server operation. Since

CyrusOne doesn't make any decisions about the efficiency of the servers themselves, we focus on how efficiently we can support their cooling and power distribution needs. For more information about PUE see [Appendix 2: Primary Metrics](#).

We make a distinction between a facility's Design PUE (the idealized PUE of a facility running at full capacity, based on its design and assumptions about customer servers) and its Operating PUE (the measured PUE of a facility in a given year based on actual conditions). Operating PUE will always be higher than Design PUE because, to maintain redundancy and flexible capacity, colocation data centers are never run at full capacity. For more information about improvements in our Design PUE, see [Building for Sustainability](#).

Metric: Operating Power Usage Effectiveness (PUE)

Below are our Operating PUE metrics for 2018-2021 for the different facility categories we track. These averages only include *built-out* data centers that have finished their commissioning, start-up, and initial customer installations. *Pre-built-out* facilities, those under development, and those for which data is unavailable are not included in the PUE averages. PUE has a minimum ideal score of 1.00 (meaning that no power is used to cool or light the facility), and a lower score indicates greater efficiency.

Average Operating PUE					
Reporting Category	% by ft ²	2018	2019	2020	2021
Legacy Dry Facilities	6%	1.63	1.62	1.64	1.61
Legacy Wet Facilities	20%	1.65	1.65	1.64	1.64
Modern Dry Facilities	69%	1.48	1.45	1.48	1.45
Modern Wet Facilities	5%	1.48	1.39	1.40	1.35
All Facilities	100%	1.54	1.50	1.51	1.48

Scope: Includes facilities that are built-out and directly managed by CyrusOne.

While we expect some year-to-year variability due to weather and occupancy, we have shown an improvement in PUE across all categories except our *legacy wet* facilities. This is due to energy efficiency activities as well as some newer facilities that were newly built and previously under-utilized now being filled out with customer installations (increasing the server electricity denominator).

Metric: Building Energy Intensity

Energy intensity describes the energy use per *built-out* colocation building area in our facilities. Energy intensity is measured in megawatt-hours per square foot (MWh/ft²). This includes energy from diesel and natural gas as well.

Energy intensity only includes in-scope energy and building area from data hall space that is *built-out* and directly managed. It is calculated as a ratio of total energy use (including fuels and electricity supplied to customer servers) to built-out colocation area. A lower energy intensity indicates greater efficiency. For more information about Energy Intensity see [Appendix 2: Primary Metrics](#).

Building Energy Intensity (MWh/ft ²)					
Reporting Category	% by ft ²	2018	2019	2020	2021
Legacy Dry Facilities	6%	1.06	1.06	1.11	1.09
Legacy Wet Facilities	20%	0.64	0.68	0.69	0.69
Modern Dry Facilities	69%	0.69	0.78	0.79	0.85
Modern Wet Facilities	5%	0.96	1.12	1.24	1.21
All Facilities	100%	0.72	0.79	0.81	0.86

Scope: Includes facilities that are built-out and directly managed by CyrusOne.

Energy Intensity increased from 2018 to 2021 in *legacy* and *modern* facilities. In our *legacy dry* facilities this was driven by a decrease in *built-out* colocation area from sold facilities and customer consolidation, while in our *legacy wet* facilities, this was driven by increased customer installs at our more energy-dense facilities. In *modern* facilities this increase is due to the change in the industry toward high-performance computing at newer facilities that have not finished customer build-outs, increasing the energy density of actual server use.



WILL COLE
Data Center Engineer
Lebanon, Ohio



I feel like a sleuth, trying to find opportunities where a change in one part can affect another part, while still keeping the bigger picture in mind to improve the whole.”

Talent Spotlight Solving the Cooling Puzzle

Anyone who pays electric bills knows energy isn’t cheap. Imagine the power bill a data center can run up! Some of our energy-saving measures come during the design process as we select efficient equipment to start with, but data centers operate for many years. Technology and requirements can change over time, meaning that continued efficiency requires frequent analysis and modifications.

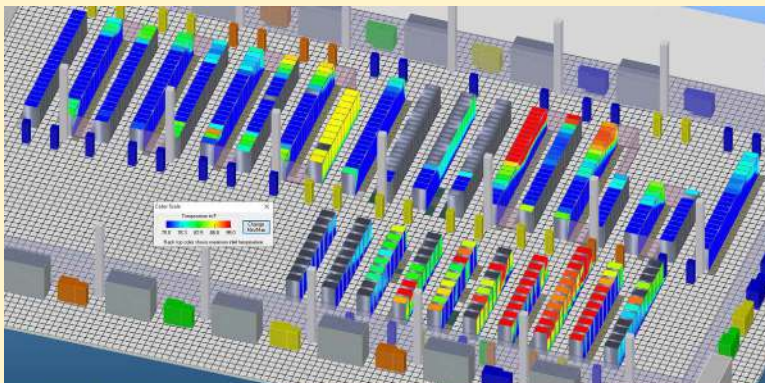
Fortunately for CyrusOne, Solutions Engineer Will Cole enjoys a good puzzle. He models data center performance using computational modeling and analytics, then modifies aspects like airflow and chiller loads for optimal efficiency. “We are given a framework to work in – I have the pieces already in place, I just have to figure out how to optimize each piece. There’s a lot of fine-tuning. It’s like solving a giant jigsaw puzzle without the box top.”

Like the best puzzles, finding the right solution for the most efficient cooling is rarely a breeze. “When you’re dealing with the level of power drawn in these data halls, it’s a serious challenge,” he said, one that he embraces to best serve the environment and customers. “We want to use the power that we need in a responsible manner,” Cole said. “If we use too much, we’re wasting energy. Regardless of whether we pay for it or the customer pays for it, that’s still energy that has to be produced to cool things efficiently or inefficiently. So, as partners with the community, we need to make sure we use the right amount of energy for the right solution.”

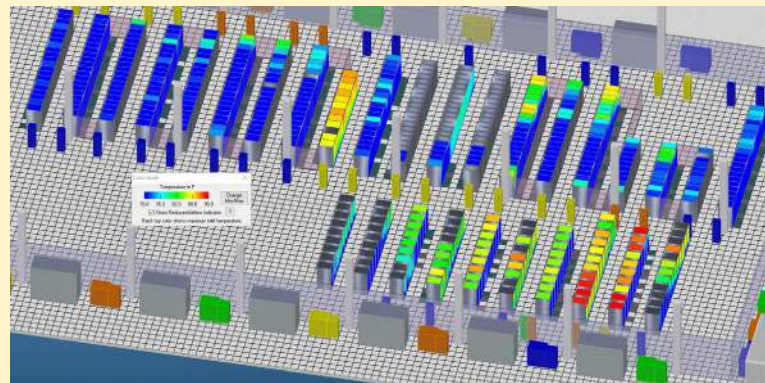
Along with the obvious benefits to CyrusOne’s energy consumption, Cole is optimistic that his work has broader implications for the overall data center industry. “We’re being smarter about things and the technology’s improving,” Cole said.

“I hope other industry people see this is a useful model for how to optimize a data center. Overall, this sort of analysis is a really good step not only for CyrusOne but for the industry at large to help us achieve our environmental goals.”

For more information on data center optimization, see *Finding Our (Air) Flow* below.



Before Optimization



After Optimization

Highlight Story

Finding Our (Air) Flow

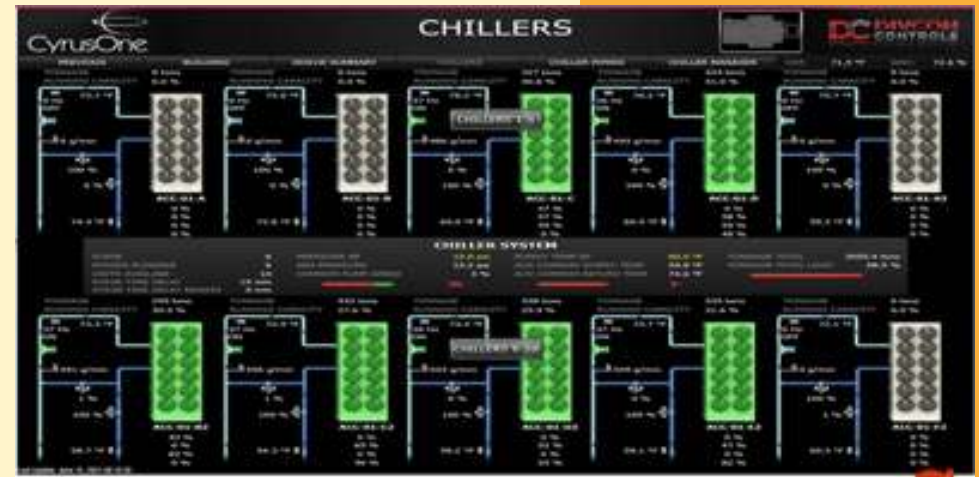
As part of our commitment to ongoing efficiency, we performed a number of Computational Fluid Dynamics (CFD) optimization projects in 2021. These projects allow us to adjust the cooling of data halls based on each hall's current state, which is often significantly different from the initial design created years ago.

Our 2021 CFD projects led to an estimated annual energy reduction of more than **30 million kWh**, saving approximately **\$1.7 million** in electricity costs.

To illustrate, we'll highlight a particular CFD project at one of our Northern Virginia facilities. Using CFD modeling, our engineers created a plan to modify the data hall's perforated tile layout, fan speed, and chiller load. The changes were made over a one-month period in early summer 2021, with benchmark data taken at the start and end of the project.

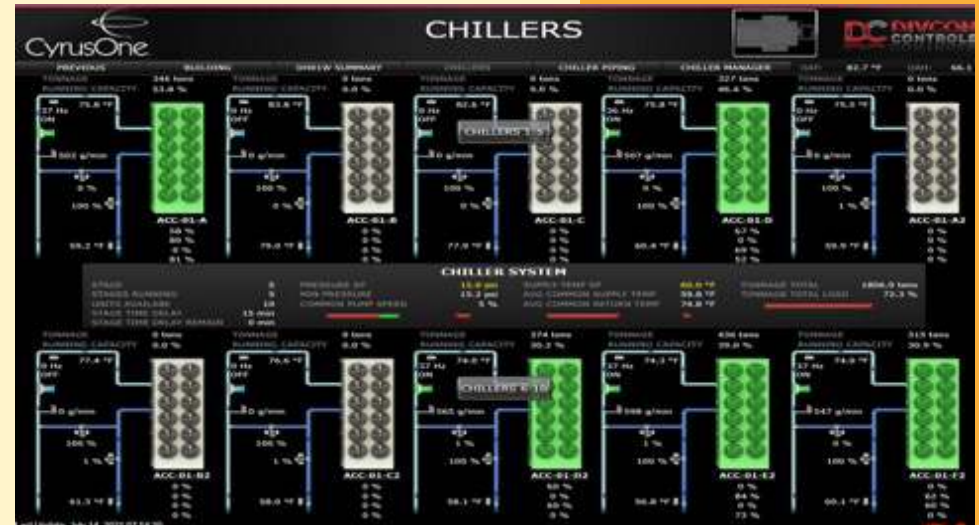
The images on right show that the chiller tonnage was reduced by 248.5 tons between the beginning and end of the project, in spite of a 11.2°F increase in the outdoor air temperature. Also, after tile optimization, average fan speed was lowered from 81% to 52% on the west side of the data hall and from 88% to 62% on the east side. Together, our engineers expect these changes to result in a savings of more than 10 million kWh each year.

This illustrates our efforts to not only design efficiency into our projects from the start but react to changing circumstances and pursue efficiency throughout the lifetime of our data centers.



Chiller Status Day 1

- **6 active Chillers**
- **2,055.4 Total Tons**
- **Outdoor Air Temperature – 71.5°F**



Chiller Status Day 23

- **5 active Chillers**
- **1,806.9 Total Tons**
- **Outdoor Air Temperature – 82.7°F**

Energy Procurement

The sources from which we procure energy have a big impact on our energy and carbon goals, as well as our total water impact. This section describes our efforts toward “green” energy procurement.

Strategy

Our renewable energy strategy primarily serves to meet our *net zero carbon* target, though it also provides additional benefits. First, it allows us to help our customers meet their supply chain carbon reduction goals. Next, by “locking in” renewable contracts instead of relying exclusively on unbundled RECs, we reduce our exposure to renewable energy price volatility and maintain our ability to offer competitive rates. Finally, as we mentioned in [Onsite Water vs. Energy Supply Chain Water](#), solar and wind energy does not consume the large quantities of water that thermoelectric power (fossil fuels and nuclear) does, thus allowing us to further reduce our impact on regional water supplies.

Renewable energy procurement is the biggest part of meeting our *net zero carbon* goal because we defined our target to include the emissions from electricity supplied to customer equipment. Lowering our energy demand with efficiency measures only affects our support equipment, and even there, efficiency alone won’t get us to *net zero carbon*. To help us consider the effect of renewables on carbon emissions, we also monitor the relative carbon intensity of different grids where we operate to understand the carbon reduction per MWh from switching to renewables. Finally, our transition to renewable energy is a key strategy in managing risks in our energy supply chain and climate risks, like carbon pricing risk and water scarcity risk. These are discussed below in [Risk Management](#).

In articulating our Energy Procurement Strategy, we think about it on two different levels:

- 1. Procurement Hierarchy:** The types of power in order of preference
- 2. Transition Roadmap:** How we plan to transition to a renewable energy future

Procurement Hierarchy

In addition to considerations of cost and reliability, we follow a renewable energy procurement hierarchy to guide our energy planning and purchases (see table at right). We screen all of our renewable energy

purchases for generation sources that do no significant harm. Beyond that aspect, we strive to support renewable energy generation projects that are additional (the project would not have happened otherwise), regional (contributing to the same grid where the energy is used), and bundled (where delivery of power remains “bundled” to renewable energy certificates). Therefore, direct power with additionality via a physical power purchase agreement (PPA) is the most desirable procurement option. Where PPA’s are not available, we consider virtual power purchase agreements (VPPA) and Green Tariffs with a preference for contracts on the same grid as our demand. Lastly, we may utilize Renewable Energy Credits (RECs) and Guarantees of Origin (GoO) as a short-term “bridge”. For example, the time between signing a new PPA and when the project finishes construction and begins delivering renewable power may be 1-3 years – we may use unbundled RECs to “bridge” the time between signing and delivery. We may also acquire RECs when requested by customers. We do not intend to achieve carbon neutrality with unbundled RECs; instead, we consider them to be a temporary incremental mechanism. Unfortunately, because of the density of power demand for our facilities, onsite renewable generation cannot meet the needs of our facilities in any meaningful way.

Renewable Energy Procurement Hierarchy					
Procurement Type/ Instrument		Additionality	Regionality	Bundled	No Significant Harm
Most Desirable	PPA/Retail Block	✓	✓	✓	✓
	VPPA (same region)	✓	✓		✓
	VPPA (different region)	✓			✓
	RECs (grid specific)		✓		✓
	RECs (national)				✓

Transition Roadmap

In the development of new facilities, we evaluate and source renewable electricity with the goal of beginning operation with renewable electricity on Day One. Many of our long-term power contracts at existing facilities were signed before the emergence of our *net zero carbon* ambitions, and we must wait for existing contracts to expire before evaluating new options. Our priority roadmap for renewable energy procurement across our existing facilities is:

1. Europe
2. Deregulated US power markets, prioritizing larger loads first
3. Regulated US markets with green power options
4. Regulated US markets without ready green power options

By prioritizing our transition to renewable energy in this way, we aim to make the most progress in the least time. Hopefully, the US markets currently without ready green power options will develop them as we finish the first three phases; otherwise, we will likely work with out-of-region VPPAs.

Risk Management

Switching to renewable power can reduce both financial and physical risks. By lowering the carbon footprint of our power supply, we reduce our exposure to impacts from a potential carbon tax. (For information about the potential impact of Carbon Pricing Risk on electricity prices, see [Climate Risk](#).) Signing long-term energy purchase agreements allows us to avoid renewable energy price volatility (such as we saw in the unbundled REC market over the last two years) and maintain our rates during severe weather events that influence market prices. Renewable energy generation is also less water-intensive and therefore results in a reduction of energy supply chain water consumption. We operate in some regions of high water stress where reductions in water use across our operations, including power generation, are necessary (for more information on our Water Risk Assessment see [Water](#)).

Metrics and Targets

Most of our energy procurement metric performance is represented in the *net zero carbon* target and the metrics we use to evaluate it (see [Climate Impact](#)). By switching to less carbon-intensive electricity providers, energy procurement contributes to overall carbon reductions. There are a few metrics specific to renewable energy that we track for insight into our current performance for customers and investors. For more information about these metrics, see [Appendix 2: Primary Metrics](#).



Renewable energy is vital for sustainability, but it's also important for our customers and everyone across the board."

TODD MASTERS

Director, Power and Energy CEM
Dallas, Texas

Talent Spotlight

Delivering Renewable Customer Service

We know data center energy usage requirements will rise dramatically in coming years to meet the relentless demands of a hyper-connected world. But that doesn't necessarily mean we have to add to our carbon footprint, or to our customers'.

As director of Power and Energy for CyrusOne, Todd Masters sees renewable energy as vital to meeting our *net zero carbon* pledge, but also as a way of serving our customers and helping them meet their own environmental goals. "For our customers, renewables are absolutely critical. They view sustainability as a key function of their corporate responsibility."

Like many in our industry, CyrusOne is targeting *net zero carbon*. Masters added that means that over the next five years it will be absolutely critical "to make renewable what we can make renewable."

"I've been here nearly three years now, and from day one, recognizing that this is the path we must take, we've laid the groundwork," he said. "We've done a lot of work to prepare for this necessary transition. It's rewarding to see that now it's happening and we're ready to go. And we recognize our customers are on that pathway, too. So, to hit our goals along with our customers – it's exciting to be in alignment."

"There will always be challenges. And that's what excites me – how do we solve these energy challenges in front of us."

Target: 100% Renewable Electricity in Europe

The first step on our Transition Roadmap was to shift our European operations to 100% renewable electricity. As of the end of 2020, we had achieved 100% renewable power for our facilities in London, Dublin, and Amsterdam, leaving only our Frankfurt facilities operating on non-renewable power. We were able to complete this transition with the first delivery of renewable power to our Frankfurt facilities in June 2021. This means that CyrusOne will meet its climate neutral commitments to the Climate Neutral Data Centre Pact 8 years ahead of schedule (with 2022 begin the first full calendar year of climate neutral operation). Furthermore, this target paved the way for our new Amsterdam facility to run on renewable electricity from day one. While other facilities have switched to renewables after operation, Amsterdam is the first CyrusOne facility to have never operated on traditional power.

Metric: Percentage of Electricity Procured as Renewable

We measure the amount of energy that we procure as 100% renewable, as a percentage of all the electricity that we purchase (including electricity delivered to customers). In 2021, expanded renewable electricity in Europe and North Texas raised our renewable percentage to 13.0% of total CyrusOne electricity procured. This was a significant improvement over the 0.5% renewable electricity across our portfolio in 2018.


Metric: Percentage of Electricity Paired with Renewable Certificates

We also measure the amount of energy that we pair with unbundled Renewable Energy Certificates (RECs), Guarantees of Origin (GoOs), or other certificate mechanisms. We do not currently employ any certificate measures, but plan to clearly communicate if we begin using them. As mentioned under Procurement Hierarchy, we do not expect to consider unbundled certificates as a long-term part of our strategy to meet our net zero carbon target.



Metric: Percentage of Electricity Procured as Renewable by Customers

For the first time in 2021, we measured the renewable electricity that we have confirmed has been procured by our customers to cover their server and cooling electricity in our facilities (which we include in our Scope 2 reporting) as a percentage of all the electricity that we purchase. We will gather this information for 2018 through 2020 for next year's report.

Renewable Electricity Metrics 				
Year	2018	2019	2020	2021
CyrusOne-Procured Renewables	0.5%	1.3%	2.1%	14.7%
Customer-Procured Renewables	TBD	TBD	TBD	32.4%
Renewable Certificate Procurement	0%	0%	0%	0%
Total Renewables	0.5%	1.3%	2.1%	47.1%

The dramatic increase in CyrusOne-procured renewables reflects the additional renewable capacity that began delivering in 2021 in Texas and Germany.

Renewables Outlook

During 2021, we also worked on procuring additional renewable electricity. While these projects did not begin delivering power in 2021, we have now signed an additional contract for Texas facilities, which will deliver an estimated 107,000 MWh of additional renewable power per year (a combination of solar and wind). This contract will begin delivering renewable electricity in 2023.

Metric: Percentage of Facilities with Renewable Option

Currently, 100% of our facilities can offer customers some form of renewable electricity as an upgrade.

Highlight Story: Azure Sky Above Texas

In regions where we operate multiple facilities, we can pool our renewable energy purchasing power. This allows us to sign larger contracts, cover the demand of multiple buildings at once, and make a greater contribution to the renewable composition of the local grid. In Texas, we have done just that. Following the success of solar power procurement at the Chandler facility in Arizona, [we purchased 67 MW of renewable energy](#) from the Enel Green Power's Azure Sky solar + storage project located in Haskell County, Texas. When fully generating, this purchase is equivalent to meeting 100% of the power requirements for our data center in Allen, Texas and our headquarters in Dallas, Texas, and approximately 70% of the power requirements for our data center in Carrollton, Texas.



Azure Sky solar + storage, Haskell County (Texas)
(Photo by [Enel Green Power](#))

Climate Impact

Data centers require a large amount of energy to remain fully operational 24/7 and run IT equipment that draws large amounts of power. The systems supporting 24/7 operation also generate a large amount of heat and require energy to keep them cool. If the energy supplying our data centers is based on fossil fuels (directly or indirectly), it results in carbon emissions which contribute to climate change. As a responsible corporate citizen, CyrusOne recognizes the importance of reducing our carbon footprint to contribute to global efforts to mitigate climate change and its associated risks. Consequently, we have taken several actions to address our climate impact from energy use and its associated carbon emissions.

To understand our climate impacts, we prepared a greenhouse gas inventory using the standards set by the World Resource Institute Greenhouse Gas Protocol (WRI GHGP). For details about the scope of our inventory, please see [Appendix 1: Methodology](#).

Strategy

Our climate impact strategy is guided by two goals: (1) reduce our carbon footprint, and (2) provide useful business insight to our operations, customers, and investors.

To reduce our carbon footprint, we first focus on reducing energy consumption (see [Building for Sustainability](#) and [Energy Performance](#)). Second, we look for lower-carbon energy options such as directly procured renewables. Finally, we consider limited use of offset mechanisms like Renewable Energy Certificates (RECs) and carbon offsets (see [Energy Procurement](#)).

Our purpose in preparing our greenhouse gas inventory is to meet customer and investor information needs while informing internal decisions. We do this by [Meeting Third-Party Standards](#) set forth by WRI, GRI, SASB, TCFD, and CDP Climate. By providing transparency about our impacts, we support our customers' goals and investors' decision making.

The high-quality carbon emissions data from our greenhouse gas inventory also informs internal strategic decisions across the company, helping us to avoid emissions by design. These assessments are detailed in the Risk Management section below.

We provide clear carbon emissions data to current and prospective customers to help them make informed decisions about reducing their emissions through our facility-specific Sustainability Profiles in the [Location](#) section of our website.

Risk Management

We assess our direct and indirect carbon emissions to manage risk and inform our carbon reduction strategy. This involves tracking regional and national grid emissions factors to understand how carbon intensity varies across our facilities based on the fuel composition of each energy grid. Energy consumption makes up nearly all of our carbon footprint.

We manage climate impact (how we affect the climate) separately from climate risk (how the climate affects us). To find out more about our strategies toward managing the effect climate change has on our business, please see the [Climate Risk](#) section.

