

A photograph of two white wind turbines standing in a lush green cornfield under a clear blue sky. The turbines are positioned on the right side of the frame, with the foreground filled with rows of young corn plants. The sky is a vibrant blue with a few wispy white clouds.

CTA's 2020 Industry Report on GHG Emissions

November 2020

**Consumer Technology
Association™**

Introduction

The consumer technology industry plays a critical role in the battle against climate change. First, continuous innovation means consumer technology devices use less energy while offering ever more functionality and versatility. The industry also provides solutions for other sectors to reduce their climate change impacts by reducing the need for physical travel, making HVAC data actionable to reduce impacts of the built environment, and deploying machine learning to make all the systems that support our daily lives more energy efficient. And our industry leads all institutional purchasers of electricity by requiring renewable energy to power data centers throughout the United States and across the world.

As inventors, designers, engineers, coders, chemists and data analysts, our industry is essential to ensuring our planet's sustainability and resilience while empowering people to make their lives better. And we take this responsibility seriously, creating and implementing innovations to reduce energy use, GHG emissions, and waste.

Beyond product improvements and cross-sector solutions, consumer technology companies have demonstrated strong leadership by setting – and in some cases already achieving and exceeding – stretch greenhouse gas (GHG) emissions reduction goals for their operations and value chains.

These commitments deliver meaningful impact. Our industry reduced its GHG emissions by 7.4% in the U.S. and 4.1% globally between 2017 and 2018, while the industry experienced economic growth of 11.4%. Yet even as we celebrate this progress, we acknowledge much more work remains.

In 2017, shortly after the U.S. announced its intention to withdraw from the Paris Agreement on climate change, the Consumer Technology Association's (CTA's) Board of Industry Leaders resolved to continue combatting climate change in the spirit of the agreement. With the resolution, CTA committed to the following:

- **Measuring GHG emissions** produced by the consumer technology industry on an annual basis as reported through and vetted by a third-party organization (e.g., CDP).
- **Tracking and publicly reporting** on the combined progress made by CTA's members in reducing GHG emissions on a year-over-year basis as well as highlighting individual company initiatives.
- **Recognizing** the climate program achievements of individual CTA members – from those just starting on the journey to those already demonstrating extraordinary performance.
- **Encouraging** members who have not yet either assessed their emissions or developed mid-term or long-term goals for GHG emission reductions to do so.

As part of our commitment to this initiative, CTA presents this second annual report quantifying GHG emissions data from CTA member companies who publicly disclose their emissions data. We are proud to highlight the collective and individual accomplishments of our members in reducing GHG emissions year-over-year, both in the U.S. and across the globe.

Innovation Leading the Way

The Trends

The consumer technology industry is a shining example that economic growth and environmental stewardship can coexist. We are an industry that rises to meet challenges and follows through on our commitments. CTA’s members are leading the way in making significant progress in the fight against climate change.

Two years of tracking show CTA’s members continue to make an impact comparing data against our baseline data for the 2016 calendar year.

↓14.6%

Decrease in U.S. Scope 1 and 2 emissions between 2016 and 2018.

↓2.1%

Decrease in Worldwide Scope 1, 2 and 3 emissions between 2016 and 2018.

↓7.4% U.S. Scope 1 and 2 emissions¹ decreased between 2017 and 2018.

↑24 of CTA’s members reporting to CDP received an ‘A’ ranking.

↓4.1% Worldwide Scope 1, 2, and 3 emissions decreased between 2017 and 2018.*

↑26 CTA members have approved SBTi targets.

Our industry reduced emissions while experiencing growth of 11.4%. The innovation and efficiencies that drive our industry forward are the same innovation and efficiencies that it takes to reduce GHG emissions.

*Scope 1 GHG emissions are the direct emissions from sources owned or controlled by a company (e.g., facilities, vehicles). Scope 2 GHG emissions are indirect emissions from energy generation. Scope 3 GHG emissions are emissions from sources not owned or controlled by a company including value chain emissions.