Currently, our greenhouse gas data covers 99.6% of our colocation capacity. The missing 0.4% is due to a lack of data from two small, leased *legacy* facilities. Moving forward, all new facilities will be included to give us an accurate understanding of our entire carbon footprint. Furthermore, 96% of our Scope 1 and 2 carbon emission are due to electricity generation, which already has a low-carbon option available in many markets. The remaining 1% is largely diesel for backup generation, which does not currently have ready low-carbon substitutions. We are monitoring the industry for advancements like biodiesel and renewable diesel for diesel generators, biogas for natural gas generators, green hydrogen for fuel cell generators, and large-capacity batteries.

By conducting a grid carbon intensity assessment, we can predict the future carbon emissions of our energy sources. To manage the risk of carbon emissions resulting from these sources into the future, we are working towards procuring direct renewables that provide long-term and reliable energy supply. For more details see the [Energy Procurement](#) section.

Metrics and Targets

Metric: Absolute Greenhouse Gas Totals

Our carbon emissions reporting is separated into Scope 1 and 2. Scope 1 includes emissions from diesel, natural gas, and refrigerants, while Scope 2 includes both emissions from customer server electricity and electricity used to service common areas and data halls, including cooling. Scope 2 emissions are reported using both Market-based and Location-based methods.

For our internal (Scope 1 and Scope 2) emissions, there was an increase in GHG emissions from 866,500 metric tons of CO₂-equivalent (MTCO₂e) in 2018 to 973,990 MTCO₂e in 2021. This increase was driven by growing business activity as occupancy expanded at new facilities. In 2021, our

internal (Scope 1 and Scope 2) emissions were 80% of our total inventory. The remaining 20% were from Scope 3 emissions (see [Scope 3 Estimates](#)).

No new facilities finished construction in 2021; however, some of our new facilities from 2020 are still *pre-built-out* based on customer install schedules. Data from *pre-built-out* facilities is included in our absolute totals, but not in averages for 2021. The following facilities became built out in 2021: Northern Virginia-Sterling IX.

We have added 2021 refrigerant loss to our inventory (as Scope 1 emissions) for US facilities and used it to estimate previous years' refrigerant loss. The Scope 1 totals for all years to the baseline have been restated below. We intend to add European refrigerant loss to next year's inventory as part of our continuous improvement process.

In 2021, almost 95% of our Scope 1 and Scope 2 emissions came from purchased electricity (Scope 2), as is typical for the data center industry. Approximately 5% of our annual carbon emissions were generated from diesel, natural gas, and refrigerant loss in our operations (Scope 1). Since diesel is used for emergency backup generation, year-to-year use is highly variable based on the number of power disruptions that occurred. The quantities are summarized below.



Absolute Greenhouse Gas Totals (MTCO ₂ e)					
SCOPE 1 & 2	2018	2019	2020	2021	Comments
Scope 1	22,536	27,057	26,472	33,404	
Scope 2 Location-based	797,612	896,827	950,902	1,076,178	Includes customer equipment
Scope 2 Market-based	843,964	911,957	964,760	612,216	Includes customer equipment
Total (Location-based)	820,148	923,885	977,374	1,109,582	
Total (Market-based)	866,500	939,015	991,233	645,620	

Scope: Facilities that are built-out and directly managed.

It is worth noting that our annual 2021 change in market-based emissions (35% reduction) diverged from our location-based emissions (13.5% increase). This is a demonstration of the impact that renewable electricity procurement can have on decoupling the growth of our business with the growth of emissions.

For more information about these metrics, see [Appendix 2: Primary Metrics](#).

Target: Net Zero Carbon

Our main target for Climate Impact is our *Net Zero Carbon* by 2040 commitment. We will continue to refine the particulars of how we will draw down our carbon emissions while we grow as a company, but we have committed to operating *net zero carbon* by 2040. In this commitment, we include both the carbon emissions from our support infrastructure (cooling, lighting, power handling, etc.) and those of our customers' IT equipment (servers). Overall, our targets are set to contribute to staying below 1.5°C warming, striving for the SSP1-1.9 scenario (a world of sustainability-focused growth and equality).

In pursuit of this target, we track several metrics to understand the carbon emissions efficiency of our services: Carbon Usage Effectiveness (CUE), Building Carbon Intensity (per square foot), and Revenue Carbon Intensity (per \$USD Revenue). While CUE (see below) is the most common measurement of carbon efficiency in the data center industry, there are some limitations to this metric, so we also track carbon intensity based on building area and revenue. Taken together, these metrics provide a fuller picture of carbon efficiency in our portfolio.

Target: Climate Neutral European Facilities by 2030

CyrusOne is a founding member of the European Union Climate Neutral Data Centre Pact — an agreement among data center operators, cloud service providers, and industry bodies in Europe to reach carbon neutrality by 2030. By participating in this pact, CyrusOne is supporting the EU carbon neutral by 2050 goal. In addition to being a founding member, our own EVP and Managing Director of Europe, Matt Pullen, is on the CNDC Pact Board presenting to the members to the European Commission. As of the end of 2021, we procure 100% renewable electricity for our facilities in Europe.

Our last remaining sources of carbon in Europe are our diesel backup generators, a small amount of natural gas, and refrigerant loss. This represents less than 1% of our potential carbon footprint, so we purchased carbon offsets to balance the emissions from these minor sources.

In selecting carbon offsets, we looked for opportunities to support multiple objectives at once, which is why we selected Bonneville Environmental Foundation's "stacked offsets". These innovative offerings "stack" verified carbon offsets with efforts that support biodiversity. In our case, our verified carbon offsets were from the Hebei Haixing 49.5MW Wind Farm Project in China, while our biodiversity support is through tree planting for habitat restoration and recovery in the Western United States. Since the tree planting is not verified for its carbon reduction, we don't claim any carbon credit for it, but we know we're supporting our [Offsite Habitat Improvement](#) objectives.

Carbon Intensity

We measure carbon intensity from several different perspectives:

- **Carbon Usage Effectiveness (CUE):** The ratio of total carbon (Scope 1 and 2) to the electricity delivered to servers (kgCO₂e/server kWh)
- **Grid Carbon Intensity:** The carbon use per megawatt-hour (MWh) delivered to our facilities from the grid, measured in metric tons of carbon dioxide equivalent per MWh of electricity (MTCO₂e/MWh). Also the basis for GHGP Location-based emissions.
- **Building Carbon Intensity:** The carbon use per *built-out* colocation area in our facilities measured in metric tons of carbon dioxide equivalent per square foot (MTCO₂e/ft²).
- **Revenue Carbon Intensity:** The carbon use associated with revenue income across CyrusOne’s portfolio measured in metric tons of carbon dioxide equivalent per one-million-dollar revenue (MTCO₂e/\$1M Revenue).

Each of these metrics gives us a different perspective on how we’re doing to reduce the carbon intensity of our operations. They are detailed below.

Metric: Carbon Usage Effectiveness (CUE)

Since 96% of our Scope 1 and Scope 2 carbon emissions are due to electricity consumption, CUE and PUE are closely related within a facility, but can vary between different facilities based on the source of electricity. For more information about PUE, see the [Energy Performance](#) section.

Shown below is the CUE for *built-out legacy* and *modern* facilities that are managed directly. CUE has a minimum of zero and a lower value indicates

greater efficiency. For an explanation of facility designations (*legacy, modern, wet, dry*) see [Appendix 2: Primary Metrics](#).

Modern facilities form the bulk of our operating capacity and have shown steady improvement in CUE, largely due to increasing their renewable electricity sourcing. In particular, our *modern wet* facilities are entirely in Europe, which began operating on 100% renewable electricity starting in June 2021. CUE at *legacy* facilities has shown less improvement, but is better on average since 2018, largely as a result of energy efficiency improvements and reductions in grid carbon intensity. Together these effects were able to reduce the company-wide average to 0.31 kg CO₂/kWh server energy use in 2021. It is notable that in the above metrics our *modern dry* facilities outperform our *legacy wet* facilities, despite using no water for cooling.

Metric: Grid Carbon Intensity

To understand the impact that our electricity sourcing has on carbon emissions, we conducted a carbon intensity assessment. In this assessment, we found dramatic differences in carbon intensities between different non-renewable electricity supplies (i.e., regional or national grid electricity): the highest carbon intensity (0.449 MTCO₂e/MWh) is about four times higher than the lowest (0.106 MTCO₂e/MWh). Having a facility-by-facility understanding of carbon intensity informs our decisions about prioritizing facility upgrades, renewable energy procurement, and site selection.

To find our grid carbon intensities, see our [Location profiles](#) for each facility on the CyrusOne website.

Carbon Usage Effectiveness (kg CO ₂ /server kWh)					
Reporting Category	% by ft ²	2018	2019	2020	2021
Legacy Dry Facilities	6%	0.70	0.66	0.65	0.63
Legacy Wet Facilities	20%	0.71	0.72	0.66	0.67
Modern Dry Facilities	69%	0.73	0.61	0.55	0.25
Modern Wet Facilities	5%	0.61	0.48	0.38	0.07
All Facilities	100%	0.72	0.63	0.56	0.31

Scope: Includes facilities that are built-out and directly managed by CyrusOne.

Metric: Building Carbon Intensity

To find our building carbon intensity, we divide our carbon emissions by *built-out* colocation square feet at directly managed facilities. A lower carbon intensity indicates greater efficiency. “*Built-out*” means that a customer has not only rented the space but has also installed their servers and begun to draw power. For an explanation of facility designations (*legacy, modern, wet, dry*), see [Appendix 2: Primary Metrics](#).

Building Carbon Intensity (MTCO ₂ e/ft ²)					
Reporting Category	% by ft ²	2018	2019	2020	2021
Legacy Dry Facilities	6%	0.45	0.42	0.43	0.42
Legacy Wet Facilities	20%	0.26	0.27	0.26	0.25
Modern Dry Facilities	69%	0.31	0.29	0.28	0.14
Modern Wet Facilities	5%	0.31	0.38	0.29	0.07
All Facilities	100%	0.31	0.30	0.29	0.17

Scope: Includes facilities that are built-out and directly managed by CyrusOne.

All categories of Building Carbon Intensity improved driven by similar factors discussed under Carbon Usage Effectiveness (above).

Metric: Revenue Carbon Intensity

To find our revenue carbon intensity, we divide our carbon emissions by our revenue (per one-million-US dollar revenue) across all directly-managed facilities. A lower carbon intensity indicates greater efficiency.

Our progress shows a steady decline (improvement) in carbon emitted per revenue generated, indicating a greater efficiency of delivering services.

Revenue Carbon Intensity				
Metric	2018	2019	2020	2021
Total Market Based GHG (MTCO ₂ e)	866,500	939,015	991,233	645,620
Revenue (M \$USD)	\$821.4	\$981.3	\$1,033.5	\$1,205.7
Revenue Carbon Intensity (MTCO₂e/\$1M Revenue)	1,055	957	959	535

Scope: MTCO₂e from facilities that are built-out and directly managed.

Metric: Scope 3 Estimates

Our Scope 3 emissions are not directly emitted by CyrusOne. These emissions are from sources indirectly associated with CyrusOne, such as construction materials (capital goods), fuel and energy-related activities, business travel, employee commuting, and customer-operated facilities (downstream leased assets). Note that electricity used by customer servers inside facilities that we operate are counted as Scope 2 emissions.

See how we calculated the emissions from these sources in [Appendix 1: Methodology](#).

Scope 3 Emissions (MTCO ₂ e)				
	2018	2019	2020	2021
Capital Goods (Construction Materials)	70,803	10,929	40,160	0
Fuel-and-Energy-Related Activities	214,436	232,959	246,849	157,550
Business Travel	567	551	133	137
Employee Commuting	1,217	1,183	475	295
Downstream Leased Assets (Customer-operated Facilities)	6,028	7,925	11,599	1,729
Grand Total	283,795	247,593	299,215	159,711

Scope: Major scope 3 components.

These results show the variability of our Scope 3 emissions. The Capital Goods (construction materials) category is highly variable due to the fluctuating number of facilities built in a given year (all emissions are recognized in the year the facility completes construction). Most of our Scope 3 emissions come from the Fuel-and-Energy-Related Activities category (upstream emissions from the extraction, refining, and transport of fuels), which are directly proportional to the fuel-based electricity, diesel, and natural gas we consume on-site at our facilities. On the other hand, our smallest Scope 3 emissions come from the Business Travel and Employee Commuting categories, and are so small that they are considered insignificant in our greenhouse gas accounting. We have two customer-operated facilities that share their energy data with us and allow us to track our scope 3 emissions. This represents 2.5% of our colocation building area.

Highlight Story: Climate Neutral Data Centre Pact

In January of 2021, CyrusOne became a founding member of the Climate Neutral Data Centre Pact (CNDCP), a self-regulatory agreement for 54 data center operators and 22 trade associations across Europe to achieve carbon neutrality by 2030. This effort complements a European-wide goal to reach carbon neutrality by 2050. We have committed to reach this goal across our Europe-based facilities by taking steps to improve energy efficiency, clean energy sourcing, water use and consumption, circular economy, heat re-use, and governance.

As a founding member of the CNDCP, our Europe-based team has an active role working with the European Data Centre Association (EUDCA) to bring the CNDCP to fruition. Matt Pullen, CyrusOne’s EVP and Managing Director in Europe, is appointed as the EUDCA representative to the Board of Directors, working alongside other directors to oversee the development of the CNDCP.

As of June 2021, we began operating at 100% renewable electricity across our European Portfolio. With London, Amsterdam, Frankfurt, and Dublin operating on renewable tariffs, CyrusOne’s entire operational portfolio in Europe is now powered by renewable electricity with the help of local suppliers. For 2021 we also purchased carbon credits to offset our emissions from fuels and refrigerant loss. This means that 2022 will be our first full year of operating as a climate neutral region, achieving this goal eight years ahead of the 2030 CNDCP target.

We are extremely proud of this milestone in Europe and pleased to be taking another step towards a greener future and embracing our responsibility to reduce our environmental impact.



Energy Efficiency



Clean Energy



Water



Water

In many data centers, water is consumed for cooling purposes, replacing electricity or other energy sources. However, we recognize that water is a limited resource in high demand, meaning that issues with water supply could reduce our access to water for operations or increase friction with local communities. Facilities dependent on water for cooling may face operational interruptions or require costly retrofits to less water-intensive types of cooling. To minimize risk, we strive to make our operations as water-efficient as possible, with the goal of reaching *net positive water* in regions with high water stress. Most of our facilities use water-free cooling, and we have begun to acquire BEF Water Restoration Certificates® (WRCs) to restore water to local ecosystems, making our presence a net benefit to the watersheds where we operate. We believe that water has been the “invisible resource” for too long in the data center industry and it is time to develop reporting standards to integrate water into energy and carbon reporting to tell the full picture of a data center’s impact on resources and the local region.

Strategy

Our water conservation strategy has three main goals to plan for a sustainable future: 1) remove barriers to data center efficiencies, 2) design to avoid dependence on water for cooling, and 3) restore water in high-risk regions.

Data Center Optimization

Data centers like ours have great potential to achieve energy and greenhouse gas improvements by combining the computing power of many smaller data rooms into fewer larger data centers. The concentration of this computing power allows for more efficiencies, but it also concentrates the environmental impacts into a single region. For issues like greenhouse gas emissions, this concentration is of small consequence since the emissions go into the same atmosphere and climate change is a global issue (though pollutants from fossil fuel power plants can have local air quality impacts). But for purely local issues like water stress, concentrating the water demand into a single watershed can have big impacts on local communities and ecosystems. Our strategy is to remove the negative consequences of water demand so we can enable the efficiencies that come with large data centers.

Plan for Sustainable Future

We aim to build and maintain facilities that can function sustainably both now and into the future. With a high likelihood of strained water resources in

the regions where we operate, we strive to avoid dependence on water for cooling in both our new and existing facilities. Most of our facilities already use cooling systems that do not consume water (water-free cooling), and we continue to update our cooling systems at existing facilities. We also use future regional water stress projections to inform site selection and design for new facilities. This strategy allows us to make improvements to facility reliability and resilience while becoming future-proof against increased local water stress.

In the past, because the electrical grid relied on thermoelectric generation (consuming water to make steam and then electricity, usually with fossil fuels), it was generally thought that onsite water consumption for cooling to reduce electrical use was a substitute for water that wasn’t consumed at the power plant. However, we understand that current and future electrical generation will rely more and more on renewable sources. These energy sources (solar, wind, etc.) are dramatically less water-intensive than yesterday’s thermoelectric fossil-fuel generation. When we achieve our *net zero carbon* target with renewable electricity, we will consume effectively no water in our electricity supply chain. Since the majority of our sites consume no water for cooling, our total water consumption at these sites is negligible.

To learn more about the embodied water of electricity and onsite cooling tradeoffs, see [The Path to Zero Water](#) in the [Building for Sustainability](#) section.

Our strategy leaves us largely insulated from future water risk, as opposed to many other data centers that are designed around water consumption. This underscores the importance of considering PUE (Power Usage Effectiveness) and WUE (Water Usage Effectiveness, see below) in tandem, rather than treating them as isolated metrics.

For more information about PUE, see the [Energy Performance](#) section.

Risk-based Water Management

Water as a resource is chronically undervalued. We manage water as a risk, rather than simply a cost, as we understand the risks that water stress can bring to our business continuity and to the communities in which we operate.

Water stress is highly regional. Some areas have abundant water, but many areas are facing water stress from increasing demand and a decreasing supply of fresh water. Because of this, no single approach will work for every situation. To take a risk-based approach, we analyzed every watershed

in which we operate to determine its local water stress, both now and projected into 2030 and 2040. In areas where water is scarce, we prioritize conservation. But we also want to do more. In these regions, we have begun to partner with environmental nonprofits to support projects that restore the water flows to overdrawn watersheds. This provides benefits to both human water supplies and biodiversity, making our presence in that region net positive for water. See our [Restoration Deep in the Heart of Texas](#) feature for more information.

Risk Management

There are two main ways we manage our risk of water supply disruptions and the operational disruptions that they bring. The first step is to understand the current and future regional water stress and risk to our facilities where we operate through a Water Risk Assessment (see below). The second is to use less water in our operations, which insulates us from whatever water risk is present at our regions. In areas with potential water shortages in the future, decreasing our dependence on water can help us avoid issues with competing water interests, increased water prices, and reduction of supply. CyrusOne's water-free cooling provides significant insulation from the risk of water-supply-based business disruption in regions where water is scarce. As shown in the portfolio summary in the [Energy Performance](#) section, 75% of our total colocation floor area is cooled by water-free cooling, which significantly insulates our portfolio from the regional water stress described in our Water Risk Assessment. We firmly believe that our aggressive stance on prioritizing water conservation will become an opportunity for success as water scarcity increases.

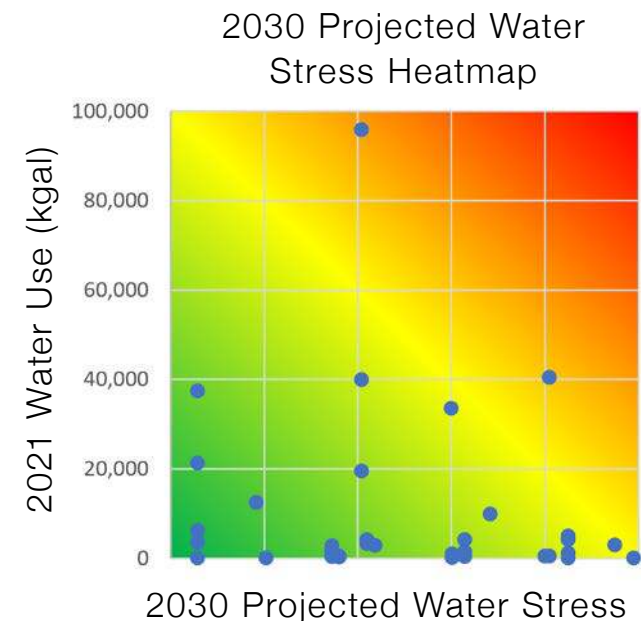
Water Risk Assessment

To understand the risk of water supply disruption for all of our data centers, we conducted an assessment of current and future water stress in the regions where we operate. This helps us to monitor the water availability both now and projected into the future, to prioritize facilities for our water conservation efforts, and to reduce risk by avoiding dependence on water. This is part of our overall climate risk strategy detailed in the [Climate Risk](#) section.

At CyrusOne, we recognize the risk of business interruption at some sites due to water shortages or price increases in just the next decade. With the information from this assessment, we can understand the level of water stress in each region and can take steps to address the water risk for our facilities.

Results

For each of our facilities with water use data, we evaluate water risk by comparing water use to local water stress, current and future. The heatmap below illustrates this comparison for each facility's 2021 water use and its region's projected 2030 water stress. This chart illustrates the success of CyrusOne's water-free cooling strategy — most of the facilities are already using relatively little water. Additionally, only two facilities fall into the high-risk exposure orange or red areas which indicate high use sites in regions expected to experience high water stress, indicating where we should focus our water reduction strategies.



Water Risk Assessment provides us the foresight to plan for efficiencies and alternatives now, rather than be surprised by water scarcity in the future. Our water risk assessment informs us that 80% of our facilities are projected to face increased water stress in 2030 (compared to 2020), and 61% of our sites are projected to be rated high or extremely-high stress by 2030. Fortunately, the vast majority of these sites are already low water users, underscoring the benefit of water-free cooling.

Updates

We update our Water Risk Assessment annually to monitor this important issue and provide our business processes with the latest data for making decisions. As new facilities are added to our portfolio, they will be added to the next assessment. We use the results of the Water Risk Assessment to inform decisions inside the company, including site selection, operations, and new facility design.

Metrics and Targets

Here are the primary metrics and targets we use to measure our progress on water conservation issues. For more information about these metrics, see [Appendix 2: Primary Metrics](#).

Target: Net Positive Water in High-Stress Regions

Our target for water conservation is not to simply do “less bad” but to do “more good” and leave regions better than if we were never there. With this in mind, we have set a target to make all of our facilities that are in high water stress regions into *net positive water* facilities. We accomplish this in three steps. First, we identify which regions are considered high or extremely high water stress using our Water Risk Assessment. Then, we attempt to reduce water usage on the site through operational efficiency measures and upgrades. Finally, we partner with environmental nonprofits through Bonneville Environmental Foundation (BEF) by acquiring WRCs, which fund restoration of water flows in these regions. If we can restore at least 20% more water than we use, we consider this to be a *net positive water* facility.

We achieved our first *net positive water* facility at our Chandler, Arizona, campus in 2019, and our second at our Carrollton, Texas, campus (our largest data center) in 2020. This year, we added the Allen, Texas, data center and our corporate headquarters in Dallas, Texas, to the *net positive water* portfolio (see below).

We are now developing a multi-year plan to convert all of our facilities that are currently in high-stress regions to *net positive water*. After we accomplish our *net positive water* goals, we continue to purchase WRCs annually to maintain our *net positive water* status and monitor our Water Risk Assessment for new regions that become high water stress. When they do, we will make a plan for converting facilities in those regions to *net positive water* facilities.

Metric: Absolute Water Withdrawal, Consumption, Discharge, and Restoration

We estimate the total water withdrawn, consumed, and discharged by our facilities, regardless of whether the water goes toward cooling, facility maintenance, or domestic water uses. At our *net positive water* facilities, we have purchased WRCs which restore 120% of the amount of water we withdraw for these facilities to the regional watershed. See more about our *net positive water* facilities above.

Net withdrawn water is the total water taken in by our facilities, regardless of how it is used, minus the amount of water restored by WRCs. All sources of withdrawn water are municipal supply except for the geothermal cooling system at our Hamilton, Ohio, facility. This system pumps groundwater through the facility, using its low ambient temperature for cooling, before discharging it to surface waters. Since some of our facilities rely on water for cooling, water withdrawal indicates how vulnerable these facilities are to regional water shortages.

Once water enters our facilities, it is either 1) discharged to water treatment works and returned to the watershed or 2) consumed through evaporative cooling or irrigation. Since our consumption of water removes it from the watershed, water consumption indicates our impact on regional water availability.

For more information about the scoping of our water conservation metrics, see [Appendix 2: Primary Metrics](#).



Water Withdrawal, Consumption, Discharge, and Restoration (kgal)				
	2018	2019	2020	2021
Water Withdrawal	175,008	227,410	253,298	361,375
Water Consumption	142,709	190,232	221,722	326,273
Water Discharge	32,300	37,178	31,575	35,103
Water Restoration	0	-5,001	-8,506	-12,151
Net Water Withdrawal	175,008	222,409	244,791	349,224
Hamilton Geothermal Water Withdrawal and Discharge	788,400	788,400	790,560	788,400

Scope: Facilities that are built-out and directly managed.

Our overall use of water has increased over time, representing the growth in the number of facilities we operate and, therefore, our overall demand for water inputs. In particular our notable increase in withdrawal and consumption is driven by a new facility that was designed before our zero-water cooling goal and is now ramping up operation. The variation in our water discharge (from water-free cooled facilities) is expected based on annual variation in weather conditions and is well within historic range. Our water restoration efforts have increased as we welcome our fourth facility to the *net positive water* portfolio.

Metric: Water Withdrawal, Consumption, and Discharge in High-Stress Regions

To focus our attention on areas where water is scarce, we track the total water withdrawal, consumption, and discharge from regions listed as currently in high or extremely high stress, according to the Aqueduct Water Risk Atlas.



Water Withdrawal, Consumption, Discharge, and Restoration in High-Stress Regions (kgal)				
	2018	2019	2020	2021
Water Withdrawal	63,040	87,318	113,363	194,861
Water Consumption	44,682	67,206	102,312	183,999
Water Discharge	18,358	20,112	11,050	10,862
Water Restoration	0	-5,001	-8,506	-12,151
Net Water Withdrawal	63,040	82,317	104,856	182,710

Scope: Facilities that are built-out, directly managed, and in high water stress regions.

This metric includes all 11 of our facilities in high or extremely high water stress regions with water data. It does not include the one smaller facility in high or extremely high water stress regions without water data (which represents only 2.0% of our total building area).

The increase in water consumption between 2018 and 2021 is due to two newer facilities that were designed with water-consuming cooling equipment coming online (these facilities were designed before our water-free target was set). We are investigating potential efficiency upgrades to save water at these sites.

Metric: Onsite Water Usage Effectiveness (WUE Site)

The standard metric for measuring water efficiency in data centers is Water Usage Effectiveness (WUE). This metric was created by The Green Grid specifically for data centers to understand and compare their water impact on an intensity basis. In the past, we have used the term WUE to refer to the water intensity of our data centers’ onsite water use. Going forward, we will refer to this metric as WUE Site. In an effort to increase transparency around water consumption, this year, for the first time, we are also reporting the water intensity of the electricity used in the facility, which we will refer to as WUE Source (see below).

WUE Site is a ratio of annual water use to server energy use and is measured in liters per kilowatt-hour (L/kWh). Unlike PUE, it has a theoretical minimum value of zero (no water withdrawn for the site). Because our WUE Site measurements include all water onsite (including water used for domestic use, facility maintenance, and landscape irrigation), even our zero water-cooling facilities have a WUE Site above zero. For an explanation of facility designations (*legacy, modern, wet, dry*) see [Appendix 2: Primary Metrics](#).

WUE Site (L/kWh)					
Reporting Category	% by ft ²	2018	2019	2020	2021
Legacy Dry Facilities	6%	0.06	0.10	0.09	0.08
Legacy Wet Facilities	20%	2.00	2.40	2.32	2.58
Modern Dry Facilities	69%	0.15	0.09	0.05	0.04
Modern Wet Facilities	5%	3.12	1.59	2.21	2.76
All Facilities	100%	0.55	0.50	0.51	0.57

Scope: Includes facilities that are built-out and directly managed by CyrusOne.

While water use at our *dry* facilities has remained low for both *legacy* and *modern* facilities, our *legacy wet* facilities’ water use has remained higher. Our *modern dry* facilities have improved efficiency over time due to some updated operational strategies. Because these facilities generally only use water for facility maintenance and domestic water, the variability in water demand is largely driven by year-to-year changes in irrigation requirements based on local weather conditions. The growth of water use in our *modern wet* facilities is discussed above in [Metric: Water Withdrawal, Consumption, and Discharge in High-Stress Regions](#). The gradual increase of water use in our *legacy wet* facilities is generally due to declining server power at these older data centers, which lowers the denominator of the WUE calculation.

Metric: Total Water Usage Effectiveness (WUE Source)

As discussed in the [Building For Sustainability](#) section, as long as we are reliant on grid electricity that includes thermoelectric sources to power our facilities, we are indirectly responsible for the consumption of large amounts of water in the production of that electricity. WUE Source is an estimation of the total water burden of a facility. This includes water consumed onsite as well as water consumed in the production of the electricity we use, referred to as “supply chain water”. Supply chain water estimates are based on the World Resource Institute’s [Guidance for Calculating Water Use Embedded in Purchased Electricity](#).

WUE Source is a ratio of supply chain water plus onsite water usage to server energy use, and is measured in liters per kilowatt-hour (L/kWh). For an explanation of facility designations (*legacy, modern, wet, dry*) see [Appendix 2: Primary Metrics](#).

WUE Source (L/kWh)					
Reporting Category	% by ft ²	2018	2019	2020	2021
Legacy Dry Facilities	6%	2.40	2.51	2.54	2.69
Legacy Wet Facilities	20%	5.44	6.43	6.23	6.57
Modern Dry Facilities	69%	3.78	3.75	3.77	3.52
Modern Wet Facilities	5%	5.99	4.28	4.55	3.22
All Facilities	100%	3.93	4.04	4.04	3.81

Scope: Includes facilities that are built-out and directly managed by CyrusOne.

It is interesting to note that the results of our WUE Source comparison dispute the conventional wisdom in our industry that water evaporated onsite for cooling is made up for by the energy supply chain water saved by using less electricity. On average, our *wet* facilities, which use evaporative cooling, have a significantly higher total water burden than our *dry* facilities.



San Antonio I (Texas)



London V (England)

Highlight Story:

Restoration Deep In the Heart of Texas

Drive about 300 miles southwest from our Allen data center and you'll reach the lovely San Saba River in the Texas Hill Country. Beloved by local fishermen and wildlife enthusiasts, the San Saba is a haven for native fish species that have been hybridized through interbreeding with introduced species elsewhere in the Hill Country.

It's also home to small populations of several native aquatic mussels which the US Fish and Wildlife Service have [proposed listing as endangered](#). These amusingly named bivalves, the Texas fatmucket, Texas pimpleback, and false spike, are threatened by water scarcity. Climate change and agriculture have led to decreased water flows in the San Saba in recent decades.

The Bonneville Environmental Foundation (BEF) and the Nature Conservancy (TNC) identified an opportunity to prevent the removal of 177 acre-feet of water from the river over the next three years. Knowing we were looking for BEF Water Restoration Certificates® (WRCs) to apply to our Allen facility, BEF asked CyrusOne to sign on as the keystone sponsor for [the project](#), and we were delighted to assist. Thanks to this collaboration, water that would have been used to irrigate hay fields and pecan orchards will instead remain in the river for the benefit of the San Saba's mussels, fish, and other wildlife.

Our contribution to the San Saba restoration makes Allen our third *net positive water* data center after our Chandler, Arizona campus and our flagship Carrollton, Texas data center. We're so pleased to help BEF and TNC greenlight this new project in a beautiful corner of our home state.



A false spike (*Fusconaia mitchelli*)
(Photo by Clinton & Charles Robertson - [CC BY 2.0](#))



The San Saba River
(Photo by William L. Farr - [CC BY-SA 4.0](#))

Biodiversity

Our data center campuses are relatively compact, but the small amount of land that we own offers an additional opportunity for sustainability efforts. While most of each data center campus is occupied by buildings, we seek opportunities for the surrounding land to support a diversity of resilient biological networks, as well as our digital ones.

Strategy

As governments and companies throughout the world turn their attention to the biodiversity crisis, standardized metrics and frameworks for assessing habitat impact are under development. In the meantime, we approach our biodiversity strategy through the same hierarchy of control that we use to approach other aspects of our environmental portfolio (energy, water, and carbon). First, we have immediate control over reducing our biodiversity impact within the physical footprint of our facilities. Prioritizing site selection in zones designated for industrial development ensures that we avoid areas of high habitat quality. Next, once our data centers are built, we can use the available green space to give back to what should naturally be there by landscaping with locally appropriate native species with a landscape design that encourages benefits to wildlife. Finally, we seek offsite opportunities to improve habitats near our facilities by working with local nonprofits that have conservation expertise.

Alongside our important larger commitments to sustainability, CyrusOne works to ensure that we are making progress at a local level and looking after the environment and habitats surrounding our facilities. We made a formal pledge to biodiversity in our [2020 Sustainability Report](#), making it an additional pillar of our promise to the environment, alongside water, carbon, and energy.

Furthermore, we are closely following the development of reporting frameworks like the Taskforce for Nature-related Financial Disclosures (TNFD) and Science-Based Targets for Nature (SBTN). The initial draft guidance from those frameworks is focused on spheres of influence, such as onsite work and offsite work within our supply chain. For onsite strategies, the draft guidance from TNFD and SBTN suggests a similar hierarchy of control to ours, indicating that we're on the right track. We will continue to monitor the development of these frameworks and use them to inform our onsite activities.

For offsite strategies, we will incorporate guidance as it is developed, but early indications suggest that creative interpretation will be necessary for our industry. Our supply chain provides a less direct link to habitat mitigation efforts than those that include agricultural products or materials harvested from forests. The primary aspect of our supply chain that impacts habitat is electricity generation. These and other impacts come largely in the form of water use, so the work we have done so far with our watershed restoration efforts is connected to one of the primary biodiversity impacts from our supply chain.

Finally, we look for opportunities to provide biodiversity co-benefits when we work on other sustainability efforts. For example, when selecting Water Restoration Certificates or Carbon Offsets, we look for projects that not only provide the benefit to water or carbon, but also to biodiversity.

Risk Management

Our approach to managing risks related to habitat largely revolves around minimizing the harm from our sites. To evaluate this, we use two forms of risk assessments: (1) Environmental Impact Assessments and (2) Protected Areas Assessments. For more details about our methodologies for these assessments, see [Appendix 1: Methods](#).

Environmental Impact Assessments

Habitat impacts are a significant aspect of the Environmental Impact Assessments required by law in many markets before the construction of a new facility. By considering sensitive habitats when selecting project sites, we avoid harm and minimize the need for remedial activities and project delays.

Protected Areas Assessment

To monitor our ongoing risk related to habitat, we conduct periodic Protected Areas Assessments to verify that our facilities are not adjacent to any protected areas or that adjacent areas have not become protected since construction. This allows us to continue to monitor potential critical habitat issues after a site is in operation.

Onsite Habitat Improvement

Strategy

We aim to achieve several objectives through landscaping at our buildings. By cultivating locally adapted native plants, we can minimize the water and other resources needed for maintenance while benefiting nature. Although most of our facilities have minimal landscaping, small areas can have a big impact if we create wildlife habitat through careful plant selection and placement. At sites with improved habitat, we've integrated plants, features, and practices that attract local pollinators and migratory birds. Our landscape designs include attention to the diversity of forage options throughout the seasons as well as creating shelter and nesting locations. Though we are in the early stages of implementing habitat landscape improvement across our portfolio, we have learned from the projects that we've pursued thus far and are prepared to apply our methods to new sites and existing facility upgrades going forward.

Metrics and Targets

Target: Habitat Networks

As our facilities are strategically located to primarily improve data networks, we recognize that the same strategic placement can help provide habitat networks as well. Our target is to improve habitat at each of our facilities, focusing on pollinator- and bird-friendly gardens to support local biodiversity.

For us, this means landscaping that uses native and climate-adapted species to provide food, water, shelter, and nesting for wildlife. In addition, we prefer landscape management practices that conserve water, avoid unnecessary disturbance and chemical use, and strive for a natural aesthetic.

We understand that third-party verification is crucial to ensure our efforts are impactful. At a minimum, we will certify our landscapes using the National Wildlife Federation's (NWF) Certified Wildlife Habitat® program in North America and the DCs for Bees Pollinator Plan in Europe.

Metric: Facilities with Improved Habitat

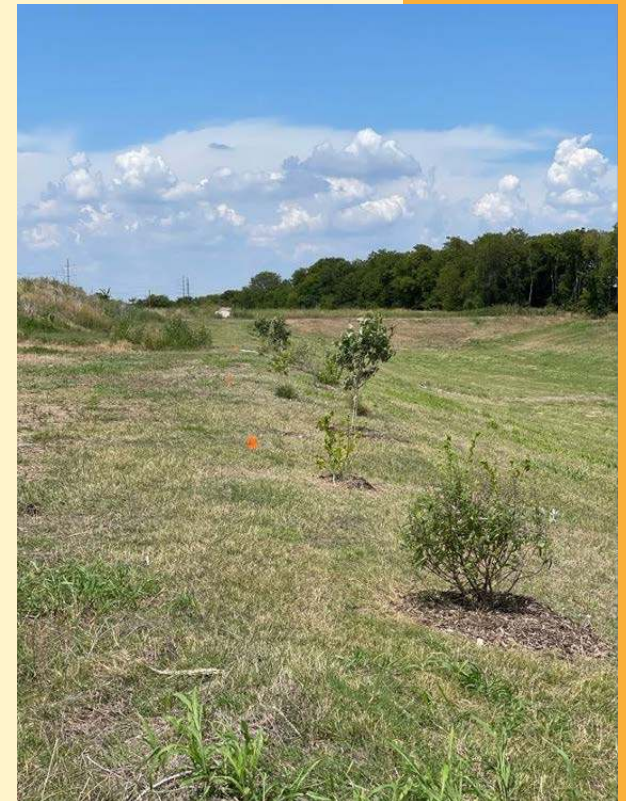
To measure progress toward our target, we will track and report how many of our facilities have some improved habitat onsite that supports biodiversity in the area. For more information about this metric, see [Appendix 2: Primary Metrics](#).

Habitat Networks Target				
	2018	2019	2020	2021
Facilities with Improved Habitat	0%	2%	2%	5%

Highlight Story: Beautyberry and Dogwood in Allen

Our first onsite habitat improvement project in the United States is at our Allen, Texas, facility. The landscape now consists of islands of native plants clustered to provide food, shelter, water, and nesting sites. We plan to integrate educational material and adjust maintenance regimes to limit disturbance and preserve useful habitat structures. The photo shows the initial planting and we're looking forward to it getting established this spring.

The lessons learned from designing the Allen habitat were immediately put to use 20 miles away at Carrollton. Winter Storm Uri in Texas damaged the landscaping at Carrollton beyond repair, so rather than replacing the landscape with the old plant selection, we used our plant list from Allen to meet our habitat goals at a new site. The work on both of Texas' improved habitat sites was completed in 2021 and is reflected in the above metrics.



Offsite Habitat Improvement

Where our portfolio doesn't offer an opportunity for planting and habitat creation, we strive to work with local non-profit organizations and communities to enhance biodiversity in local areas.

Strategy

Given our industry and the size of our company, we are working to find a way to meaningfully contribute to improving biodiversity. We recognize that this is not a problem we can tackle on our own — it will require partnership, creativity, and collaboration. A good example in our industry is [Host In Ireland's DCs for Bees](#) program, which provides a toolkit for pollinator plantings at data centers and has supported native plantings at properties managed by the Irish Native Woodland Trust.

We know that biodiversity is intertwined with other environmental targets that we have set. For example, the electricity we consume can impact biodiversity through fossil fuel extraction and water consumed during electrical generation. These impacts will decrease significantly as we transition to renewable energy but we want to do more. However, there aren't readily tradable credits for habitat restoration in the same way that there are for carbon offsets, RECs, and water restoration. Biodiversity gains are more often a co-benefit of projects completed for other purposes. So, our strategy is to look for projects with multiple co-benefits to help us work toward several target topics at the same time. The co-benefits can include expanding or preserving wildlife habitat, reducing water stress, improving communities, carbon reduction and removal, or improved renewable energy.

One way that we have pursued this strategy is through the purchase of BEF Water Restoration Certificates® to increase water flows, improving regional water stress for both human use and local wildlife habitat. For more information about this water restoration, see [Water](#). We have begun to map out additional offsite efforts to maximize biodiversity co-benefits. Possibilities include expanding partnerships with conservation organizations, supporting nature-based carbon removal or emissions reductions projects, and additional water restoration projects.

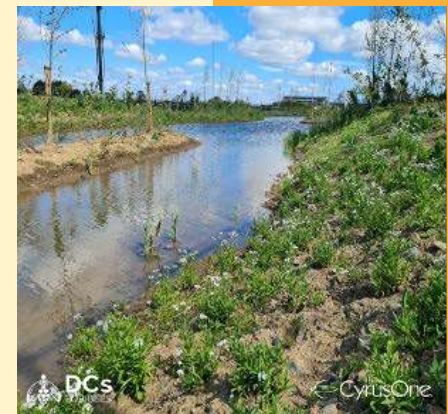
Metrics and Targets

To tackle this problem innovatively, we are avoiding prescribing metrics in the short term; however, we are closely following the development of reporting frameworks like the Taskforce for Nature-Related Financial Disclosures and Science-Based Targets for Nature. We will continue to monitor these frameworks for emerging metrics and targets.

Highlight Story: Bees and Trees in Ireland

In our last sustainability report, we discussed our implementation of [Host in Ireland DCs for Bees Pollinator Plan](#) at our Amsterdam I site. Since then, we have expanded the program to our Dublin, Grange Castle data center, planting native wildflowers, flowering trees, and shrubs to support biodiversity and protect our bee populations. [Click here](#) to see video footage of our Dublin I landscaping from early spring of 2021.

Our partnership with [Host in Ireland DCs for Bees](#) continues with our support of the *Orchards in the Community* program, in which 49 organizations from the Irish data center community pledged to fund and plant more than 1,000 orchards across Ireland for the 2021-2022 planting season – including one on-site at our Dublin, Grange castle data center! Orchards are important food sources for pollinators and provide habitat for many other species of plants and animals. Local communities can enjoy the orchards' green space, shade, and delicious fruit. The program also provides an opportunity for Ireland's [National Biodiversity Data Centre](#) to perform pollination success research for the first time, by planting orchards with the same species in many locations during the same growing season. We are excited about this opportunity to support habitat improvements (both on-and off-site), local communities, and scientific research all in one project!



Dublin I (Ireland)

Circular Economy

CyrusOne is developing and expanding our strategy for transitioning to a circular economy. In general, one of the key strategies of a circular economy is dematerialization: transitioning material processes to digital ones. We recognize that data centers play a central role in dematerialization by providing a reliable digital infrastructure that can make alternatives not only less material-intensive but also more energy and labor efficient. Other sections of this report detail how we are reducing the environmental burdens of data centers so the benefits of dematerialization do not simply shift the impacts to carbon or water. In this section, we describe our efforts at making our material streams more circular.

For material issues, CyrusOne's challenges are more closely related to those of a typical real estate company than to those of an in-house data center operator. For example, the EU Climate Neutral Data Centre Pact's Circular Economy commitment sets a high bar of reusing, repairing, or recycling 100% of used server equipment. However, as we described in the [Introduction](#), we do not control the servers in our colocation facilities — they belong to our customers. Due to this, our operational material waste generation is very low, largely consisting of customer packaging and break room waste. However, because we are building new facilities each year, our primary opportunity to contribute to the circular economy transition comes from incorporating circularity into our construction practices. Our efforts in both construction and operations are detailed below.

Construction Circularity

Construction Upstreaming

One technique that we have used to improve the circularity of our construction practices is through “upstreaming” construction so more of it happens at the manufacturer rather than on the construction site. This seemingly simple change in support of our innovative modular construction techniques means that each manufacturer's waste stays with the manufacturer, where they can better manage it in bulk. For example, during construction, a process may generate a remnant 5-foot carbon steel pipe. If this fabrication occurred at the construction site, the pipe remnant would most likely end up in the recycling bin since the opportunities to reuse it would be limited. At a high-volume manufacturing facility, however, there are many more opportunities for that pipe section to be used rather than recycled.

Construction Material Choices

Our construction material choices also have opportunities to close the loop and contribute toward a circular economy. We are evaluating the potential for recycled content and low-carbon construction materials in addition to other environmentally preferable materials, like low-VOC paints and adhesives. Each choice is another step on the road to circularity and reducing the other environmental impacts of construction.

Construction Recycling

Once construction is underway, there are opportunities to recycle discarded construction and demolition materials. Construction site recycling practices are built into our standard process and are one of our requirements when selecting general contractors.

Operations Circularity

While construction is our major opportunity to contribute towards the transition to a circular economy, we still look for opportunities to improve waste and circularity in our operations.

Paperless Processes

We have transitioned several of our standard business processes to paperless systems. Two examples with major impacts are our contracts system and our commissioning documentation. By transitioning from paper to electronic formats, we are (in our own small way) realizing the potential of dematerialization that data centers can offer to the economy at large.

General Recycling

As part of our service to customers during their move-in process, we provide recycling for their packaging, such as cardboard boxes. For each facility, this waste generation is highly episodic — we may have a few months of this waste during move-in and then very little for years until the customer upgrades their equipment and generates more packaging. Many of our data centers also offer meeting rooms for customer use, and as part of this service, we offer office recycling of paper and drink containers at many locations. This matches the recycling we implement at our headquarters.

Battery Recycling and Waste Reduction

The most significant part of our waste stream is the spent lead-acid batteries that power our Uninterruptible Power Supply (UPS) systems. In the event of a power outage, these systems provide a large amount of power capacity for 5-10 minutes as the backup generators come online, ensuring continuous uptime to our customer environments. For our traditional UPS systems (the majority of our sites), the batteries must be replaced every 5-7 years and our spent batteries are recycled by our battery service provider. In 2021 we replaced over 28,000 batteries and recycled all of them (around 2.4 million pounds of materials).

We are also researching how to reduce this waste by upgrading our UPS technology. Our pilot project at our Wappingers Falls data center replaced our standard lead-acid (VLRA) UPS system with an advanced lithium-ion UPS system. Lithium-ion batteries have a much longer expected lifespan, in part because they do not degrade during power outages as lead-acid batteries do. The lithium-ion batteries' expected lifespan of at least 15 years allows us to build operational resilience while significantly reducing battery waste. Since this pilot project was successful, we installed an additional 3200 kVA of lithium-ion UPS modules to support the expansion at our Norwalk data center in 2021.

Metric: Waste and Recycling Weights

We have gathered centralized waste and recycling records for 29 of our facilities for the last two years (representing 51% of our directly managed colocation square feet), and estimated the remainder below based on colocation square feet. We are working on centralizing data for the remaining facilities.

Waste and Recycling (short tons)		
Reporting Category	2020	2021
Non-regulated Landfilled	3,226	3,895
Non-regulated Recycled	653	478
Batteries Recycled	1,200	1,200
Recycling Rate	36%	33%

Scope: Includes operational waste from facilities directly managed by CyrusOne. Includes non-regulated waste and spent battery recycling.