AT&T – ‘Sleeping Cells’: Cell sites supporting AT&T’s wireless coverage are significant contributors to the AT&T energy

footprint. AT&T created industry leading innovations to reduce cell-site energy consumption. AT&T leveraged its Open Network Automation Platform— together with industry-leading, patented machine learning-based analytics—to make intelligent decisions that safely allow a subset of a cell site’s capacity to temporarily go into a sleep mode, maintaining activation of capacity only to the level needed to satisfy demand in a given time and location. This intelligence will determine the timing and duration of the sleep mode, enabling AT&T to reduce its energy footprint while maintaining a premium customer experience. In 2018, ‘Sleeping Cells’ implementation was rolled out to approximately 6,837 cell sites and drove nearly 37 million kWh annualized energy savings (more than 25,000 mtons of CO₂e).



Leading the Industry

CTA members understand committing to reducing GHG emissions means ensuring those commitments are science-based and aligned with the level of reductions needed to keep global temperature increases below two degrees Celsius.

The Innovators

CTA is proud to recognize its members who have approved targets from the Science Based Target initiative (SBTi)². This year includes 13 additional companies with approved targets over our first annual report released in 2019. This is a significant accomplishment, and we applaud all these industry leaders.

- Accenture
- Adobe, Inc.
- Advanced Micro Devices, Inc
- AT&T Inc.
- Autodesk, Inc.
- Best Buy Co., Inc.
- Cisco Systems, Inc.
- Colgate Palmolive Company
- CVS Health
- Dell Technologies*
- Grant Thornton UK
- HP Inc
- International Flavors & Fragrances Inc.
- L'Oréal
- Microsoft Corporation
- Nikon Corporation
- Panasonic Corporation
- Procter & Gamble Company
- Robert Bosch GmbH
- Schneider Electric
- Seagate Technology PLC
- Sharp Corporation
- Sony Corporation
- T Mobile USA inc
- Walmart, Inc.
- Yamaha Corporation

CTA recognizes several members who have submitted letters of commitment to SBTi. We look forward to spotlighting them soon for their approved SBTi targets.

- Nissan Motor Co., Ltd.
- OMRON Corporation
- SK Telecom
- Toyota Motor Corporation
- Verizon Communications Inc.



Lenovo – Transport Efficiencies through Packaging:

Lenovo closely examines opportunities to minimize packaging weight and size to further save on carbon emissions from the global logistics footprint of its products. For instance, it reduced individual carton sizes by 0.4% for its ThinkPad X280 packaging. This may sound small, but this reduction allowed Lenovo to increase pallet density by 18%, resulting in an estimated 6.7% efficiency improvement in its transportation emissions.

Note: All companies listed are CTA members as of the publication of this report. Companies with (*) indicate subsidiary company holds the membership.



The Leaders

CTA also recognizes reported GHG emissions data must be comprehensive and based on sound methodology. CTA applauds the following 24 companies who received 'A' rankings from CDP³. This is no small accomplishment – 22% of CTA's members reporting to CDP received this recognition. For perspective, only 2% of all companies reporting to CDP received this recognition.

- Accenture
- Adobe, Inc.
- Alphabet, Inc.*
- American Express
- Apple Inc.
- Best Buy Co., Inc.
- Cisco Systems, Inc.
- CVS Health
- Ford Motor Company
- HP Inc
- International Flavors & Fragrances Inc.
- Johnson & Johnson
- LG Display*
- LG Electronics*
- LG Innotek*
- L'Oréal
- Microsoft Corporation
- Nikon Corporation
- Nissan Motor Co., Ltd.
- Panasonic Corporation
- Schneider Electric
- Sony Corporation
- Toyota Motor Corporation
- Walmart, Inc.

Note: All companies listed are CTA members as of the publication of this report. Companies with (*) indicate subsidiary company holds the membership.

The Data and Methodology

U.S. Year-over-Year Emissions Summary:

CTA presents the below summary of U.S. Scope 1&2 emissions data comparing 2017 and 2018 emissions (as publicly reported to CDP in 2018 and 2019).⁴ Twenty-six CTA members with electronics as their core business – more than half the CTA member companies included in our global YoY comparisons – reported U.S. data to CDP across both years. These companies continue downward trends from U.S. operations with a decrease of 7.4% between 2017 and 2018.