As expected, the waste generated each year can be highly variable, but is very small for a real estate company of our size (generating about 2.4 tons per \$1M in revenue). This is why we do not consider waste and recycling to be a material issue for our reporting, but will continue to monitor it.

Air Pollution

We are not a significant generator of major air pollutants, such as NO_x, CO, VOCs, PM₁₀, PM_{2.5} or SO₂, since our primary source is our diesel generators used for emergency generation only. To determine the significance of our air pollutant generation, we conducted a case study of the amount of these six pollutants emitted from US diesel generators during 2020 (representing 91% of diesel consumed that year).

These generators are operated under air permits with recordings of run time and fuel inventory. The case study demonstrates the low levels of emissions from our facilities relative to heavy industrial emitters and why we do not consider air pollution to be a material issue for our reporting.

Air Pollution Emissions (short tons)	
Air Pollutant	2020
NO_x	192
CO	40
VOCs	8
PM₁₀	4
PM_{2.5}	3
SO₂	5

Scope: Emissions from diesel generators at facilities in the US directly managed by CyrusOne.

Where Are Your Servers?

As we described in the [Introduction](#), as a colocation data center operator, we do not own or control the servers in our facilities. Servers are our “tenants,” so to speak, and are owned, operated, and retired by our customers. This is different from owner-operated data centers — such as those operated by Microsoft, Amazon, or Google — where they manage both the data center and its servers. Because of the importance of data security, server end-of-life management is managed by our customers so they retain custody of their confidential data. Because of this, the decision to dispose of, recycle, or reuse these assets is entirely up to them. We do practice e-waste recycling for our owned electronic assets, such as teammate laptops and monitors, but this is a small component of our overall waste profile.



Social Responsibility

Social Responsibility

At CyrusOne, we understand that we have a responsibility to act as good corporate citizens. We pride ourselves on our **Core Values** of Community, Agility, Respect, Enjoyable Workplace, Ethics, and Exceptional Service (referred to as CAREEE). Our social responsibility efforts fall under the following four headings:

- **Responsible Supply Chain:** Because we have a relatively small number of teammates, our supply chain provides us an important opportunity to increase our social impact.
- **Responsibility to Our Employees:** Our people are our most important resource, and we have a responsibility to promote their well-being and help them grow.
- **Responsibility to Our Customers:** We value our customers and work to deliver exceptional service and keep them safe when they're at our sites.
- **Responsibility to Our Communities:** We strive to build networks of resilience in the communities where we operate.

Safety Across the Value Chain

We see our responsibility to safety, not only to our employees, but across our value chain. We discuss how we address safety throughout the rest of this chapter. For a summary, you can see our [Health and Safety website](#) or link to the sections below:

- [Contractor Occupational Safety](#)
- [Employee Occupational Safety](#)
- [Customer Safety](#)

Responsible Supply Chain

At CyrusOne, we realize that much of our impact and influence on society comes through our supply chain. Our commitment to creating a responsible supply chain means that our ethics extend to 1) our relationship with our suppliers and 2) our suppliers' behavior. We have established practices to set clear guidelines and expectations for a responsible relationship with our suppliers, prevent conflicts of interest, and create mutually beneficial long-term relationships. It is also important to us that our suppliers conform with all applicable human rights standards, labor and employment laws and norms, and environmental regulations and best practices.

CyrusOne's 60 top suppliers, representing more than \$1 billion in annual spend, are in the following major categories:

- Architectural and engineering services
- Data center equipment providers
- General contractors (construction)
- Professional services such as payroll, consulting, and legal services
- Security services
- Utilities

Strategy

Our strategy to manage a responsible supply chain is to integrate our supplier ESG tools into all stages of the vendor lifecycle:

1. **Vendor Code of Conduct:** To properly communicate our values and expectations, CyrusOne provides suppliers with a comprehensive framework of standards in the form of our [Vendor Code of Conduct](#).
2. **New Vendor Screening and Prequalification:** Our approach to managing risks related to our suppliers is embedded in our initial vendor lifecycle stages. Through these initial stages, we evaluate the ethical standing of our potential suppliers. By applying the standards of our Vendor Code of Conduct to these two steps, we manage the risks that can come from forming partnerships with companies that don't share our values.
3. **Vendor Onboarding and Life Management:** We don't simply "check the box" when our vendors are selected. We continue the conversation and maintain integrity through our supply chain

standards. Long after selection and onboarding, we use these standards as part of our Quarterly Business Reviews with vendors to maintain responsible relationship management.

- 4. Vendor Surveys:** We regularly survey our vendors to understand their programs and practices, learn more about the impacts of our supply chain, and to help uncover new ways for CyrusOne to have a positive influence on our suppliers.

Vendor Code of Conduct

At CyrusOne, we adhere to our Core Value of commitment to ethical business practices. To reinforce this value, we use a Vendor Code of Conduct to share our standards with our business partners and facilitate ethical and professional relationships. We take the Vendor Code of Conduct seriously and have integrated it as a decision tool across all parts of the vendor lifecycle (see Strategy above).

As part of our continuous improvement process, we updated our Vendor Code of Conduct in 2021 and achieved our goal to use the Code in 100% of new vendor selection processes. In addition, we communicated our Code to all existing vendors by the close of the year. Our improved Vendor Code of Conduct can be found on our [website](#) and covers the following topics:

- Workplace and Business Practices:
 - No Bullying, Discrimination, or Harassment
 - Human Rights & Dignity
 - Health & Safety
 - Compensation & Benefits
 - Freedom of Association/Collective Bargaining
 - Environmental Compliance
 - Anti-Corruption & Anti-Bribery
- Conflicts of Interest:
 - Vendor & Supplier Relations
 - Business Entertainment, Meals, Gifts, & Favors
 - Participation in Purchasing Decisions
 - Purchases From Related Businesses

Vendor Surveys

We regularly survey our vendors to communicate the importance of our vendor standards and to help us assess the maturity of our vendors' programs. Our last survey took place in 2020 with a focus on diversity and

sustainability. The survey included 26 of our key global vendors totaling \$137 million in spend within the prior year.

Vendor Survey Results

- 59% track their company greenhouse/carbon gas footprint.
- 45% have companywide greenhouse/carbon gas goals.
- 45% have completed a product environmental life cycle analysis.
- 59% have a corporate sustainability strategy.
- 55% track the percentage of energy sourced from renewable energy.
- 64% have a formal diversity program.

Human Rights

Our Vendor Code of Conduct prohibits all forms of slavery, human trafficking, forced labor, and child labor as defined by applicable law. CyrusOne requires that Vendors affirmatively prohibit such human rights violations and adopt policies and procedures which comply with national and local laws on working hours, wages, benefits, and minimum working ages, and are designed to prevent human rights violations with respect to such Vendors' business operations.

All of our Tier I suppliers operate solely in developed democracies (the United States, the United Kingdom, Ireland, Germany, and the Netherlands) with strong human rights protections, so our risk of human rights issues in our Tier I supply chain is minimal.

Supplier Diversity

Diversity, equity, and inclusion within our supply chain is important to us at CyrusOne and important to our customers. To see how we integrate these values into our employee community, please see [Responsibility to Our Employees](#). Since we have relatively few teammates for a company of our revenue, our greatest contribution to addressing diversity, equity, and inclusion comes from our supply chain.

To track our impact on this important topic, we have set a goal to increase our partnerships with diverse and underrepresented suppliers, such as small businesses, minority-owned businesses, or women-owned businesses. In 2021, we made progress against our goals through several initiatives, including incorporating diversity reporting requirements in all request for proposals (RFPs) globally.

Metrics and Targets

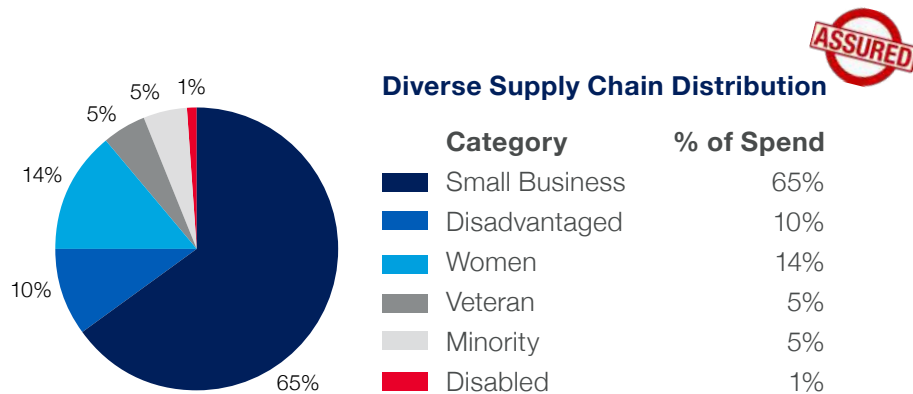
We measure our supply chain diversity progress by identifying the percentage of our supply chain spend that goes to certified small businesses, minority-owned businesses, women-owned businesses, or other historically underrepresented groups. Companies that are certified to multiple of these criteria are counted in each of their categories. Since the U.S. has certification systems in place for these designations, we started our target there (U.S. business represents 70% of our total spend).

Target: Diverse Supply Chain Spend

Our target is to expand our supply chain spend on small businesses or businesses owned by disadvantaged, women, veteran, minority, or disabled owners. As of the end of 2021, these businesses represented 13.4% of our Tier 1 U.S. spend. Our target is to reach 20% by the end of 2024.

Metric: Diverse Supply Chain Distribution

We track the percentage of our diverse supply chain spend that goes to different certified categories of historically underrepresented businesses. As of the end of 2021, these businesses represented 13.4% of our Tier 1 U.S. spend. Companies whose owners represent more than one of these categories (such as women veterans) are represented in multiple categories. The breakdown of spending on the different business categories is shown in the chart below.



Contractor Occupational Safety

Our focus on safety extends to our contractors as well. In 2021, we collaborated with several kinds of CyrusOne contractors — including construction, facility maintenance, and security — to improve transparency and safety efforts. Through this collaboration, we were able to collect valuable safety metrics from our contractors, review safety processes and programs, and form an open line of communication between the CyrusOne safety team and the contractors. In addition, we are now able to report data for both our EU- and US-based facilities.

Information about [Employee Occupational Safety](#) and [Customer Safety](#) are covered in other parts of this chapter.

Construction Safety

Due to construction projects being a higher risk for serious injuries, supporting the safety performance of our construction general contractors is a top priority. We want to ensure that we not only get the best, but also the safest company for the job. There are three primary components to our Construction Safety Program: Prequalification, Metrics Monitoring, and Onsite Assessments.

Prequalification

Our process begins with the prequalification phase. To be considered for a project, all general contractors must first qualify by submitting evidence of strong and measurable safety performance. The safety prequalification is conducted by our team of EHS experts and results in the company receiving an overall score. Indicators we review include the level of safety support provided to projects, insurance indicators, injury rates, and evidence of a comprehensive safety program.

Metrics Monitoring

Once a construction general contractor is hired for a CyrusOne job, they are given requirements for safety metrics reporting. Safety metrics are to be submitted to the CyrusOne EHS department monthly. These monthly metrics include a blend of both leading and lagging indicators, such as injury rates and unsafe worksite observations. These monthly metrics are aggregated and scored with a minimum score that must be maintained. If a project drops below our target threshold or we identify a negative trend, CyrusOne implements a series of interventions. These interventions are intended to signal concern, ensure alignment on priorities, and lend additional resources to the project as necessary.

Onsite Assessments

CyrusOne also engages third parties to perform physical safety audits at our construction sites. The purpose of the third-party audit is to verify the status of the various safety management functions of the project, highlight areas where the general contractor meets or fails to meet minimum requirements, and identify management deficiencies to be corrected. This project safety management audit covers items such as:

- Safety leadership and planning
- Accident/injury prevention and management
- Safety training and communication
- Soft tissue injury prevention
- Safety monitoring and accountability
- General liability exposures and controls

Contractor Safety Metrics

These metrics represent CyrusOne's global reporting for construction contractors and operations contractors (i.e., facility management and security). In 2021, we have been able to add Europe-based contractors to our reporting. Definitions for each metric can be found in [Appendix 2: Primary Metrics \(Occupational Safety Metrics\)](#).

Metric: Contractor Injury Incidents

These metrics indicate the total count of injuries, categorized by severity.

Contractor Safety Metrics: Construction*		
Incident Counts	2020	2021
Number of Fatalities	0	0
Number of Recordable Cases	4	6
Number of Total Lost Workday Cases	1	3
Number of First Aid Cases	9	15
Number of Near Miss Incidents	1	33

**Data for 2021 includes both EU and US construction contractor data, however 2020 includes only US data.*



Contractor Safety Metrics: Operations*		
Incident Counts	2020	2021
Number of Fatalities	0	0
Number of Recordable Cases	4	6
Number of Total Lost Workday Cases	1	2
Number of First Aid Cases	9	3
Number of Near Miss Incidents	1	1

**Data includes US facility management contractors and US and EU security contractors. In the EU, facility management is performed by employees and is reported under Employee Safety.*



Metric: Contractor Injury Rates

These metrics normalize the metrics above to the amount of work performed that year to arrive at an injury rate. This is shown below as the performance metric per 200,000 hours worked (as is typical for US OSHA reporting).

Contractor Injury Rates: Construction*		
Incident Rates (per 200,000 hours worked)	2020	2021
Total Hours Worked	678,652	775,982
Lost Time Injury Rate	0.29	0.77
Total Recordable Incident Rate (TRIR)	1.18	1.55

**Data for 2021 includes both EU and US incidents, however 2020 includes only US.*



Contractor Injury Rates: Operations*		
Incident Rates (per 200,000 hours worked)	2020	2021
Total Hours Worked	1,192,275	1,397,611
Lost Time Injury Rate	0.17	0.29
Total Recordable Incident Rate (TRIR)	0.67	0.86

**Data includes US facility management contractors and US and EU security contractors. In the EU, facility management is performed by employees and is reported under Employee Safety.*





Norwalk (Connecticut)



San Antonio V (Texas)



When we open a facility, we ensure safety's already been brought into the picture. It's not an afterthought."

TAMMY LUTHER

Director of Environmental Health and Safety
Dallas, Texas

Talent Spotlight

Instilling a Safety-First Mindset

Tammy Luther's job as Director of Environmental Health and Safety for CyrusOne is never easy. It's also never routine, because it requires monitoring and managing human behavior and ever-changing regulations. Fortunately, she has a community to make it work.

"It's the employees at CyrusOne who make it happen," Luther said. "It doesn't matter if you're a technician or a director – everybody pitches in to get the work done. All that hard work shows in our safety metrics."

CyrusOne's incident rates are only a fraction of the average rates within the data center industry thanks to Luther's 30 years of experience and her ability to bring people together to embrace safety guidelines and practices.

"The motto I learned early in my career was to not go in and tell others how to do their jobs, because they're the experts in the job they've been hired to do," she said. "My role is to partner with them and ensure they have the education and tools they need to do their jobs safely."

The COVID-19 pandemic only added another variable for Luther to contend with. Once again, teamwork and support from every level within the company came into play. "That's what got me through it," Luther said. "I knew every day there would be challenges. There were cases coming in and possibly changes from the CDC, but I always knew the leadership was there to support me and the team. It wasn't just my decision; it wasn't just my interpretation. We did it as a team."

Responsibility to Our Employees

At CyrusOne, we aim to be a preferred neighbor and employer. We are committed to having a positive social impact on the communities we serve, attracting great talent, and building diverse and inclusive teams. In doing so, our efforts are focused on creating a culture of belonging, ensuring the health and safety of our teammates, and providing a work environment that promotes career development and community. We recognize that our 450 teammates are the foundation of CyrusOne and that we are stronger when we grow together. Our leadership ensures that each teammate gets what they need to thrive in their careers, help them grow, and contribute at their highest potential. We aim to be an employer of choice, with passionate, innovative, and fully engaged teammates. All of our teammates operate solely in developed democracies (the United States, Western Europe and Singapore) with strong human rights protections, so our risk of human rights issues related to employment is minimal.

Employee Engagement

Our company culture fosters an environment of engagement, honesty, respect, and growth. Listening to our teammates, collecting their feedback, and identifying ways to improve the employee experience helps to strengthen our culture. In 2021, more than 50% of our teammates participated in our Employee Engagement Survey.

Embracing Diversity, Equity, and Inclusion

We can most effectively support and serve our diverse customer base with a diverse and inclusive team. Our diverse workforce is a reflection of a changing world and marketplace that recognizes that there are many ways of seeing the world, solving problems, and working together. Our goal is not simply to create diverse representation within our employee population, but also to nurture an environment where all workers are treated equally and have opportunities to connect, belong, and grow. Diversity, Equity, and Inclusion (DEI) is a business imperative that helps us build and empower our future workforce while also doing our part to address societal challenges.

The pillars of our diversity strategy focus on:

- Shaping and nurturing a culture that embraces and values a diverse team
- Attracting, recruiting, and hiring diverse talent
- Onboarding, developing, and retaining diverse talent
- Community engagement to support diversity within our workforce

At a pivotal time in history, we recognize that proactive leadership is imperative in moving the needle concerning racial equality and social justice. Our employee-led Community, Agility, Respect, Enjoyable Workplace, Ethics, and Exceptional Service (CAREEEE) Group opens channels of communication across our company and creates an environment where listening and understanding different perspectives promotes a culture of increased awareness.

CEO Action for Diversity and Inclusion™ Pledge

In 2021, CyrusOne joined the [CEO Action for Diversity & Inclusion pledge](#). The pledge calls upon participating organizations to accelerate diversity and inclusion programs. Signing the pledge provides us with an enhanced framework to engage with stakeholders on DEI issues, bring third-party expertise to existing DEI efforts, and provide access to additional resources.

The pledge includes four commitments and we have taken action in 2021 in each area.

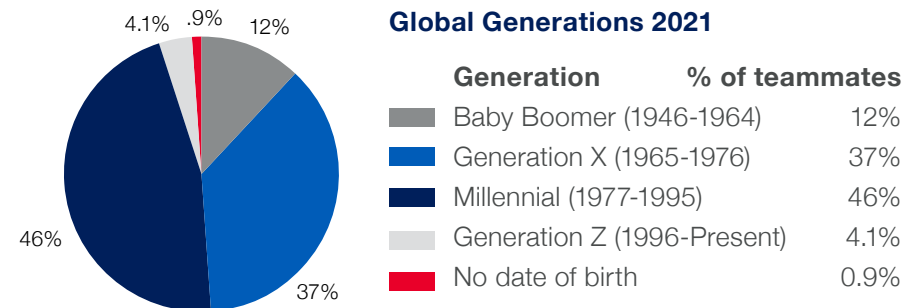
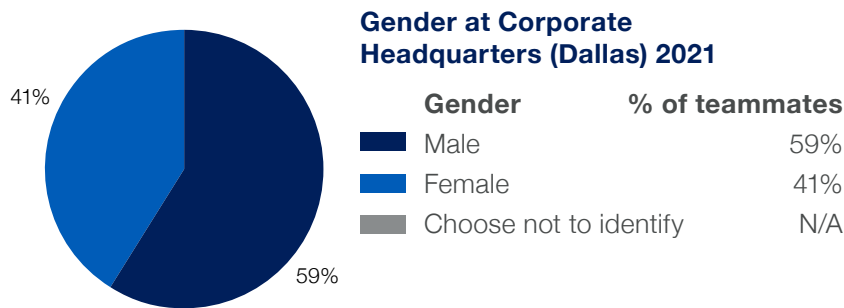
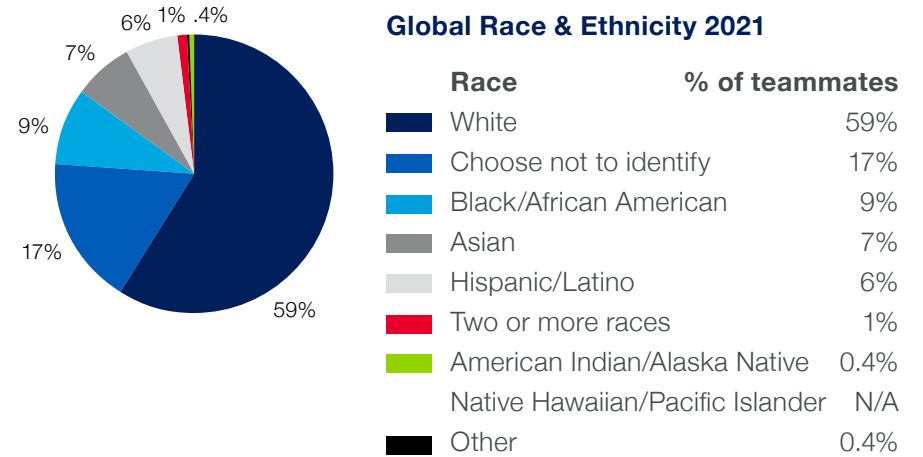
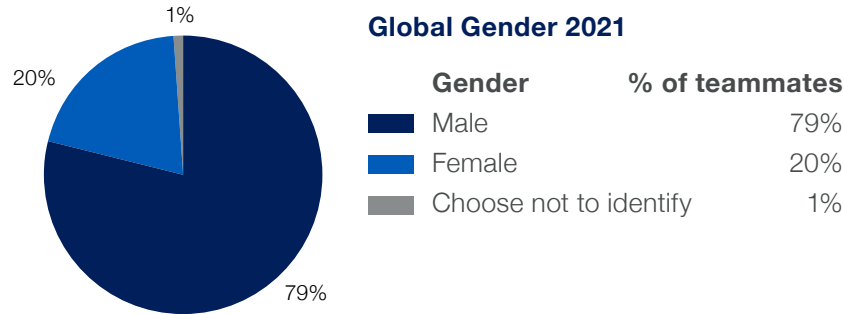
Pledge Commitment	CyrusOne Actions in 2021
Hosting candid conversations around DEI topics	<ul style="list-style-type: none"> • Senior Management Racial Injustice Listening Sessions • Monthly All-employee Meetings with a focus on DEI topics
Implementing/expanding DEI education	<ul style="list-style-type: none"> • More than 10 online diversity training courses available • Mandatory DEI compliance training for all employees
Engaging our board on our DEI strategy	<ul style="list-style-type: none"> • Shared our DEI Strategy with our Board of Directors
Sharing leading practices with others	<ul style="list-style-type: none"> • Participation in the NAREIT Social Responsibility Forum

92% of our teammates completed DEI compliance training in 2021, which includes content about unconscious bias.

Workforce Metrics Disclosure



We use our metrics to track progress toward achieving our strong goals for racial and gender equity and inclusion. Our talented team boasts an average tenure of 4.1 years and experienced a 12.28% voluntary turnover rate in 2021.



Employee Resource Groups

Employee-led groups are an important aspect of helping us create a diverse and inclusive work environment and helping teammates find ways to connect, belong, and grow. Recognizing that a key area of opportunity for CyrusOne is increasing talent acquisition and improving development opportunities for women, our Women's Resource Group (WRG) provides an inclusive environment that supports and encourages women to advance their skills and leadership potential through connection, networking, mentorship, collaboration, and discussion. This team is sponsored and chaired by four senior female leaders, including our Chief Financial Officer and our Senior Vice President of Operations.

Internship Programs

CyrusOne has a long history of supporting internship opportunities for underrepresented groups to help individuals develop business and technology skills, and build careers in the data center industry. These programs also help CyrusOne attract and recruit a more diverse talent pool.

This year, we expanded our summer internship program for underrepresented groups, sharing an intern with law firm BakerHostetler. The job-share program allowed our intern to develop expertise in various areas while experiencing different work cultures and finding mentors within both companies.



They were very willing and eager to help, and then they took an interest in my development and I very much appreciated that.”

CAYRO ALEX BUSTOS

Legal Intern
Dallas, Texas

Talent Spotlight

Sharpening his Legal Skills on the Job

Internships are a vital part of any company's talent pipeline and often the launching point of a great career, providing insights and experiences academia rarely offers.

That's why we were excited to host legal intern Cayro Bustos for six weeks in summer 2021 as part of a job-share with one of our key law firms, BakerHostetler. Bustos, a second-year law student at Southern Methodist University in Dallas, joined our legal department to learn about our industry and sharpen his legal skills.

“There was a steep learning curve, so the most important thing I learned was to always ask questions because everything is new,” he said. “A lot of lawyers will attest to this – there's a disconnect between law school and the practice of law. Once you get your toes wet and start diving into the work, it gets easier. But you have to be OK with being uncomfortable and you cannot be afraid to ask questions.”

Bustos credits CyrusOne for making him feel comfortable asking those questions of our legal team and making it easy to learn. His internship also confirmed his desire to go in-house when he finishes his law degree.

“I want to work within the legal department at a company or business,” he said. “I have a lot of interest in business and the legal space, and being in-house can really help you merge both of those aspects. It's an interesting challenge to help a company navigate through ever-changing legal landscapes.”

Collective Bargaining

CyrusOne recognizes the right of teammates to participate in collective bargaining if they desire. As of 2021, no CyrusOne employees are represented by an independent trade union or covered by collective bargaining agreements.

Ensuring a Harassment- and Discrimination-Free Workplace

Congruent with our company values and our policy against harassment and discrimination in the workplace, we aim to maintain a work environment free from all forms of harassment and retaliation. We affirm the fundamental principle that everyone is entitled to fair treatment and equal opportunity without discrimination on the basis of any characteristic such as race, ethnicity, color, nationality, gender, sexual orientation, gender identity, age, language, religion, creed, social status, or disability. We expect a workplace where customers, teammates, suppliers, business partners, visitors, and shareholders are treated with dignity, respect, and courtesy. All teammates are provided with transparent, respectful, and confidential avenues to bring forth concerns or workplace misconduct, including a 24/7 ethics and compliance helpline. The law and policies of CyrusOne prohibit disparate treatment on the basis of sex or any other protected characteristic, with regard to terms, conditions, and privileges of employment.

Human Capital

One of the ways we grow our company is by attracting, retaining, and developing talent. This section lists our efforts to offer competitive, modern benefits, and provide training and development opportunities.

Employee Compensation and Benefits

CyrusOne offers a Total Rewards package that is market competitive and performance-based, including salaries, bonuses, and a wide range of benefits to support our teammates and their families' health and well-being, including:

- Medical, Dental, and Vision Coverage
- Life & Accidental Death & Dismemberment (AD&D) Insurance
- Employee Stock Purchase Program
- Retirement Savings Plan (401k) with Company Match
- Parental Leave

- Employee Assistance Program
- Caregiver Benefits
- Health Savings Account
- Flex Spending Account
- Telemedicine
- Short- and Long-Term Disability Insurance
- Ten Paid Holidays and a Volunteer Day
- Flexible Work Schedule

ESG-based Compensation

As our teammates have become more informed and educated in all areas of corporate sustainability, we have integrated sustainability metrics into our annual bonus including progress on renewables, energy efficiency, and DEI initiatives.

In 2021, we added Juneteenth as a holiday for CyrusOne teammates, bringing the total number of paid holidays each year to 10.

Our Commitment to Pay Equity

CyrusOne believes that our teammates should be paid fairly and equitably, regardless of their gender, race, or other personal characteristics. We benchmark and set pay ranges based on market data via the Radford Global Compensation Database and Nareit and consider factors such as an employee's role, location, and performance. Our teammates receive annual compensation reviews, where base, bonus, and long-term incentives are all considered.

Employee Training and Development

We are committed to helping teammates reach their full potential and strengthen technical, professional, and leadership skills at every level throughout their careers. We focus on developing our teams through onboarding and assimilation training, ongoing education, experiential learning, and ongoing performance feedback.

Throughout the pandemic, our talent acquisition and HR orientation processes became fully managed remotely. This new approach strengthened our ability to convey our culture, values, office environment, and vision in a



STEVE HAYWARD
Senior Director, Regional
Operations
London, UK



This industry is so fast-paced that having 50 years of legacy experience is great, but those 50 years probably don't actually relate to what we're building today."

Talent Spotlight

Keeping the Talent Pipeline Full

The world needs data centers to create the connectivity that modern life and work demand. Data centers, in turn, need highly qualified people to run them efficiently and sustainably, but the industry faces a labor crunch and skills gap that requires rethinking how the sector recruits and attracts fresh talent.

Senior Director of European Operations Steve Hayward considers it part of his mission at CyrusOne to renew the talent pipeline and boost recruitment, showing potential job candidates that the industry offers genuinely rewarding career paths.

As part of the Digital Futures Programme, Hayward helped spearhead a partnership between CyrusOne, the University Technical College (UTC) Heathrow, and techUK to create the first Data Center UTC in the United Kingdom. He also presented his thoughts about this partnership to the UK's House of Commons.

UTC Heathrow redesigned its existing curriculum to allow students to gain the essential knowledge and skills needed to thrive in technical careers within the data center industry. CyrusOne serves as a key partner and helped to define the syllabus. Our employees also deliver content, teach, and provide work experience and apprenticeship training.

This is the first time that UK mainstream education and the data center industry have worked together to provide a clearly-defined path into the sector. It will increase the number of students with the necessary skills to meet our technical needs while raising awareness of the data center industry an attractive career opportunity.



Digital Futures

"If I can take really solid STEM students who are achieving good grades and get hold of them young enough – actually train them from the start as data center engineers – think how fantastic the talent pool will be in 20 years," Hayward said. "You give them the broad-based training and then say, 'Now you are a genuine specialist. You know more about these buildings than anybody else in the industry does right now because you've been immersed in it.'"

CyrusOne is committed to workplace training and development elsewhere as well. As a member of the Data Center Coalition, we also contribute actively and passionately to the data center industry's efforts to address the skills gap and welcome future colleagues to the industry.



virtual manner, providing a transparent and true sense of who CyrusOne is as an employer while making new teammates feel valued and welcomed.

Our learning management system also provides our teammates with more than 800 courses on a vast array of topics that can assist them with their ongoing professional development. This online tool includes our mandatory annual compliance training courses, which focus on topics including data protection, HIPPA privacy, emergency response plans, ethics and values, code of conduct, and Diversity, Equity, and Inclusion (DEI). In 2021, our teammates spent more than 3,000 hours completing online training. For detailed lists on specific training topics, please see the [Ethics](#), [Privacy](#), [Business Continuity](#), and [Employee Occupational Safety](#) sections of this report.

Our leadership team reviews the performance and potential of our team each year as part of our “Talent Day” process, which includes developing succession plans within our organization and clear professional development plans for our talent.

This year, CyrusOne teammates completed more than 3,000 hours of online training.

Employee Occupational Safety

At CyrusOne, we view the health and safety of our teammates as a fundamental value. Eliminating injuries requires teamwork, focus, and a continuous improvement mindset. We have aligned our practices with ISO 45001 international safety standard with six areas of focus: leadership and worker participation, planning, support, operation, performance evaluation, and improvement.

CyrusOne takes a methodical, systems-based approach to health and safety, which has resulted in world-class performance, including high productivity, high employee morale, low injury rates, low worker’s compensation costs, and a low average cost of injury. This year, we are proud to have achieved a major milestone: one million consecutive hours worked by CyrusOne teammates without sustaining a lost time injury.

Information about our efforts to improve [Contractor Safety](#) and [Customer Safety](#) are covered in other parts of this chapter.



In April 2021, we achieved one million consecutive hours worked by CyrusOne teammates without sustaining a lost time injury.

Strategy

CyrusOne understands that as an employer, we have a duty to our teammates to create and invest in a workplace that is free from recognized hazards. At CyrusOne, we live by our CAREEE core values. As seen in these core values, we are here to improve the lives of our stakeholders, shareholders, communities, and teammates.

Creating a safe workplace is not only the right thing to do; there’s also a business case for safety as it helps to save the company money by lowering workers’ compensation and medical expenses, avoiding regulatory penalties and citations, and avoiding potential lawsuits. We also recognize that when teammates are working in an environment that is free from hazards, they are less likely to leave to find employment elsewhere and will be more productive at work.

All in all, we are “Safe by Design” and strive to protect and improve the health, safety, and well-being of all our teammates through our health and safety program.

Risk Management

As a company, we aim to achieve excellence when it comes to our health and safety program and performance through several layers of risk management and planning: our written EHS programs; training; assessments/audits; hazard recognition, evaluation, and control; and incident management.

Written Programs

CyrusOne has a wide range of written EHS Programs that serve as the backbone of our successful EHS performance. These programs help ensure that we not only follow regulatory standards, but that we also have plans in place to go above and beyond such standards. Our written programs are reviewed at least annually to make sure they are kept up to date. For a detailed list of our written EHS programs and additional information, please see our [Health & Safety website](#).

Training

CyrusOne takes pride in our EHS training program. Along with on-the-job training, our online training courses follow best practices and local standards, such as OSHA standards set forth in 29 CFR 1910 (General Industry). New training courses are available monthly and we work to ensure 100% of our teammates complete the trainings. Our EHS training program is continuously improving to ensure the information provided in these trainings is up to date, comprehensive, and relevant to the job being performed. For a list of EHS training topics and additional details on our training program, please see our [Health and Safety website](#).

Hazard Recognition, Evaluation, and Control

To prevent incidents from occurring and to maintain a safe working environment, recognizing, evaluating, and controlling hazards is of utmost importance. Our two primary tools for this are our Job Hazard Analysis (JHA) and Near Miss programs.

Job Hazard Analysis (JHA) Development: Our JHA program allows for hazards to be properly identified and helps to ensure that certain steps or procedures are put into place to mitigate such hazards. With potential hazards being mitigated through JHAs, many incidents and near misses can be avoided. Our JHAs are continually being reviewed and expanded to ensure that the information remains up to date for the tasks performed by our teammates.

Near Miss Program: Our Near Miss Program helps to proactively identify potential hazards before an injury event ever occurs. Available to all CyrusOne teammates, this program allows for near misses to be easily reported and documented online. In analyzing and correcting near misses, we can identify areas that need improvement and prevent incidents from occurring.

Incident Management

All EHS related events are reported and documented, whether it is an injury, environmental event, property damage, or a general liability case. All stages of the incident investigation process are fully documented through our enterprise safety information management system. For more details on our Incident Management process, please see our [Health and Safety website](#).

Facility Assessments

To ensure compliance of our facilities, each of our data centers undergoes an in-depth annual EHS assessment led by our team of experts. These


assessments help to ensure that our facilities are both in compliance with local standards, such as 29 CFR 1910, and follow all CyrusOne’s health and safety programs and policies. This also is in alignment with ISO 45001 Plan Do Check Act cycle, giving us the ability to check our performance and act to improve it. To learn more about our assessment process, please visit our [Health and Safety website](#).

Metrics and Targets

These metrics measure the health and safety outcomes for all CyrusOne teammates. A description of each metric and formula is found in [Appendix 2: Primary Metrics \(Occupational Safety Metrics\)](#). Metrics for contractors can be found in the [Contractor Safety](#) section.

Metric: Employee Injury Incidents

These metrics indicate the total count of injuries categorized by severity.




Employee Injury Incidents			
Performance Metric	2019*	2020	2021
Number of Fatalities	0	0	0
Number of Total Recordable Cases	8	1	4
Number of Lost Workday Cases	3	0	1
Number of Restricted/Transfer of Duty Cases	2	0	0
Number of Other Recordable Cases	3	1	3
Number of First Aid Cases	1	0	1

**2019 data for EU operations is not included in incidents or hours worked.*

Metric: Employee Injury Severity

These metrics indicate the severity of the metrics reported above, as measured by how many days an employee spends away from work recovering or on restricted duty to allow healing at work.



Employee Injury Severity			
Performance Metric	2019*	2020	2021
Number of Days Away from Work	178	0	36
Number of Restricted/Transfer Duty Days	215	0	116

**2019 data for EU operations is not included in incidents or hours worked.*

Metric: Employee Injury Rates

These metrics normalize the metrics above to the amount of work performed that year to arrive at an injury rate. This is shown as the performance metric per 200,000 hours worked below (as is typical for US OSHA reporting).



Employee Injury Rates			
Performance Metric per 200,000 hours	2019*	2020	2021
Total Hours Worked	822,635	860,942	911,990
Lost Time Injury Rate	0.73	0	0.22
Days Away Restricted or Transferred (DART) Rate	1.22	0	0.22
Total Recordable Incident Rate (TRIR)	1.94	0.23	0.88

*2019 data for EU operations is not included in incidents or hours worked.

Metric: Chemical Spills

These metrics indicate the spills of chemicals (including fuels) that could impact local health or the environment.

Chemical Spills			
Performance Metric	2019	2020	2021
Reportable Spills with Environmental Impact	0	0	0
Reportable Spills without Environmental Impact	0	1	0

Scope: Includes major spills that require reporting to local agencies, whether they resulted in environmental impact or not.



“ For me volunteering is not just giving. I instantly receive contentment and joy when giving my time, and that keeps me going.”

THEINT AUNG
 Senior Commercial Accountant
 London, UK

Talent Spotlight
Giving Back by Making a Personal Connection

Giving back to the places where we work and live is core value at CyrusOne. And without a doubt, Theint Aung, who works as a Senior Commercial Accountant in our London office, embodies that value. So much so that she was recently awarded a CyrusOne CAREEEE Award for all the work she does as a volunteer in her community.



Selling food to raise funds for refugees

Theint regularly contributes her time to benefit many different causes, including donating food at charity fundraising events and working with the elderly. “I try to volunteer every other weekend,” she said. This year, she has volunteered to support various groups providing humanitarian aid to the estimated 230,000 people displaced by violence and fighting in Myanmar. She has also volunteered with a group called Helpforce through which Theint picks up medications and COVID-19 test kits for people in need and accompanies patients to their medical appointments. When she’s not doing that, she helps out at local vaccination centers.

“I was very surprised but then very grateful when I received the award,” she said. But it’s clear that her motivation to make a positive impact comes from within. “I feel grateful to be able to help, as I feel like I’m giving something back to the community and the country which has given me freedom and opportunities,” she said.

Responsibility to Our Customers

CyrusOne is a trusted partner to the world's leading companies and we work with each of our customers to improve their operations, economic performance, and sustainability goals. Our responsibility to customers begins with delivering a great product with great customer service. But because we are part of our customers' supply chains, we recognize we also have a responsibility to help them move their sustainability and social goals forward while ensuring their safety while they are at our facilities.

Customer Safety

Just as we prioritize the safety of our teammates (see [Employee Occupational Safety](#)) and partner with contractors to work safely at our sites (see [Contractor Safety](#)), our focus on safety extends to our customers who share our colocation spaces. To provide shared guidelines, we've developed a [Customer Safety Handbook](#). This Handbook outlines general safety rules, as well as topic-specific considerations, such as safe ladder use, electrical safety, fire prevention, and material handling. These rules all have one thing in common: they are there for the safety of all who work in or operate our data centers.

Customer Satisfaction

At CyrusOne, we put the experience of our customers at the center of everything we do. Our highly responsive team is committed to providing a trusted layer of service and counsel, and we collaborate with our customers to co-create the right solutions to meet their specific needs. One of the foundations of our approach is listening to and acting on client feedback. Our approach consists of:

- 1. Surveying customers for feedback:** We regularly survey our customers for feedback on our service and support and occupant comfort at our facilities, among other topics.
- 2. Investigating and resolving issues:** When customer feedback identifies an issue, we take steps to investigate the root causes and make improvements to address the issue.
- 3. Communicating progress:** We follow up with customers on the improvements we make and to demonstrate their feedback is valued.

In 2021, in addition to our regular ticket-based surveys, we conducted a more comprehensive survey of our customer portfolio. More than 2,300 individuals were invited to provide feedback to CyrusOne on aspects including account

management, billing and invoicing, facility operations, our Global Service Desk, physical security, and service delivery. This portfolio-wide survey generated valuable insights from 162 of our customer accounts.

Responsibility to Our Communities

We manage more than 50 data centers around the world. Each one of them operates within a local community, where we do business and where our teammates live, work, and raise their families. While we are a global company, we must also think locally, taking responsibility to positively impact the communities where our facilities are located. When we take time to volunteer, contribute to a local organization, or just meet with our neighbors and get to know each other, we are contributing to the overall wellness and connectedness of our communities.

Strategy

Building Networks of Resilience

In 2021, we undertook an effort to develop a more cohesive and comprehensive community investment strategy for the company. We considered how CyrusOne could make a greater impact in the communities in which we operate, in a way that is in line with our core business and mission, and is meaningful to our key stakeholders, especially our teammates, customers, and community members.

Recognizing the vast amount of change and disruption that communities around the world face every day as a result of climate change, social injustice and inequity, and the stresses—economic, emotional, and physical—related to the COVID-19 pandemic, we saw an opportunity to focus our efforts and investments on building more resilient communities. At CyrusOne, building resilience into our business is a core competency of our teammates and crucial to our success. We believe we have a great deal to contribute by extending our efforts outward into our local communities.

Specifically, we intend to develop volunteering and giving initiatives and target our philanthropic support in three specific areas where we can help build Networks of Resilience:

- 1. Building a resilient workforce:** To give our teammates and contractors the support and inclusive environment they need to adapt to changing business and world conditions, and to nurture new talent through internships and training programs.

- 2. Building resilient community networks:** To help our communities weather unexpected shocks and downturns, such as those that have been impacted by natural disasters or are facing food insecurity.
- 3. Building resilient ecological networks:** To give communities (both human and wildlife) access to water and a healthy, biodiverse habitat and to minimize the effects of climate change.

Our new strategy builds upon work that has been in motion for many years. For example, see our [Biodiversity](#) section for details on our habitat restoration and wildlife protection projects or our history of donating to local food banks. In 2022, our team will begin the work of activating our new community investment strategy in a broader way.

Community Engagement

Being a Good Neighbor

We recognize that our operations can have both positive and negative impacts on the communities in which we operate. While we strive to make an overall positive impact, at the bare minimum, we seek to do no harm. We listen to our neighbors and take action on their feedback if and when our operations are affecting their lives. When we get complaints, such as for noise coming from our operations, we make it a point to engage with neighbors rather than retreating behind the letter of the law. We listen to their point of view and then work to remedy issues so we will continue to be welcome members of the community.

Employee Giving and Volunteerism

Community is central to our company CAREEE core values. We believe in giving back to the communities in which we do business. Each year, our teammates are provided eight paid hours for volunteering within their respective communities. Through company-sponsored events and on their own, many of our teammates make time to work alongside our neighbors to make the community a better place.

This year, CyrusOne teammates participated in several events to support the Community Partners of Dallas (CPD), a nonprofit that addresses the needs of abused children. They packed school supplies and backpacks for students in the Dallas Independent School District and supported the annual Toy Drive, among other events. Our teammates also helped



raise funds for the Houston Food Bank and helped to host an electronics recycling drive at a CyrusOne facility in partnership with CompuCycle. In all, two truckloads and more than 13,300 pounds of electronics were diverted from landfills.

Corporate Giving

As a company in the data center industry, we see the need for skilled, technical talent firsthand—almost every day. This year, our corporate giving concentrated on partnerships and investments in developing students with science, technology, engineering, and math (STEM) skills.

Notably in October 2021, CyrusOne Inc. announced a partnership with University Technical College Heathrow (UTC Heathrow) and techUK to create the first Data Centre UTC in the UK, as part of the recently launched Digital Futures Programme. The program is designed to address the data center industry's long-term skills gap, and give students the essential knowledge and skills needed to thrive in technical careers within the data center sector. As a part of our partnership, CyrusOne, alongside other industry partners, will deliver content, teach, and provide work experience placements and apprenticeship training for program graduates.

In addition, we supported STEM education with the CyrusOne Leadership and STEM Achievement Scholarship, awarded to two students at Allen High School in Allen, Texas. This scholarship is awarded to students who have demonstrated strong academic and leadership skills, and are planning a career in a STEM-related field.

CyrusOne is also proud to have supported a number of local educational and nonprofit organizations, including the Tarwater Elementary School in Chandler, Arizona; the Spirit of Courage Cancer Center Charitable Patient Care Fund, the Bartlesville Regional United Way, the Lymphoma and Leukemia Society, and Northern Virginia Community College. We also continued our title sponsorship of the Society for Information Management (SIM) Houston charity golf tournament, which raised funds to support Genesys Works and Houston Baptist University via scholarships and technology-related programs.

Metrics and Targets

To support our new strategy to build Networks of Resilience, we will develop and announce key performance indicators and goals over the next year.

CyrusOne teammates saved more than 13,300 pounds of used electronics from going to landfills by hosting an electronics recycling drive.



MARCELL TURNER
Implementation Manager
Houston, Texas



I've been very blessed to be in the position that I'm in now, so I have no choice but to give back to the community."

Talent Spotlight Stepping Up for Community Health

By the time he was six, CyrusOne Implementation Manager and natural-born athlete Marcell Turner had played all the major sports. If not for an injury his senior year of high school, he would have played college football for Duke University. But he never lost his passion for fitness, competition, and staying active, and his career success inspired a sense of gratitude.

"I've been able to find my purpose through the last several years, and that prompted me to get into giving back to the community since CyrusOne gave me so much opportunity," he said. "How better to help the community than to share some of the gifts that I was provided at a young age?"

Turner launched the TFIT Walk/Run event in Amarillo, Texas, in 2019 to bring health and fitness awareness to the community.



2019 TFIT Walk/Run - Amarillo, Texas



2021 TFIT Walk/Run - Amarillo, Texas

The event is open to everyone, regardless of age or background. "In our community, especially in minority communities, there's a disparity when it comes to health and trust," Turner said.

In the event's first year, 50 participants ranging from age 5 to 80 got up and moving and learned about healthier lifestyles, including better nutrition. The TFIT Walk/Run went on hiatus in 2020 due to the COVID-19 pandemic, but it returned in 2021. Turner is now planning the 2022 event, which is growing thanks to broader community support from regional political leaders and six former NFL players.

"This year, I want to focus on mental health issues in addition to nutrition," Turner said. "Then in the future, I also want to start different chapters around the world where CyrusOne operates to get more participants involved in this venture."

When CyrusOne recognized his efforts with our Volunteer of the Year Award, Turner once again saw an opportunity to give back. He donated the award money to a local sorority to help fund scholarships.

By giving, we receive. Turner said the rewards for his efforts have been friendship, camaraderie, and fellowship. "Bringing people together has been awesome," he said. "I've reached out across the board to different cultures, different venues, and different backgrounds."

"I see the event growing even more exponentially this coming year, and it has confirmed my purpose, not only in corporate life – it also bleeds over into my lifestyle. Because fitness is a lifestyle."



Appendix 1: Methodology

Appendix 1: Methodology

Materiality Assessment

Process

We surveyed all members of our Sustainability Working Group, select experts in the company who could represent specific topics or stakeholders, and four external experts. Based on guidance from GRI and this survey information, we determined if a topic was 1) important to stakeholders and 2) impactful to the environment or society. These two factors then determine what we do and do not report.

Materiality

To determine what could be considered *material*, we had to answer three key questions: what, where, and when? For *what*, we looked across industries to determine what impacts our industry contributes to most. In *where*, we considered the locations in which we operate to ensure that we are sensitive to local or regional issues. Finally, for *when*, we assessed topics both as they are now and as they are projected to be in 10-20 years.