CO2E EMISSIONS	METRIC TONS 2017	METRIC TONS 2018	% CHANGE
Scope 1	4,963,233	4,817,279	-2.9%
Scope 2	15,128,974	13,778,778	-8.9%
Total	20,092,207	18,596,058	-7.4%

Comparing against CTA’s baseline data for calendar year 2016, CTA member companies demonstrated a 14.6% decrease in U.S. Scope 1 and 2 emissions.⁵

CO2E EMISSIONS	METRIC TONS 2016	METRIC TONS 2018	% CHANGE
Scope 1	4,838,274	4,685,411	-3.2%
Scope 2	15,265,406	12,479,653	-18.2%
Total	20,103,680	17,165,064	-14.6%



Samsung – Renewable Energy Commitment: In 2018, Samsung announced its goal to source 100 percent renewable energy for energy used in its establishments – factories, office buildings and operational facilities – in the U.S., Europe and China by 2020. Between 2017 and 2018, Samsung Electronics America, Samsung Austin Semiconductor, LLC, and Samsung Semiconductor increased their green power usage over 56 percent through a purchase of Renewable Energy Credits (RECs) from wind farms as well as a rooftop solar array. This green power use, which is equivalent to the electricity use of approximately 115,000 average American homes annually, represents 100 percent of the total power needs of Samsung Electronics America, Samsung Austin Semiconductor and Samsung Semiconductor.

Global Year-over-Year Emissions Summary

Over the short term, the vast growth of businesses – especially in new markets with huge expansions and emerging technologies – presents challenges to global reductions in GHG emissions, which we saw in CTA’s 2019 annual report. Yet despite rapid product and services growth, companies are increasingly putting in place more future-facing initiatives and operations to growing success. We are pleased to report this year that 48 CTA members with electronics as their core business publicly reported 2017 and 2018 emissions data to CDP (as reported in 2018 and 2019). With the industry experiencing growth of 11.4% during this timeframe, CTA members reduced their worldwide GHG emissions by 4.1% between 2017 and 2018.

CO2E EMISSIONS	METRIC TONS 2017	METRIC TONS 2018	% CHANGE
Scopes 1&2	72,204,383	72,524,496	0.4%
Scope 3	755,263,178	720,967,148	-4.5%
Total	827,467,561	793,491,644	-4.1%



Verizon – Supporting Wind and Solar Farm Construction: As of 2018,

Verizon entered into long-term virtual power purchase agreements for 384 megawatts of anticipated renewable energy capacity. These agreements will help finance the construction of new wind and solar farms. The additional renewable energy capacity supported by these agreements is expected to reduce carbon emissions by an amount equivalent to removing more than 140,000 passenger vehicles from the road on an annual basis.



LG Electronics USA – Lifecycle Product Perspective: In 2018, LG

Electronics (LGE) continued its efforts to reduce greenhouse gas emissions throughout the life cycle of a product by reducing the weight of products and use of resources, as well as improving energy-efficiency to achieve the greenhouse-gas emissions reduction goals in product use by 2020.

In particular, LGE contributed to the reduction of greenhouse-gas emissions during the application stage by developing and releasing energy-efficient products. LGE utilizes data on energy consumption based on product-usage time and pattern analysis and consumption of power according to the standard usage scenario of a product. LGE also provides information on GHG emissions generated from using products to the customers in order to promote a low-carbon consumption culture that can be led by customers. In 2018, LGE expanded its products that use high-efficiency energy technologies to reduce greenhouse gas emissions at the product use stage by approximately 55.54 million tons (compared to the level of power consumption in 2007).