Importance to Stakeholders

To determine the importance of a topic to stakeholders, we evaluated the degree to which each type of stakeholder has conveyed concern about each topic. The scores were then weighted to reflect our strategic focus on the customer. For this first assessment, stakeholders are defined as customers, investors, and communities. In the future, we may try to include additional stakeholders, such as teammates (employees), non-governmental organizations (NGOs), or suppliers.

Impact on the Environment or Society

To determine our impact on the environment, we again asked three questions: what is our impact on human health and habitat, what is our impact on scarce resources, and what is our impact on climate? The scores were then weighted to provide a final impact score. For impact on society, we relied on our external experts to weigh the impact on society against a variety of factors.

Climate Risk

Future Flood Risk Assessment

US Properties

All US properties were assessed with the [Flood Factor Tool](#). Based on the property's address, the tool issues a score of 1-10 (10 being the maximum risk) indicating the probability of a flood occurring and the depth of the flooding (i.e., a higher score indicates that the property is either more likely to flood, the flood height will be higher, or both). A full description of its methodology can be found [here](#).

If the tool was unable to locate the property from its address, we used a nearby location. These locations were never more than a couple of buildings away or across a road. This occurred for 18 properties, the majority of which scored a 1 (*low risk*). Scores of 1-2 were categorized as *low risk*, scores of 3-5 as *low-medium* and 6-7 as *medium-high* risk. No scores were in the 8-10 *high* risk category.

UK Properties

All UK properties were assessed using UK government [Flood Risk Tool](#). The tool assesses an area's flooding risk from rivers and sea as well as from surface water. Reported risk is a function of the probability of flooding and the consequences of flooding (be that environmental, economic, human health, etc.). The tool's full methodology can be found [here](#). All UK properties scored *low* or *very low* in both flooding risk from rivers and sea, as well as from surface water, and were therefore included in the report's *low* risk bucket.

Remaining Properties

The remaining properties were evaluated using country-specific reports and tools. The Amsterdam property was assessed with this [governmental report](#). The Dublin property utilized this [online tool](#). The Frankfurt properties utilized this [study](#) from 2010 and this [study](#) from 2016. Finally, the property in Singapore was assessed with [this government tool](#). For each of these properties, the method was unable to tie a level of risk with a particular address. Rather, the general location of the property (often the city or region) was used to match the granularity of the study. All of these sites were in the low categories of risk from their respective evaluation and were therefore included in the report's *low* risk bucket.

Carbon Pricing Risk Assessment

To cover the range of likely possibilities, we looked at three carbon price scenarios. The first is based on a key customer's current self-imposed internal carbon price of \$15/ton. This is the *Voluntary Scenario*. [Economic estimates](#) conclude that in order for countries to meet the commitments to the Paris Accord through carbon taxes, they will need to impose carbon taxes in the range of \$50-100/ton by 2030. Based on this, we selected two other scenarios we named *Paris low* and *Paris high*.

- *Voluntary* price: \$15/ton
- *Paris low* price: \$50/ton
- *Paris high* price: \$100/ton

It is highly unlikely that a carbon tax would be levied directly on CyrusOne; instead, it will likely increase the cost of energy and raw materials. We analyzed the impact of these increases on CyrusOne's business activity, including both facility construction and operations. We then applied these impacts on a per-facility basis to compare the potential energy price increases to each facility's current electricity price. Then, we considered the different styles of customer contracts to understand, at the facility level, how much the carbon price would affect (1) our direct expenses, and (2) our competitive position (by passing through to our customers). This per-facility analysis also gave us a way to calculate the benefit of new renewable electricity contracts in reducing carbon pricing risk.

Energy

Energy Source Scoping

Our operational energy-use calculations include four sources:

1. CyrusOne electricity for server support and common areas
2. Customer electricity for their servers in our data halls
3. Natural gas for comfort heating (only used at some facilities)
4. Diesel for emergency backup generation at all facilities

These data are combined into a common unit, kWh (using standard conversion factors for natural gas and diesel from the European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector). The energy-use data in this report covers all global facilities where we exercise operational control. Facilities that we do not include are those operated by our customers (such as San Antonio IV) or the few leased facilities where we do not have operational control (London-Woking, International Business Park in Singapore, and our HQ office suites). We anticipate that all directly managed facilities built in the future will be included in our scope of operational control, and we will clearly state any exceptions to this rule.

Energy Inventory

The table below summarizes how we group different energy types into our metrics.

Energy Inventory Categories	
Fuels	
Non-renewable	Diesel (1 US gallon = 40.8 kWh) Natural gas (1 therm = 29.3 kWh) Hydrogen from nonrenewable sources
Renewable	Biodiesel, renewable diesel, biogas, green hydrogen
Electricity (CyrusOne support equipment AND customer server loads)	
Non-renewable, Zero Carbon	Thermoelectric from nuclear
Non-renewable, Fossil Fuel	Thermoelectric from coal, oil, gas
Renewable	Solar, wind, hydroelectric, geothermal
Renewable Electricity Procurement Types	
Direct	PPA, Green Tariff, retail product, direct generation, VPPA
Renewable Certificates	Unbundled RECs, Guarantees of Origin, and other Energy Attribute Certificates (both National and Regional)
Grid-embedded	Percentage delivered in grid generation resource mix
Customer Procured	Renewable electricity we have confirmed was procured by our customers for their server electricity and cooling in our facilities.
Other Imported Energy	
Non-renewable	Offsite steam, district heating, district chilled water, etc.
Renewable	Above, generated from renewable energy

Climate Impact

Greenhouse Gas Inventory

Our greenhouse gas (GHG) inventory accounts for greenhouse gas emissions from electricity, diesel, and natural gas. This includes direct emissions from our operations (Scope 1), purchased electricity (Scope 2 for both our own operations and our customer server equipment), and indirect emissions, including those from our energy supply chain, employee travel, and customer-operated data centers (Scope 3). Our Scope 1 emissions come from burning diesel in backup generators and natural gas in facility comfort heating. We do not purchase any Scope 2 energy other than electricity (such as district heat or chilled water).

The GHG inventory data in this report covers all of our global facilities where we exercise operational control. Facilities that we do not include are those operated by our customers (such as San Antonio IV) or the few leased facilities where we do not have operational control (London-Woking, International Business Park in Singapore, and our HQ office suites). We anticipate that all directly managed facilities built in the future will be included in our scope of operational control, and we will clearly state any exceptions to this rule.

Following the WRI Greenhouse Gas Protocol, our GHG Inventory evaluates the major greenhouse gases: carbon dioxide, methane, nitrous oxide, refrigerants, and sulfur hexafluoride. Sulfur hexafluoride was evaluated and does not apply to our operations. All emissions are reported in carbon dioxide equivalents – based on the global warming potential of each gas relative to carbon dioxide, as determined by the US EPA.

Our earliest year of available complete data is 2018, which also serves as our baseline year. We are seeking to expand our access to historical data before 2018 so we can re-evaluate our baseline year.

Scope 3 Estimates

Our Scope 3 emissions are carbon emissions from CyrusOne's indirect sources. Below are our Scope 3 sources and the methodology that we used to calculate the carbon emissions from each:

- **Construction Materials (Capital Goods):** Estimated from industry averages for concrete, steel, and other metals.
- **Fuel and Energy-Related Activities:** Estimated using industry averages for fuel extraction, refinement, and transport, as well as electrical generation, transmission, and distribution.
- **Business Travel:** Estimated using [WRI Mobile Source Tool](#) and estimates of company flights per employee per year.
- **Employee Commuting:** Estimated using [WRI Mobile Source Tool](#) with company-wide estimates of miles commuted by teammates in passenger vehicles.
- **Customer-Operated Facilities (Downstream Leased Assets):** Measured from customer-operated (indirectly managed) facilities that report energy data.

Water

Water Risk Assessment

Our Water Risk Assessment takes a three-step approach to understanding CyrusOne’s specific risks and opportunities associated with water supplies. In our assessment, we evaluate three views into the relationship between water and CyrusOne’s operations:

- 1. Regional Water Stress:** The balance of regional supplies of water versus regional demand for water, both now and with projections for the future (2030 and 2040). This stress is shared by all companies that operate in the region.
- 2. Facility Water Use:** How much water CyrusOne facilities use in a year.
- 3. Facility Water Risk Exposure:** The combination of Regional Water Stress and Facility Water Use, indicating how much exposure each CyrusOne facility has to the regional risk.

Regional Water Stress helps us understand which regions are now or will soon be high risk, which is useful for both current facilities and site selection for new facilities. Understanding Facility Water Use can help us focus our attention on the current largest users of water and identify where improvements in water efficiency would be most beneficial. Finally, the Facility Water Risk Exposure identifies which facilities use significant amounts of water in high water-supply-stressed regions. Some CyrusOne facilities in high-stress regions do not use much water and thus are not exposed to that region’s risk, while other sites might use significant amounts of water in areas where water is plentiful. Neither of these is of particular concern. Instead, it is important to identify high-use sites in high-stress areas.

Regional Water Stress

Because water stress varies greatly by location, it is important to understand both the current and projected future water stress at each site. The World Resources Institute, a global research organization focused on sustainable management of natural resources, provides the definitive tool for evaluating water risk in its [Aqueduct Water Risk Atlas](#). In WRI’s words, “The Atlas uses a robust, peer-reviewed methodology and the best available data to create high-resolution, customizable global maps of water risk.” It is currently in version 3.0.

Facility Water Use

To perform a water risk assessment, we first needed to know how much water is consumed by CyrusOne sites. This was gathered from utility bills or reported by facility managers. Water is reported by different water agencies in different units. The conversion factors used for each unit of measurement are listed below.

Water Conversion Factors		
Abbreviation	Unit of Measure	Gallons per Unit
gal	gallons	1
CCF	hundred cubic feet	748
HCF	hundred cubic feet	748
kgal	thousand gallons	1,000
AF	acre-feet	325,851
L	liters	0.264
KL	kiloliters	264
m ³	cubic meters	264

Facility Water Risk Exposure

The next step was to analyze the intersection between water risk and water consumption for each location (the water risk exposure). We brought these factors together to create a heat map of locations showing the intersection of regional water stress (current and future) and CyrusOne’s facilities’ water withdrawal in total gallons.

Scoping

Our 2021 Water Risk Assessment evaluates the current water stress for all of our facilities and the predicted water stress in 2030 and 2040. We also calculate total water use at the facilities for which we have data (94.4% of building area) to determine each site’s exposure to regional water risk. For our leased facilities where water use data is not available (5.6% of building area), we can only monitor the regional risk, not the facility-specific risk. For this assessment, we consider all water withdrawal for our facilities regardless of the end use of the water (evaporation or discharge).

Biodiversity

Environmental Impact Assessments

Environmental Impact Assessments are performed while evaluating a property for purchase. These are conducted to the standards of the countries in which CyrusOne operates, but all share similar components. In the United States, for example, we start with a Phase I Environmental Site Assessment (“Phase I ESA”). The intent of a Phase I ESA is to assess whether current or historical property uses have impacted the soil or groundwater beneath the property and could pose a threat to the environment and/or human health.

A Phase I ESA typically includes the following:

- A site visit to observe current and past conditions and uses of the property and adjacent properties.
- A review of federal, state, tribal, and local regulatory databases including, but not limited to, underground storage tanks (USTs), aboveground storage tanks (ASTs), known or suspected release cases, the storage of hazardous substances, and disposal of hazardous wastes including petroleum products and institutional and engineering controls.

- A review of historical records, such as historical aerial photographs, fire insurance maps (Sanborn maps), historical city directories, and historical topographic maps.
- A review of state and local agency records including, but not limited to, state environmental agencies, Building Departments, Fire Departments, and Health Departments.
- Interviews with current and past property owners, operators, occupants, or others familiar with the property.

If the Phase I ESA identifies a recognized environmental condition, we proceed to a Phase II Environmental Site Assessment to collect soil, groundwater, and soil vapor samples from the subsurface to analyze for the presence of contamination.

Protected Areas Assessment

After a property has been purchased and is in operation, we monitor for changes to surrounding areas to check if any areas have become protected since purchase. This assessment is conducted annually using map searches for each facility. Changes in the designation of surrounding areas lead to deeper research as to the nature of the change and whether it represents a protected habitat of any sort.



Appendix 2: Primary Metrics

Appendix 2: Primary Metrics

As described in the [Introduction](#), throughout this report, we share the results of our primary metrics that we used to measure our progress against our goals. This appendix provides additional detail about exactly how we arrived at these metrics and our reasoning for them. We also clarify scoping so it is clear what is included in these measurements, what is not, and why. While the actual results are in the relevant chapters, we hope that this can become a resource for our industry and help our customers and investors compare apples to apples.

Building for Sustainability Metrics

This section provides additional detail about the precise metrics and scoping for our primary metrics for building design and construction.

Metric: Design PUE

Power Usage Effectiveness (PUE) is the ratio of a data center's total electricity usage to the electricity delivered to servers. For more information about PUE, see Power Usage Effectiveness under Wet vs. Dry Data Centers, below.

We make a distinction between a facility's Design PUE (the idealized PUE of a facility running at full capacity based on its design and assumptions about customer servers) and its Operating PUE (the measured PUE of a facility in a given year based on actual conditions). Operating PUE will always be higher (worse) than Design PUE because, to maintain redundancy and flexible capacity, colocation data centers are never run at full capacity.

Metric: Percentage of New Data Centers with Water-Free Cooling

To focus our efforts on water-free cooling at new data centers, we track the percentage of new data centers each year that can operate without consuming water for cooling. Some facilities may be hybrid facilities with the option of consuming water but can fully operate without it — these contribute toward improving this metric since they limit our risk exposure to increased regional water stress without costly retrofits.

Energy Metrics

This section provides additional detail about the precise metrics and scoping for our primary metrics for energy efficiency.

Modern vs. Legacy Data Centers

We group our facilities into two categories: *modern* facilities, which we designed and built based on our design standards or acquired and are otherwise consistent with our design standards; and *legacy* facilities, our older facilities that we purchased or built before our modern standards. We make this distinction because the energy and carbon use from our *modern* facilities in operation give a more accurate estimate of the future emissions from facilities that are still in development and construction since they are built to the same standard. This distinction between *legacy* and *modern* facilities also guides our strategy for improving existing facilities (see [Energy Performance](#)).

Wet vs. Dry Data Centers

Among our data centers, some consume water for cooling (e.g., using water towers or evaporative coolers), which we term *wet* facilities; and others consume no water for cooling, called *dry* facilities. Because energy metrics (like PUE, below) treat water as “invisible,” we make the distinction between facilities that rely on increased water consumption to reduce their PUE and those that achieve it without water. The majority of our *modern* data centers (including *pre-built-out* and under-development sites) are capable of providing cooling without consuming water and thus are categorized as *dry*. We have a small number of *modern* facilities that use evaporative cooling (*wet*) and a few with hybrid systems that can operate without consuming water but currently supplement cooling with water consumption and are therefore also included in the *modern wet* category.

Energy Metrics

Using the categories above, we report on the following metrics for energy:

- Absolute Energy Consumption
- Power Usage Effectiveness (PUE) (total kWh/server kWh)
 - Operating PUE
 - Design PUE
- Building Energy Intensity (MWh-eq/ft₂)

- Electricity Procured as Renewable (%)
- Grid-Embedded Renewable Energy (%)
- Facilities with Renewable Option (%)

Metric: Absolute Energy Consumption

Our operational energy use calculations include four sources: (1) CyrusOne electricity for server support and common areas, (2) customer electricity for their servers in our data halls, (3) natural gas for comfort heating (only used at some facilities), and (4) diesel for emergency backup generation at all facilities.

These data are combined into a common unit for aggregation (kWh). We use standard conversion factors for natural gas and diesel (from the European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector). For more detail about the scope and methods, see Energy Inventory in [Appendix 1: Methodology](#).

Metric: Power Usage Effectiveness (PUE)

Power Usage Effectiveness (PUE) is the ratio of a data center’s total electricity usage to the electricity delivered to servers. This extra, non-server power is used to operate the cooling, electrical distribution, lighting, and other mechanical systems necessary for server operation. Since CyrusOne doesn’t make any decisions about the efficiency of our customers’ servers themselves, we focus on how efficiently we can support their cooling and power needs.

Using the standard calculations developed by The Green Grid, these measurements determine how efficiently we provide support services to our customers’ servers. PUE measures the total energy from a facility (total energy) divided by the energy used by customer servers (server energy). Thus, PUE has a theoretical minimum of 1.0 total kWh/server kWh (indicating that no energy is used to provide cooling and energy distribution to the servers). When taking an average of this metric, we only include built-out facilities that we manage directly to avoid the volatility of *pre-built-out* facilities and those out of our operational control.

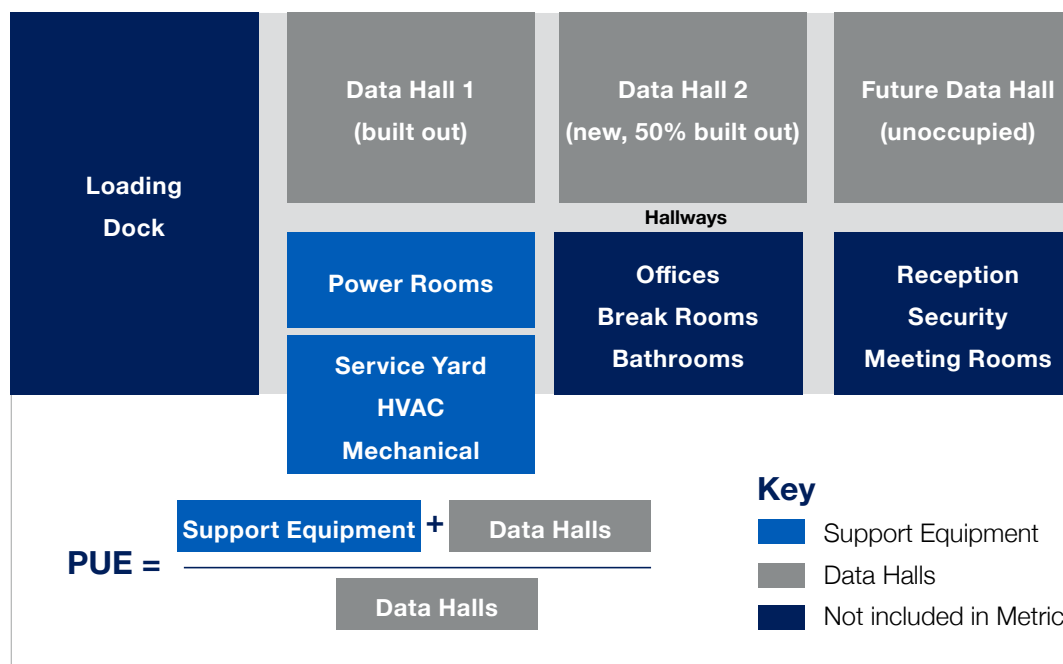
Based on The Green Grid definition, power consumption from other parts of the data center that do not support the data halls (such as offices, break rooms, bathrooms, etc.) are considered *administrative* energy and are not considered in the total energy PUE category. This illustration shows which areas are included in the ideal calculation.

Because these *administrative* areas are typically very minor contributors to the site's total energy usage, many CyrusOne facilities do not have submetering for them, so we do not subtract this *administrative* energy from the PUE. This has the effect of conservatively overestimating our PUE.

PUE is a helpful metric because it scales with customer demand for power, which predicts the amount of heat generated by servers. This heat is the primary driver of our power usage to provide cooling.

The challenge with this metric is that water is “invisible” because it can be used to lower PUE without recognizing the impact of water consumption. This is why we make a distinction between *wet* and *dry* data centers. PUE is also subject to volatility based on how much of a data center’s capacity is being used. This is why PUE must be considered in conjunction with Building Energy Intensity (below) to see the full picture.

Facility Map for PUE Scoping



Metric: Operating Power Usage Effectiveness (PUE)

We make a distinction between a facility’s Design PUE (the idealized PUE of a facility running at full capacity based on its design and assumptions about customer servers) and its Operating PUE (the measured PUE of a facility in a given year based on actual conditions). Operating PUE will always be higher than Design PUE because, to maintain redundancy and flexible capacity, colocation data centers are never run at full capacity. For more information about Design PUE see [Building for Sustainability](#).

Metric: Building Energy Intensity

Building energy intensity describes the energy use per *built-out* colocation building area of our facilities. Building energy intensity is measured in megawatt-hours per square foot (MWh/ft²). This metric includes the total energy consumed by the facility, including electricity used for infrastructure, electricity supplied to customer servers, and fuels (diesel and natural gas).

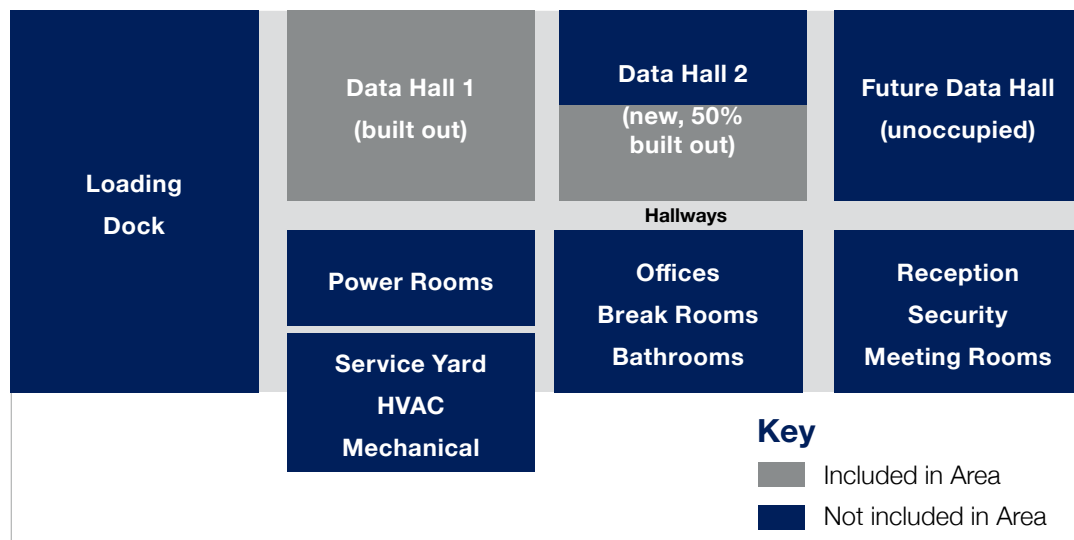
Within our data centers, the vast majority of the environmental impacts originate, directly or indirectly, from server activity in the data halls. Because of this, we measure business activity for these metrics in *colocation square feet*. “Colocation” refers to the server housing space (data halls) and does not include office space, common areas, or support infrastructure (power rooms, service yard, HVAC equipment). Office space and common areas do draw

minimal amounts of power, but they are insignificant compared to the data halls, so including them would dilute our measurements. Even though the support infrastructure area does draw power, it is done in service to the data halls, so we find the colocation building area to be the best denominator of our intensity metrics. Furthermore, we only include facilities that we directly manage (removing the two tenant-operated/indirectly managed facilities from both our energy and building area metrics).

To determine our company-wide averages, we further focus our metrics on *built-out colocation square feet*. “Built-out” means that a customer has not only rented the space but has also installed their servers and begun to draw power. In the first year or two of operation, data centers require energy for start-up activities and may have low occupancy as customers plan their move-in and begin operations. This can result in volatile metrics that skew averages (such as a facility with a PUE of 233 instead of a typical 1.5). These facilities are referred to as “*pre-built-out*,” and we do not include them in averages (though they are included in gross totals). Once they become *built-out*, we include them in averages without negatively impacting our data quality.