Comparing against CTA’s baseline data for calendar year 2016, CTA member companies demonstrated a 2.1% decrease in global emissions.⁶

CO2E EMISSIONS	METRIC TONS 2016	METRIC TONS 2018	% CHANGE
Scopes 1&2	69,672,287	72,755,254	4.4%
Scope 3	700,957,141	681,367,527	-2.8%
Total	770,629,428	754,122,781	-2.1%



HP – Supply Chain Engagement: HP’s supply chain accounts for almost half of HP’s carbon footprint, so collecting climate data from its suppliers is

paramount. By communicating the importance of understanding and managing their climate-related risks and impacts to suppliers, HP has successfully compiled and reported extensive climate-related data:

- HP publishes a list of its direct production suppliers along with links to their public sustainability reports.
- HP measures success by the rate of adequate carbon footprint responses received and expects a direct supplier response rate of 95% by direct production spend.
- As of 2018, HP had achieved this 95% response rate in each year since 2010.
- From 2016 to 2018, the percentage of HP indirect strategic suppliers that produced environmental reports increased from 52% to 75%.

Summary

The consumer technology industry is committed to identifying and creating solutions to environmental challenges which is why CTA's Board of Industry Leaders resolved to continue combating climate change in the spirit of the Paris Agreement after the U.S. announced its intention to withdraw. With levels of greenhouse gases at historically high levels, the need to monitor our changing climate has never been more important. By tracking the progress tech companies have made toward reducing carbon emissions, we have a better understanding of how our industry can make a positive impact on our planet, now and for future generations.

While challenges and improvements remain, there is reason to be optimistic about our industry as a model for a sustainable future. As this report shows, the tech industry has made progress in several key areas including more efficient manufacturing and distribution methods, growing its commitment to renewable energy and reducing emissions in the United States. And already, through industry initiatives and innovation, today's tech devices are faster, smarter, more powerful and more efficient than ever.

In recent decades, CTA members have made our industry one of the fastest growing while also leading the way on environmental initiatives. More and more, tech companies are delivering the life-changing innovations consumers demand, while reducing the overall emissions from those products. Ultimately, the biggest changes our industry can make to combat climate change will come from the products that consumers use. A 2017 [CTA study](#) found tech devices in U.S. homes accounted for 25% less residential energy use than they did in 2010, even as the number of these devices in U.S. homes increased 21%.

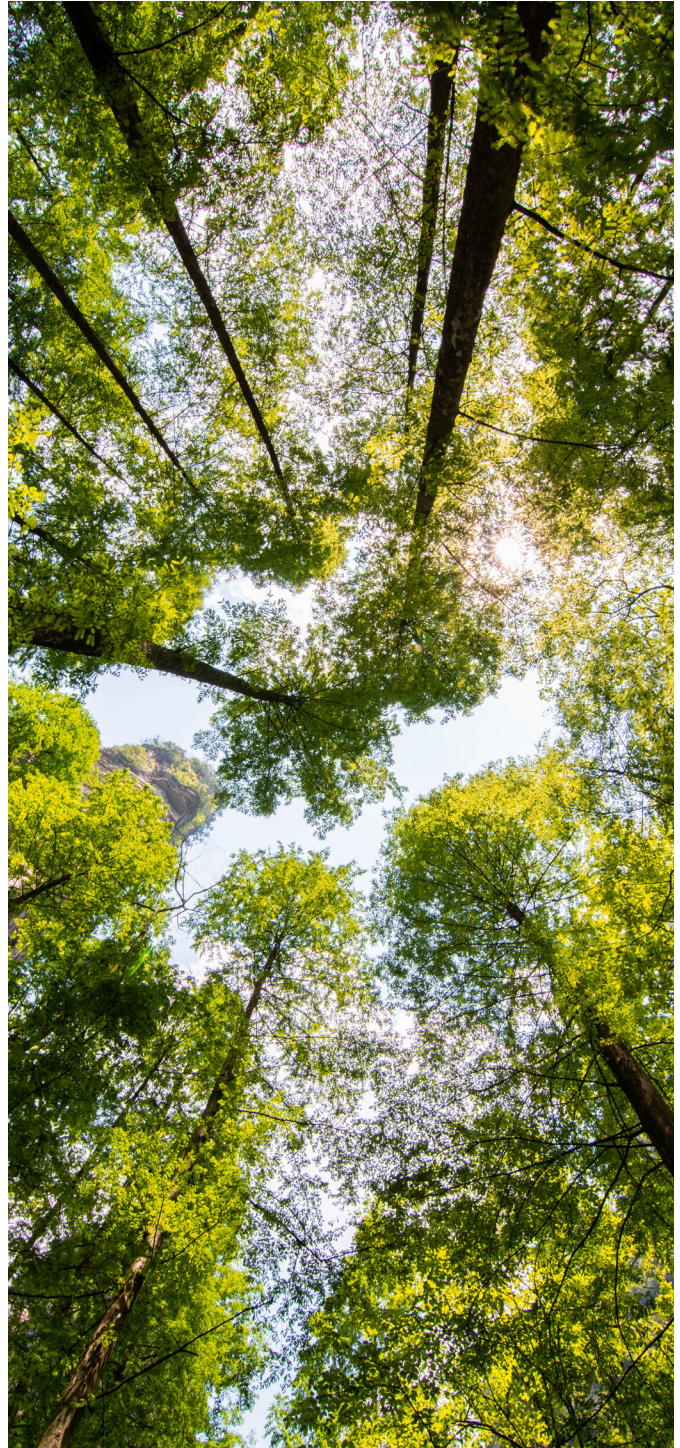
These product innovations combined with company operational, manufacturing and supply chain commitments to reducing greenhouse gas (GHG) emissions will make a truly significant impact. While complete transformation won't happen overnight, CTA is proud our members are leading us down the path to sustainability – one that will benefit consumers and the planet for generations to come. To learn more about the industry's efforts and overall sustainability, visit [CTA.tech](https://cta.tech).