This fictitious data hall floor plan illustrates which building area is included in the denominator of this building intensity metric.

Facility Map for Built-out Colocation Building Area Scoping



The challenge with these metrics is that, within our portfolio, some facilities are designed to provide greater than average power density (W/ft_2) to customer servers in order to support high-performance computing (HPC). *Modern* facilities tend to support a higher design power density than *legacy* facilities. Of course, how our customers use this design capacity is up to them, and they often do not draw the full power available to the space. So, if the energy intensity of a facility decreases, it could be because the facility became more efficient due to an upgrade or good management, or it could mean that customers changed their computing power needs. This is why Energy Intensity must be considered in conjunction with PUE to see the full picture.

Metric: Percentage of Electricity Procured as Renewable by CyrusOne

We measure the amount of energy that we procure as 100% renewable as a percentage of all the electricity that we purchase (including electricity delivered to customers). This includes mechanisms like retail green power offerings, Power Purchase Agreements (PPAs), Virtual Power Purchase Agreements (VPPAs), and the like.

Metric: Percentage of Electricity Procured as Renewable by Customers

We also measure the renewable electricity that we have confirmed has been procured by our customers to cover their server and cooling electricity in our facilities (which we include in our Scope 2 reporting) as a percentage of all the electricity that we purchase.

Metric: Percentage of Electricity Paired with Renewable Certificates

We also measure the amount of energy that we pair with unbundled Renewable Energy Certificates (RECs), Guarantees of Origin (GoOs), or other certificate mechanisms as a percentage of all the electricity that we purchase (including electricity delivered to customers).

Metric: Percentage of Facilities with Renewable Option

This measures how many of our facilities can offer customers some form of renewable electricity through our power provider, as an upgraded service, as a percentage of our total number of facilities.

Climate Impact

This section provides the precise metrics and scoping for our climate impact and carbon accounting primary metrics.

Scope 1, 2, and 3 Emissions

Scope 1 includes emissions from diesel, natural gas, and refrigerant loss, while Scope 2 includes both emissions from customer server electricity and electricity used to service common areas and data halls, including cooling. Scope 2 emissions are reported in both market-based and location-based methods.

Our Scope 3 emissions are not directly emitted by CyrusOne. These emissions are from sources indirectly associated with CyrusOne, such as construction materials (capital goods), fuel and energy-related activities, business travel, employee commuting, and customer-operated facilities (downstream leased assets). Note that customer servers inside facilities that we operate are counted as Scope 2 emissions.

Climate Impact Metrics

Carbon Intensity

We measure carbon intensity in several ways to give us different perspectives:

- Carbon Usage Effectiveness (CUE) (kg CO₂e/server kWh)
- Grid Carbon Intensity (MTCO₂e/MWh)
- Building Carbon Intensity (MTCO₂e /ft²)
- Revenue Carbon Intensity (MTCO₂e /\$1M Revenue)

Metric: Carbon Usage Effectiveness (CUE)

Carbon Usage Effectiveness is the ratio of total carbon (including electricity and fuels) to the electricity delivered to servers. Here, the electricity delivered to servers is used as an indicator of activity rather than a source of carbon. Since over 99% of our Scope 1 and Scope 2 carbon emissions are due to electricity consumption, PUE and CUE are closely related within a facility, but can vary between facilities based on the source of electricity.

Using the standard calculations developed by The Green Grid, CUE is a measurement that determines how efficiently we provide support services to our customers' servers. CUE measures the total carbon from a facility divided by the energy used by customer servers. Thus, CUE has a theoretical minimum of 0 kg CO₂/server kWh (indicating no carbon is generated by the facility's operations). When taking averages of this metric, we only include *built-out* facilities that we manage directly to avoid the volatility of *pre-built-out* facilities and those out of our operational control.

Metric: Grid Carbon Intensity

We measure grid carbon intensity as the carbon use per megawatt-hour (MWh) delivered to our facilities from the grid. This is measured in metric tons of carbon dioxide equivalent per MWh of electricity (MTCO₂e/MWh). It gives us an indication of how carbon-intensive the grid is and helps us prioritize our renewable energy transition strategy. It also is used to calculate location-based Scope 2 carbon emissions.

Metric: Building Carbon Intensity

We measure building carbon intensity as the carbon use per built-out colocation area in our facilities. This is measured in metric tons of carbon dioxide equivalent per square foot (MTCO₂e/ft²). It gives us an indication of how carbon-dense each facility is, and is a secondary measurement of the carbon relative to the size of different buildings.

Metric: Revenue Carbon Intensity

We measure the carbon use per million dollars (\$USD) of revenue across CyrusOne's portfolio to determine how efficiently we "turn carbon into revenue." It is measured in metric tons of carbon dioxide equivalent per one-million-dollar (\$USD) revenue (MTCO₂e/\$1M Revenue).

Water Conservation Metrics

This section provides additional detail about the precise metrics and scoping for our primary metrics for water conservation and restoration. The way we interpret the significance of these water metrics is that water withdrawal describes the potential impact of regional water scarcity on our facilities while water consumption describes the impact of our facilities on potential regional water scarcity.

Metric: Absolute Water Withdrawal

Withdrawn water is the total water taken in by our facilities, regardless of whether the water goes toward cooling, facility maintenance, or domestic water uses. All sources of withdrawn water are municipal supply except for our geothermal system, which is described below.

Net withdrawn water is the total water taken in by our facilities, regardless of how it is used, minus the amount of water restored by WRCs. All sources of withdrawn water are municipal supply except for the geothermal cooling system at our Hamilton, Ohio, facility.

Metric: Absolute Water Consumption and Discharge

Once in our facilities, water is either discharged to water treatment works (such as industrial or domestic wastewater treatment) and returned to the watershed, or it is consumed through evaporative cooling or irrigation. Since our consumption of water removes it from the watershed, this serves as an indication of our impact on potential regional water scarcity.

Due to a lack of submetering, we assume that all water used at our few facilities that use water-consuming cooling (*wet* facilities) was consumed, even though some of it is domestic and facility maintenance water that is discharged for local treatment. Similarly, at our *dry* facilities, we assume that all water is discharged for treatment, even though some portion of it is consumed through humidification and landscape irrigation.

Geothermal Cooling Throughput (Withdrawal and Discharge)

At our Hamilton, Ohio, facility, we use a geothermal cooling system that pumps groundwater through the facility, using its low ambient temperature for cooling. After cooling our facility, the water is then discharged to surface waters. This geothermal water is not evaporated (consumed) and does not need treatment, so its net impact on the watershed is minimal. Because the

scale of the throughput of this system dwarfs our other water metrics, we report it separately so changes in our total portfolio are visible.

Metric: Absolute Water Withdrawal, Consumption, and Discharge in High-Stress Regions

To focus our attention on areas where water is scarce, we track the total water withdrawal, consumption, and discharge from regions listed as currently in high or extremely high stress, according to the Aqueduct Water Risk Atlas. This is a helpful metric because it is a risk-based approach that focuses on where we are removing water from regions that have little of it. The limitation of this metric is that it does not, in itself, take into account future water stress and how it is projected to change. We compensate for this limitation by using our water risk assessment to incorporate future water stress into our planning.

Metric: Onsite Water Usage Effectiveness (WUE Site)

The standard metric for measuring water efficiency in data centers is Water Usage Effectiveness (WUE Site). This metric was created by The Green Grid specifically for data centers to understand and compare their water impact. WUE Site is a ratio of annual onsite water use to server energy and is measured in liters per kilowatt-hour (L/kWh). This metric allows us to understand how much water we are using in our facility operations relative to the energy used for data operations. Since server energy use drives the need for cooling, in *wet* facilities, water use is linked with energy use, and an increase in server energy leads to an increase in water consumption. By the Green Grid standard, WUE Site should only be calculated using water that is used for server support. Other water use, like facility maintenance (cleaning, irrigation, etc.) and domestic use (bathrooms, break rooms, etc.), can be excluded. However, because our facilities tend to use such little water, we do not submeter the different water uses. Thus, our calculations of WUE Site include all uses of water at the facility, conservatively overstating them compared to the ideal calculation.

Metric: Total Water Usage Effectiveness (WUE Source)

In contrast with WUE Site, which measures only the onsite water efficiency of a data center, WUE Source is used to estimate a facility's total water burden. If the electricity used by a data center comes from thermoelectric generation sources, large amounts of water will be consumed in the production of that electricity. We refer to this indirect water consumption as "energy supply chain water". WUE Source is a ratio of the total water consumed by

the facility (onsite consumption plus estimated energy supply chain water consumption) to server energy, measured in liters per kilowatt-hour (L/kWh). Supply chain water estimates are based on the World Resource Institute’s [Guidance for Calculating Water Use Embedded in Purchased Electricity](#).

Metric: Net Positive Water Facility

We consider a facility to have reached *net positive water* if, after reducing water use onsite through efficiency, we are able to partner with environmental nonprofits to restore water flows in these regions in excess of the water that we use. To ensure that the positive portion is not just a token amount (such as 1 gallon), we consider a facility to be a *net positive water* facility if we can restore at least 20% more water than we use. For example, if a facility uses 5 million gallons of water and we restore at least 6 million gallons of water, we designate it as a *net positive water* facility.

Biodiversity Metrics

This section provides additional detail about the precise metrics and scoping for our primary metrics for habitat improvement. This is our newest topic, so we are still developing these metrics.

Metric: Facilities with Improved Habitat

To measure progress toward our target, we will track and report how many of our facilities have some improved habitat onsite that supports biodiversity in the area. Since, according to the Wildlife Habitat Council, small spaces can

have big impacts, this metric counts a facility if it has at least 100 square feet of improved habitat, such as a pollinator garden or migratory waystation. This metric tells us how widespread our habitat network has become rather than the total land area improved.

Supply Chain Diversity Metrics

This section provides additional detail about the precise metrics and scoping for our primary metrics for supply chain diversity.

Metric: Diverse Supply Chain Percentage

We track the percentage of our supply chain spend that goes to small businesses, minority-owned businesses, and women-owned businesses.

Occupational Safety Metrics

This section provides additional detail about the precise metrics and scoping for our primary metrics for health and safety.

Injury Categories

- **Fatalities:** An employee death resulting from a work-related incident or exposure.
- **Recordable Cases:** Any work-related injury or illness that results in a fatality, loss of consciousness, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, work-related diagnosed case of cancer, chronic irreversible diseases, fractured or cracked bones or teeth, and punctured eardrums.
- **Lost Workday Cases:** Any work-related injury or illness that results in one or more days away from work for recovery.
- **Restricted/Transfer of Duty Cases:** Any work-related injury or illness that results in one or more days of restricted work or a job transfer.
- **Other Recordable Cases:** Any recordable injury or illness where an employee received medical treatment beyond first aid, but that did not involve a fatality; one or more days away from work, or one or more days of restricted work or job transfer.
- **First Aid Cases:** Any injury or illness that can be treated with basic first aid treatment or over-the-counter medication.
- **Near Miss Incident:** A reported incident in which no property damage or personal injury was sustained, but had the potential to do so.

Injury Severity Indicators

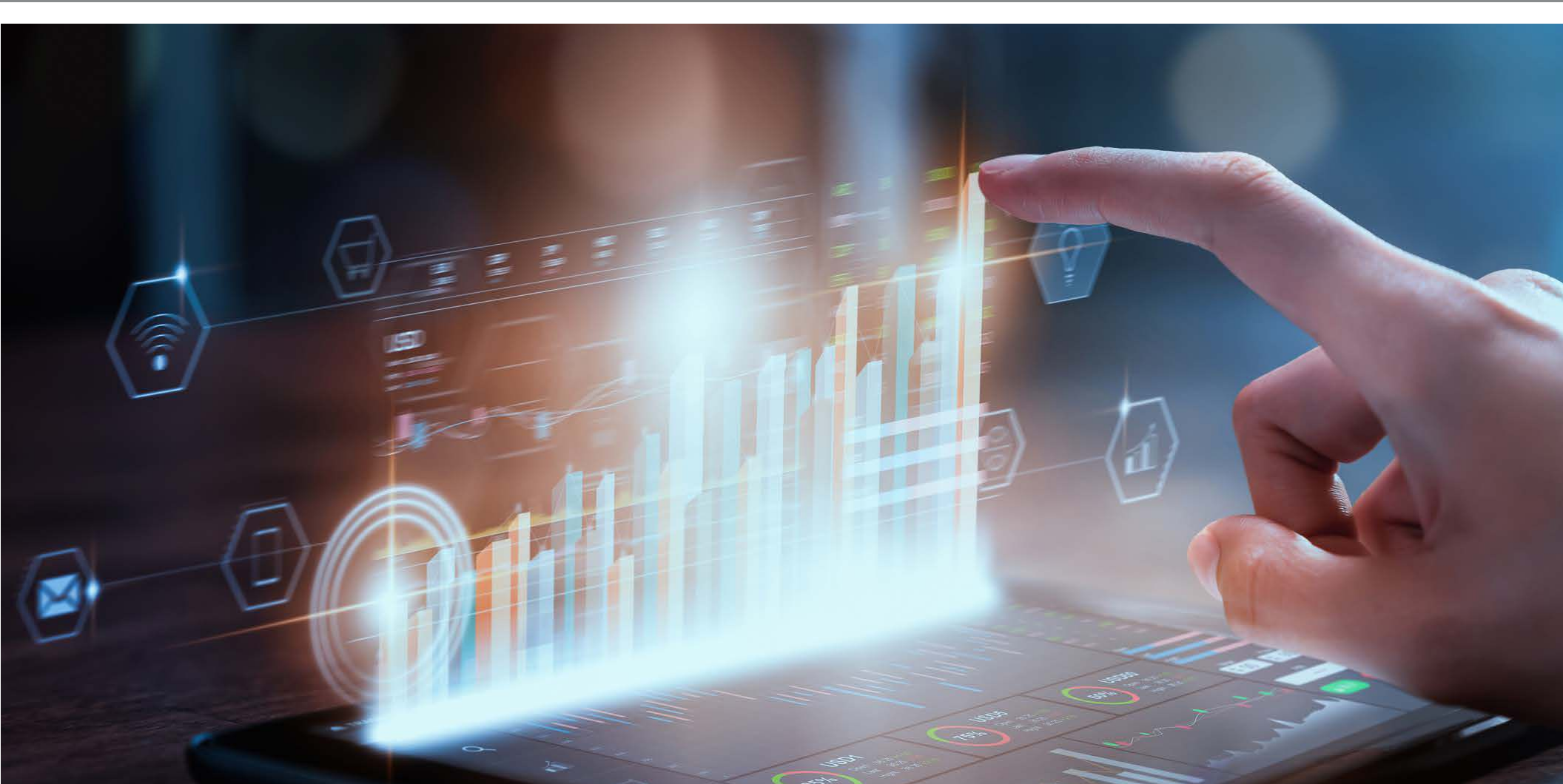
- **Days Away from Work:** Total number of days that an employee was unable to work due to work-related injury or illness.
- **Restricted/Transfer of Duty Days:** Total number of days that an employee was on restricted work duty or job transfer due to work-related injury or illness.

Injury Intensity Rates

- **Total Hours Worked:** Total number of hours worked by CyrusOne contractors for each given year.
- **Lost Time Injury Rate:** Number of Lost Workday Cases per 200,000 Total Hours Worked.
- **Days Away Restricted or Transferred (DART) Rate:** Number of Lost Workday and Restricted/Transfer of Duty Cases per 200,000 Total Hours Worked.
- **Total Recordable Incident Rate (TRIR):** Number of Total Recordable Cases per 200,000 Total Hours Worked.

Chemical Spill Reporting Metrics

- **Reportable Spills with Environmental Impact:** Spills significant enough to require reporting to local environmental agencies that were determined to have impacted local soil or water (spills not contained on pavement or retention).
- **Reportable Spills without Environmental Impact:** Spills significant enough to require reporting to local environmental agencies that did not impact local soil or water (spills contained on pavement or retention and cleaned up).



Appendix 3: Standardized Metrics

Appendix 3: Standardized Metrics

As described in the Introduction, this report is aligned with three systems of standardized metrics: GRI, SASB, and TCFD. These standardized metrics are organized into the tables below. The metrics are grouped for each standard — duplicate metrics are repeated on each table for easy reference. Since SASB guidance and the general consensus is that environmental topics have the largest impacts in the data center industry, we have focused on those standardized metrics. Note that all CyrusOne buildings fall within the REIT property subcategory “Data Centers.” All numbers represent the data as of the close of 2021 unless otherwise specified.

GRI Metrics Summary Table

GRI Index	Metric	Response
General		
102-1	Name of org	CyrusOne Inc.
102-2	Activities, brands, products, and services	Colocation data centers for the world's largest companies
102-3	Location of headquarters	2850 N Harwood St., Suite 2200 Dallas, Texas 75201
102-4	Location of operations	CyrusOne Locations
102-5	Ownership and legal form	Publicly held company, Real Estate Investment Trust (REIT)
102-6	Markets served	Markets are served in the North American and European markets with partnerships extending to South America and Asia. Our main clients are either enterprise IT departments in companies or hyperscale cloud services.
102-7i	Number of employees	465 (as of end of CY2021)
102-7ii	Number of operations	56 data centers
102-7iii	Net sales/net revenues	\$1205.7 million in Total Revenue
102-7iv	Total capitalizations (debt and equity)	Debt: \$3,492.9 million Equity: \$2,923.7 million
102-7v	Quantity of products/services provided	5,094,000 colocation square feet (Does not include leasable office space) Average occupancy rate 83%

GRI Index	Metric	Response
102-8a	Total number of employees by employment contract (permanent and temporary), by gender	Permanent: Male (365), Female (94), Decline to State (5); Temporary: Male (0), Female (1), Decline to State (0)
102-8b	Total number of employees by employment contract (permanent and temporary), by region	Permanent: North America (349), Europe (114), Asia (1); Temporary: North America (0), Europe (1), Asia (0)
102-8c	Total number of employees by employment type (full-time and part-time), by gender	Full-Time: Male (364), Female (92), Decline to State (5); Part-Time: Male (1), Female (3), Decline to State (0)
102-8d	Whether a significant portion of the organization's activities are performed by workers who are not employees. If applicable, a description of the nature and scale of work performed by workers who are not employees	CyrusOne Employees (456, 35%), Other: <ul style="list-style-type: none"> • Security (435, 35%) • Facility Management (303, 24%) • Design & Construction (50, 4%)
102-8e	Any significant variations in the numbers reported in Disclosures 102-8-a, 102-8-b, and 102-8-c	No significant variations.
102-8f	An explanation of how the data have been compiled, including any assumptions made	Employee information database populated by new-hire process. The data is a snapshot from December 31, 2021.
102-10	Significant changes to the organization's size, structure, ownership, or supply chain	From 2018 to 2021, there was a 31% growth in colocation area available. From 2020 to 2021, there was a 9% growth in colocation area available.
102-11	Whether and how the organization applies the Precautionary Principle or approach	CyrusOne integrates the Precautionary Principle (as defined by the UN Framework Convention on Climate Change) into our thorough risk management processes. We believe that a reliance on science is essential, and this informs our current action to mitigate environmental impacts to ensure a better future for our company and the communities in which we operate.

GRI Metrics Summary Table | SASB Metrics Summary Table | TCFD Metrics Summary Table | Assurance Statement

GRI Index	Metric	Response
102-11 (cont.)	Whether and how the organization applies the Precautionary Principle or approach	This is demonstrated by our <i>Net Zero Carbon</i> targets, our action on reducing water stress based on future projections, and an emphasis on improving habitat — all based on the best available scientific knowledge. Since these are threats of serious or irreversible damage, we are not postponing measures to minimize or mitigate the adverse effects of our operations. Our participation in industry groups and commitment to transparency furthers our position to exceed standards and maintain relevance.
102-12	A list of externally-developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes, or which it endorses	CyrusOne aligns its targets with the UN Sustainable Development Goals at the indicator level. CyrusOne is a founding member of the Climate Neutral Data Centre Pact, which applies to all of our European facilities.
102-13	A list of the main memberships of industry or other associations, and national or international	Nareit (international), Data Center Coalition (US), European Data Centre Association (EUDCA, international), Dutch Data Center Association, France Datacenter Association, German Datacenter Association, Host In Ireland, Infrastructure Masons (international), techUK Data Centre Trade Association
102-14	A statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and its strategy for addressing sustainability	Letter from the CEO in Chapter 1, Introduction
102-16	A description of the organization's values, principles, standards, and norms of behavior	See Employee Code of Conduct
102-18a	Governance structure of the organization, including committees of the highest governance body	Described in Governance chapter, ESG Governance
102-18b	Committees responsible for decision-making on economic, environmental, and social topics	Described in Governance chapter, ESG Governance

GRI Index	Metric	Response
102-40	A list of stakeholder groups engaged by the organization	Customers, Investors, Employees, Community
102-41	Percentage of total employees covered by collective bargaining agreements	No CyrusOne employees (0%) are covered by collective bargaining agreements.
102-42	The basis for identifying and selecting stakeholders with whom to engage	We engage with stakeholders that contact us and have identified the stakeholders most closely affected by our business: Customers, Investors, Community, and Employees.
102-43	The organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process	We do not have any group-wide stakeholder engagement governance structure in place.
102-44	Key topics and concerns that have been raised through stakeholder engagement including: how the organization has responded to those key topics and concerns including through its reporting; the stakeholder groups that raised each of the key topics and concerns	We have added reporting on good neighbor responsibility based on customer feedback on our previous reports. The most commonly raised issues from customers and investors are carbon, renewable energy, water resources, and safety.
102-45a	A list of all entities included in the organization's consolidated financial statements or equivalent documents	Reported in the 2021 10-K, Exhibit 21.1
102-45b	Whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report	No, all subsidiaries are covered by our report.
102-46	An explanation of the process for designing the report content and topic boundaries; how org has implemented reporting principles for defining report content	Described in Governance chapter, ESG Strategy and ESG Reporting

GRI Metrics Summary Table | SASB Metrics Summary Table | TCFD Metrics Summary Table | Assurance Statement

GRI Index	Metric	Response
102-47	A list of the material topics identified in the process for defining report content	See Priorities and Materiality, pg 14
102-48	The effect of any restatements of information given in previous reports and the reasons for such restatements	Updates to greenhouse gas inventory from addition of estimated refrigerant loss and emission factor updates. This report restates all prior years with this change for comparison purposes.
102-49	Significant changes from previous reporting periods in the list of material topics and topic boundaries	None
102-50	Reporting period for the information provided	CY2021
102-51	If applicable, the date of the most recent previous report	November 2021
102-52	Reporting cycle	Annual
102-53	The contact point for questions regarding the report or its contents.	Kyle Myers, Senior Director, EHS & Sustainability
102-54	The claim if the report has been prepared in accordance with GRI	This report has been prepared in accordance with the GRI Standards: Core option.
102-55a, b	The GRI content index, which specifies each of the GRI Standards used and lists all disclosures included in the report	This table serves as the content index.
102-56	A description of the organization's policy and practice with regard to seeking external assurance for the report	We have obtained data assurance for this report from ISOS Group, Inc., covering Energy, Scope 1 – 3 GHG emissions, Water, Waste, Occupational safety metrics, Workforce DEI metrics, and Diverse supply chain spend.
Energy		
103-1	For each material topic: Why is it material; the boundary for topic (where impacts occur, org's involvement with impacts); specific limitation regarding topic boundary)	Described in Environmental Impact chapter, Energy and Building for Sustainability

GRI Index	Metric	Response
103-2	For each material topic: how org manages topic, purpose of management approach, description of the policies, commitments, goals/targets, responsibilities, resources, grievance mechanisms, other specific actions	Described in Environmental Impact chapter, Energy and Building for Sustainability
103-3	For each material topic: how org evaluates management approach (process, results, related adjustments to approach)	Described in Environmental Impact chapter, Energy and Building for Sustainability
302-1a	Total fuel consumption within the organization from non-renewable sources, in joules or multiples, and including fuel types used	Total Fuel Consumption: 57,802 MWh-eq Natural Gas (10.0%): 5,818 MWh-eq Diesel (90.0%): 51,981 MWh-eq
302-1b	Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used	No renewable fuels consumed.
302-1c	Total electricity consumption	Total Electricity Consumption: 3,194,723 MWh Grid Energy (52.9%): 1,689,636 MWh Purchased Renewables (47.1%): 1,505,087 MWh We do not consume purchased heating, cooling, or steam.
302-1d	Total electricity sold	None
302-1e-g	Total energy consumption within the organization, including methods and assumptions in the calculations	Total Energy Consumption: 3,252,522 MWh-eq Electricity (98.2%): 3,194,723 MWh Fuels (1.8%): 57,800 MWh-eq Calculation based on purchased electricity and fuels. Conversion factors from ICT Footprint (European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector) for diesel energy content, NREL: https://openei.org/wiki/Definition:Therm . The energy consumption data covers 100% of directly managed colocation floor area of portfolio.
302-2	Energy consumption outside the organization	No energy is consumed outside of the organization.

GRI Metrics Summary Table | SASB Metrics Summary Table | TCFD Metrics Summary Table | Assurance Statement

GRI Index	Metric	Response
302-3	Building energy intensity (by organization specific metric); intensity ratio for the organization	0.856 MWh/ <i>built-out</i> colocation square foot across all directly managed facilities, including electricity, natural gas, and diesel consumption within the organization.
Water		
103-1	For each material topic: Why is it material; the boundary for topic (where impacts occur, org's involvement with impacts); specific limitation regarding topic boundary)	Described in Environmental Impact chapter, Water and Building for Sustainability
103-2	For each material topic: how org manages topic, purpose of management approach, description of the policies, commitments, goals/targets, responsibilities, resources, grievance mechanisms, other specific actions	Described in Environmental Impact chapter, Water and Building for Sustainability
103-3	For each material topic: how org evaluates management approach (process, results, related adjustments to approach)	Described in Environmental Impact chapter, Water and Building for Sustainability
303-3 (withdrawal), 303-5ab consumption)	Total water withdrawal, consumption, and discharge	<p>All Facilities Water withdrawn: 1,368 ML Water discharged: 133 ML Water consumed: 1,235 ML Water restored: 46 ML</p> <p>High Water Stress Facilities Water withdrawn: 738 ML Water discharged: 41 ML Water consumed: 697 ML Water restored: 46 ML</p> <p>Geothermal System Water withdrawn: 2,984 ML Water discharged: 2,984 ML Water consumed: 0 ML</p>
303-3d	Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used	<p>At this time, we are assuming that, in facilities that use evaporation for cooling, 100% of the metered water is consumed (though some water is used for domestic and facility maintenance purposes).</p> <p>In general metrics, we have separated our geothermal cooling system, which pumps 2,990 ML per year of groundwater and returns it to the watershed.</p>

GRI Index	Metric	Response
303-5c	Change in water storage in megaliters, if water storage has been identified as having a significant water-related impact	Water storage does not have a significant impact.
303-5d	Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used, including whether the information is calculated, estimated, modeled, or sourced from direct measurements, and the approach taken for this, such as the use of any sector-specific factors	Water consumption data sourced from utility billing. Geothermal cooling system data calculated using constant pumping rate.
Biodiversity		
103-1	For each material topic: Why is it material; the boundary for topic (where impacts occur, org's involvement with impacts); specific limitation regarding topic boundary)	Described in Environmental Impact chapter, Biodiversity and Building for Sustainability
103-2	For each material topic: how org manages topic, purpose of management approach, description of the policies, commitments, goals/targets, responsibilities, resources, grievance mechanisms, other specific actions	Described in Environmental Impact chapter, Biodiversity and Building for Sustainability
103-3	For each material topic: how org evaluates management approach (process, results, related adjustments to approach)	Described in Environmental Impact chapter, Biodiversity and Building for Sustainability
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	None identified, as verified by an annual Protected Areas Assessment

GRI Metrics Summary Table | SASB Metrics Summary Table | TCFD Metrics Summary Table | Assurance Statement

GRI Index	Metric	Response
304-2	Significant impacts of activities, products, and services on biodiversity	No significant impacts of activities on biodiversity, as verified by an annual Protected Areas Assessment
304-2	Significant impacts of activities, products, and services on biodiversity	No significant impacts of activities on biodiversity, as verified by an annual Protected Areas Assessment
304-2a	<p>Nature of significant direct and indirect impacts on biodiversity with reference to one or more of the following:</p> <ul style="list-style-type: none"> i. Construction or use of manufacturing plants, mines, and transport infrastructure; ii. Pollution (introduction of substances that do not naturally occur in the habitat from point and non-point sources); iii. Introduction of invasive species, pests, and pathogens; iv. Reduction of species; v. Habitat conversion; vi. Changes in ecological processes outside the natural range of variation (such as salinity or changes in groundwater level) 	None identified, as verified by our Environmental Impact Assessments
304-2b	<p>Significant direct and indirect positive and negative impacts with reference to the following:</p> <ul style="list-style-type: none"> i. Species affected; ii. Extent of areas impacted; iii. Duration of impacts; iv. Reversibility or irreversibility of the impacts. 	None identified, as verified by our Environmental Impact Assessments
304-3a	Size and location of all habitat areas protected or restored, and whether the success of the restoration measure was or is approved by independent external professionals	Dublin I improved habitat landscaping is 1.27 hectares. The landscape habitat was designed and installed by a landscape contractor with native plant habitat expertise and based on ecological assessments performed at the site before construction. Pollinator monitoring began

GRI Index	Metric	Response
304-3a <i>cont.</i>	Size and location of all habitat areas protected or restored, and whether the success of the restoration measure was or is approved by independent external professionals	<p>in CY2021 with the help of an external group, DCs for Bees.</p> <p>Allen and Carrollton (Texas) improved habitat landscaping cover 0.3 hectares. The landscapes were designed and installed by a landscape contractor with native plant habitat expertise.</p>
304-3b	Whether partnerships exist with third parties to protect or restore habitat areas distinct from where the organization has overseen and implemented restoration or protection measures	Partnership with Bonneville Environmental Foundation, Trout Unlimited, The Nature Conservancy, and Arizona Land and Water Trust to restore water flows to Texas and Arizona rivers
304-3c	Status of each area based on its condition at the close of the reporting period	See Environmental Impact chapter, Biodiversity
304-4	IUCN red list species and national conservation list species with habitats in areas affected by operations (Critically endangered, endangered vulnerable, near threatened, least concerned)	IUCN red list species and national conservation list species with habitats in areas affected by operations: none
Emissions		
103-1	For each material topic: Why is it material; the boundary for topic (where impacts occur, org's involvement with impacts); specific limitation regarding topic boundary)	Described in Environmental Impact chapter, Climate Impact and Building for Sustainability
103-2	For each material topic: how org manages topic, purpose of management approach, description of the policies, commitments, goals/targets, responsibilities, resources, grievance mechanisms, other specific actions	Described in Environmental Impact chapter, Climate Impact and Building for Sustainability
103-3	For each material topic: how org evaluates management approach (process, results, related adjustments to approach)	Described in Environmental Impact chapter, Climate Impact and Building for Sustainability

GRI Metrics Summary Table | SASB Metrics Summary Table | TCFD Metrics Summary Table | Assurance Statement

GRI Index	Metric	Response
305-1,2,3	GHG emissions (Scope 1, 2, and 3), including methods and approach for calculations	<p>CY21 Greenhouse Gas Emissions, in metric tonnes CO₂ equivalent (MTCO₂e)</p> <p>Scope 1 GHG Emissions (direct emissions): 33,404 MTCO₂e</p> <p>Scope 2 GHG Emissions, Market-based (indirect emissions from purchased electricity): 612,216 MTCO₂e</p> <p>Scope 2 GHG Emissions, Location-based (indirect emissions from purchased electricity): 1,076,178 MTCO₂e</p> <p>Scope 3 GHG Emissions Estimate (indirect emissions from other sources): 159,711 MTCO₂e</p> <p>Scope 3 categories included in estimate: Capital Goods (Construction Materials), Fuel-and-energy-related Activities, Business Travel, Employee Commuting, Downstream Leased Assets (Customer-operated Facilities)</p> <p>Calculations performed according to WRI GHG Protocol. Emissions factors from: US EPA EGrid data, EU Europa. Includes carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and refrigerants (HFCs). Emissions consolidated based on operational control. The baseline year is currently 2018 (the earliest year of data available).</p>
305-4	GHG emissions intensity, including organization specific metric and gases included in the calculation	<p>CY21 Greenhouse Gas Emissions Intensity</p> <p>Scope 1+2 intensity: 0.172 MTCO₂e/ft²</p> <p>Our metric for the denominator of intensity calculations is <i>built-out</i> colocation square feet that are directly managed by CyrusOne, and calculations include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and refrigerants (HFCs).</p>
Effluents and Waste		
306-3	Total number and total volume of recorded significant spills	Reported in Employee Occupational Safety

GRI Index	Metric	Response
Compliance		
307-1a,b	<p>Significant fines and non-monetary sanctions for non-compliance with environmental laws and/or regulations in terms of:</p> <ul style="list-style-type: none"> i. total monetary value of significant fines; ii. total number of non-monetary sanctions; iii. cases brought through dispute resolution mechanisms. <p>If the organization has not identified any non-compliance with environmental laws and/or regulations, a brief statement of this fact is sufficient.</p>	<p>No significant fines or sanctions. CyrusOne has received warning letters, investigation letters, and a notice of violations under our air permits and underground storage tank authorizations. The letters and notices have all been followed up on and corrected immediately, and none of them have been or resulted in a material violation. In fact, many of the letters and notices were based on administrative deficiencies, such as alleged failure to submit a report or provide a signature.</p>

SASB Metrics Summary Table

SASB Index	Metric	Response
General		
IF-RE-000.A	Number of operations	56 data centers
IF-RE-000.B-D	Quantity of products/ services provided	5,094,000 colocation square feet (Does not include leasable office space) Average occupancy rate 83%
IF-RE-130a.4	Percentage of eligible portfolio that has an energy/sustainability rating by property subsector	Percentage of portfolio with an energy/ sustainability rating, by floor area: 18.7%
IF-RE-130a.4	Percentage of eligible portfolio that (2) is certified to ENERGY STAR, by property subsector	Percentage of portfolio that is ENERGY STAR certified, by floor area: 6.3%
TC-IM-130a.3	Discussion of the integration of environmental considerations into strategic planning for data center needs	See ESG Strategy section in Corporate Governance and the Building for Sustainability section in Environmental Impact.
Energy		
IF-RE-130a.2.1-3	Total energy consumption within the organization, including methods and assumptions in the calculations	Total Energy Consumption: 3,252,522 MWh-eq Electricity (98.2%): 3,194,723 MWh Grid Energy: 1,689,636 MWh Purchased Renewables: 1,505,087 MWh Fuels (1.8%): 57,800 MWh-eq Natural Gas: 5,818 MWh-eq Diesel: 51,981 MWh-eq Calculation based on purchased electricity and fuels. Conversion factors from ICT Footprint (European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector) for diesel energy content, NREL: https://openei.org/wiki/Definition:Therm . The energy consumption data covers 100% of directly managed colocation floor area of portfolio.

SASB Index	Metric	Response
IF-RE-130a.3	Like-for-like percentage change in energy consumption for the portfolio area with data coverage, by property subsector	From 2020 to 2021, there was a 16% increase in total energy
IF-RE-130a.5	Description of how building energy management considerations are integrated into property investment analysis and operational strategy	Described in Environmental Impact chapter, Energy and Climate Impact
IF-RE-410a.2	Percentage of tenants that are separately metered or submetered for grid electricity consumption, by property subsector	100% of tenants' servers are submetered for electricity
Climate Risk		
IF-RE-450a.1	Area of properties located in 100-year flood zones (flood hazard zones), by property subsector	Area of properties in flood hazard (100-year flood) zones: 51,290 ft ²
IF-RE-450a.2	Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks	Climate risk assessment is summarized in the Enterprise Risk Management section of Corporate Governance.
Water		
IF-RE-140a.1.1, 1.2	Water withdrawal data coverage	Data coverage: Only includes open facilities for which water data is available, covering 94.3% of portfolio (and 90% of areas in high and extremely high water stress). Data is not available for some smaller leased facilities.
IF-RE-140a.2.2, TC-IM-130a.2.1	Total water withdrawal, consumption, and discharge	All Facilities Water withdrawn: 1,366 ML Water discharged: 131 ML Water consumed: 1,235 ML Water restored: 46 ML High Water Stress Facilities Water withdrawn: 735 ML Water discharged: 39 ML Water consumed: 697 ML Water restored: 46 ML

SASB Index	Metric	Response
IF-RE-140a.2.2, TC-IM-130a.2.1 <i>cont.</i>	Total water withdrawal, consumption, and discharge	<u>Geothermal System</u> Water withdrawn: 2,984 ML Water discharged: 2,984 ML Water consumed: 0 ML
IF-RE-140a.3	Like-for-like percentage change in water withdrawn for portfolio area with data coverage, by property subsector	From 2018 to 2021, water withdrawal increased by 100% across all buildings in the portfolio with data coverage. From 2020 to 2021, withdrawal increased by 43%.
IF-RE-140a.4	Description of water management risks and discussion of strategies and practices to mitigate those risks	Described in Environmental Impact chapter, Water
IF-RE-410a.2	Percentage of tenants that are separately metered or submetered for water withdrawals, by property subsector	Not applicable (customer servers do not directly use water).

TCFD Metrics Summary Table

Metric	Response
General	
A breakdown of reserves and an indication of associated emissions factors to provide insight into potential future emissions	Not applicable
Percentage of eligible portfolio that has an energy/sustainability rating by property subsector	Percentage of portfolio with an energy/sustainability rating, by floor area: 18.7%
Climate Risk	
Area of properties located in 100-year flood zones (flood hazard zones), by property subsector	Area of properties in flood hazard (100-year flood) zones: 51,290 ft ²
Emissions	
GHG emissions intensity, including organization specific metric and gases included in the calculation	CY21 Greenhouse Gas Emissions Intensity Scope 1+2 intensity: 0.172 MTCO ₂ e/ft ² Our metric for the denominator of intensity calculations is <i>built-out</i> colocation square feet that are directly managed by CyrusOne, and calculations include carbon dioxide (CO ₂), methane (CH ₄), and nitrous oxide (N ₂ O)
Energy	
Total fuel consumption within the organization from non-renewable sources, in joules or multiples, and including fuel types used	Total Fuel Consumption: 57,800 MWh-eq Natural Gas (10.0%): 5,818 MWh-eq Diesel (90.0%): 51,981 MWh-eq
Total energy consumption within the organization, including methods and assumptions in the calculations	Total Energy Consumption: 3,288,184 MWh-eq Electricity (98.2%): 3,230,381 MWh <u>Grid Energy</u> (87.0%): 2,809,673 MWh <u>Purchased Renewables</u> (13.0%): 420,708 MWh Fuels (1.8%): 57,802 MWh-eq Calculation based on purchased electricity and fuels. Conversion factors from ICT Footprint (European Framework Initiative for Energy & Environmental Efficiency in the ICT Sector) for diesel energy content, NREL:

Metric	Response
	https://openei.org/wiki/Definition:Therm. The energy consumption data covers 100% of directly managed colocation floor area of portfolio.
Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, technology, products, or services)	Not Available
Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)	Not Available
Building energy intensity (by organization specific metric); intensity ratio for the organization	0.856 MWh/ <i>built-out</i> colocation square foot across all directly managed facilities, including electricity, natural gas, and diesel consumption within the organization
Water	
Total water withdrawal, consumption, and discharge	All Facilities Water withdrawn: 1,368 ML Water discharged: 133 ML Water consumed: 1,235 ML Water restored: 46 ML High Water Stress Facilities Water withdrawn: 738 ML Water discharged: 41 ML Water consumed: 697 ML Water restored: 46 ML Geothermal System Water withdrawn: 2,984 ML Water discharged: 2,984 ML Water consumed: 0 ML
Building water intensity (by occupants or square area)	Building water intensity (withdrawal only): 308 liters/ <i>built-out</i> colocation square feet Building water intensity (net water consumption): 301 liters/ <i>built-out</i> colocation square feet Net water consumption includes water restoration offsets

Assurance Statement



Independent Assurance Statement

Provided by ISOS Group, Inc.
On selected environmental and social metrics included in:
CyrusOne
2022 Sustainability Report.

To the Management Team of CyrusOne:

ISOS Group, Inc. ["ISOS" or "we"] were engaged by CyrusOne ["Client"] to conduct moderate level type 2 assurance of environmental and social data to be reported in its 2022 Sustainability Report ["Report"], covering the period beginning January 1, 2021 and ending December 31, 2021.

We have performed our moderate assurance engagement in accordance with the AccountAbility 1000 Assurance Standard v3 ("AA1000AS"). Our review was limited to the data reported in CyrusOne's 2022 Sustainability Report comprising of:

- Energy,
- Greenhouse gas emissions,
- Water,
- Waste,
- Occupational safety metrics,
- Workforce DEI metrics,
- Diverse supply chain spend.

We have not performed any procedures with respect to other information included in 2022 Sustainability Report and, therefore, no conclusion on the Report as a whole is expressed.

CyrusOne's responsibilities

The Company's management are responsible for:

- Preparing the data in accordance with generally accepted reporting practices,
- The accuracy and completeness of the information reported,
- The design, implementation and maintenance of internal controls relevant to the preparation of the report to provide reasonable assurance that the report is free from material misstatement, whether due to fraud or error,
- Ensuring the data performance is fairly stated in accordance with the applicable criteria and for the content and statements contained therein.

Criteria

The assurance process was intended to provide an independent opinion confirming that the Client has complied with procedures for data management at the company and minimized degrees of error by adequately:

1. Sourcing data to populate relevant data management systems,
2. Enforcing management and quality controls across the reporting period,
3. Aggregating and converting metrics into the correct unit of measure, and
4. Properly calculating and transposing total figures to disclosure mechanisms.

Boundary

Organizational Boundary	CyrusOne owns and operates carrier-neutral data centers in North America, Europe, and Asia, where it provides colocation and peering services.
Reporting Boundary	The reporting boundary consists of all operational facilities within the organizational boundary. Facilities under development are excluded except for construction contractor safety metrics and diverse supply chain spend metrics.
Assurance Boundary	The assurance boundary was limited to the Client's fifty-six (56) operational assets and included facilities under development for construction contractor safety and diverse supply chain spend metrics only.
Environmental Data Boundary	The GHG emissions boundary followed the operational control methodology specified in the GHG Protocol. The same boundary was applied for energy, water and waste metrics.

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Limitations and Exclusions

Greenhouse gas quantification is unavoidably subject to inherent uncertainty because of both scientific and estimation uncertainty and for other non-financial performance information the precision of different measurement techniques may also vary. Furthermore, the nature and methods used to determine such information, as well as the measurement criteria and the precision thereof, may change over time. No visit to the Client's headquarters or facilities was conducted throughout this engagement. However, a sample set of properties were reviewed in more granularity and tested for data accuracy. It was determined that these limitations and exclusions do not materially impact the performance criteria or assurance engagement.

Methodology

The assurance procedures undertaken were to determine the strength of the systems in place. ISOS Group:

- Engaged a sample of individuals responsible for performance measurement,
- Evaluated current management systems for performance data collection, compilation, calculation, reporting, and validation,
- Determined consistency of assessing materiality, management approach, and application of quality control procedures,
- Reviewed sustainability disclosures, supporting data, and justification for rectifying discrepancies,
- Validated alignment to standard reporting protocols to ensure accurate claims to the quantitative methodology and approach and assurance claims,
- To verify quantitative claims, both at the aggregate level and on a sample basis, and test accuracy, consistency, completeness, and reliability, ISOS Group:
 1. Conducted a portfolio assessment analyzing performance results to uncover any errors, misstatements, gaps, or performance anomalies,
 2. Brought all findings to the Client's attention to address and confirmed resolution,
 3. Selected the following properties for testing and analysis, including cross-reference to primary source data to uncover variances and address any exclusions and other limitations:
 - a. 7th Street (Cincinnati, OH)
 - b. Carrollton (Dallas, TX)
 - c. Frankfurt II (Germany)

Findings

Based on the process and procedures conducted, there is no evidence that the metrics reported by the Client are not materially correct. Our analysis suggests that these metrics provide a fair representation of the Client's environmental and social impacts to stakeholders for the stated period and reporting boundary.

Application of the AA1000AP

Findings and conclusions concerning adherence to the AA1000 AccountAbility Principles:

Inclusivity	CyrusOne has identified four key stakeholder groups with whom it engages: Customers, Investors, Community, and Employees. CyrusOne could consider the development of a stakeholder map outlining engagement methods, expectations and results of engagement.
Materiality	CyrusOne outlines its materiality assessment process in its annual Sustainability Report. CyrusOne conducts its environmental materiality assessment separately from its social and governance materiality assessment. CyrusOne may consider a consolidated approach to prioritize ESG objectives.
Responsiveness	CyrusOne publishes an annual sustainability report outlining timely progress on key sustainability issues. The report is aligned to leading reporting standards and is both clear and extensive in its content.
Impact	CyrusOne outlines performance measurement within its sustainability report, including the criteria for and progress on its sustainability goals. CyrusOne may consider alignment to generally accepted goal setting criteria, such as the Science-Based Target Initiative.

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Restriction of use

This assurance report is made solely to the Client in accordance with the terms of our engagement, which include agreed arrangements for disclosure. Our work has been undertaken so that we might state to the Client those matters we have been engaged to state in this moderate assurance report and for no other purpose. Our moderate assurance report should not be regarded as suitable to be used or relied on by any party wishing to acquire rights against us other than the Client for any purpose or in any context. Any party other than the Client who obtains access to our moderate assurance report or a copy thereof and chooses to rely on our moderate assurance report (or any part thereof) will do so at its own risk. To the fullest extent permitted by law, we accept or assume no responsibility and deny any liability to any party other than the Client for our work, for this independent moderate assurance report, or for the conclusions we have reached.

Statement of Competency and Independence

ISOS Group is an independent professional services firm that specializes in sustainability reporting under the Global Resources Initiative (GRI), CDP, and GRESB and is a provider of external assurance services. ISOS Group is a Global Reporting Initiative Certified Training Partner for the United States and a CDP Silver Education and Training Partner in the United States. Our team of experts have the technical expertise and competency to conduct assurance to the AA1000 assurance standard, which meets the criteria for assurance of environmental and social data.

No member of the assurance team has a business relationship with the Client, its Directors, or Managers beyond that required of this assignment. We conducted this assurance independently and, to our knowledge, there has been no conflict of interest. ISOS Group has a strong code of ethics and maintains high ethical standards among its staff in their day-to-day business activities. The assurance team has extensive experience in conducting assurance engagements over environmental, social, ethical, and health and safety information systems and processes.

Further information, including a statement of competencies, can be found at www.isosgroup.com.

Signed on behalf of ISOS Group: San Diego, California – USA, June 13, 2022.



Brian Noveck
CSAP Practitioner



AA1000
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000-284

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