Appendix

Methodology: The following summarizes how CTA analyzes and presents the publicly reported CDP data from our member companies.

- CTA is committed to full and transparent reporting on its methodologies.
- For each annual report, CTA analyzes and presents publicly reported data obtained directly from CDP. CTA will only focus on CDP data from CTA member companies whose primary business involves one or more phases of consumer electronics technology – from manufacturing to retailing electronics products or providing technology services.
- In presenting CDP data,
 - CDP 2019 Reporting: Reflects company emissions from calendar year 2018
 - CDP 2018 Reporting: Reflects company emissions from calendar year 2017
 - CDP 2017 Reporting: Reflects company emissions from calendar year 2016
- For Year-Over-Year Numbers, companies included have provided reporting figures for both the current and prior year. By comparing only continuing participants, each year will provide meaningful comparison against previous year's result.
- CTA has not included any individual company CDP reported data. All reported data is aggregated data for electronics companies.
- Individual companies are highlighted in recognition for CDP A ranking and SBTi. This includes all CTA members, not just those whose primary business involves consumer electronics technology.



References

¹GHG emissions data as reported through CDP and reflected in this report includes data from CTA members whose primary business involves one or more phases of consumer electronics technology – from manufacturing to retailing electronics products, or providing technology services.

²SBTi is a joint program of CDP, World Resources Institute and World Wildlife Fund with the goal of promoting emission reductions sufficient for each participant to meet its quota for reaching Paris Agreement reductions necessary to meet 2 degrees C limit. Once SBTi approves company plans, it sets company emission targets.

³CDP ranking based on assessment of level of details provided to CDP responses; comprehensiveness of content/data provide; company awareness of climate change issues, management methods and progress on climate change initiatives.

⁴Because of the widely dispersed sources of Scope 3 value-chain GHG emissions, there is no specific geographical breakout of Scope 3 emissions. To be included, companies must have reported to CDP in both 2018 (2017 emissions data) and 2019 (2018 emissions data).

⁵The 2016 to 2018 comparison includes data from twenty-two CTA member companies with electronics as their core business that reported US data across both years.

⁶While the same number (48) of CTA electronic company members were compared for both 2017-2018 emissions and 2016-2018 emissions, some of the companies included in the comparisons changed. Some companies reported 2016 and 2018 emissions, but not 2017 emissions, while other companies that reported emissions for 2018 and 2017 had not reported in 2016.

About

**Consumer
Technology
Association™**

Consumer Technology Association

As North America's largest technology trade association, CTA® is the tech sector. Our members are the world's leading innovators – from startups to global brands – helping support more than 18 million American jobs. CTA owns and produces CES® – the most influential tech event in the world. Find us at CTA.tech. Follow us @CTAtech.

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