

2024

Amazon Sustainability Report



AWS Summary



About AWS

AWS is the world’s most comprehensive and broadly adopted cloud offering, with millions of global users depending on it every day. To build a more sustainable business for our customers and for the world we all share, we’re designing data centers to provide the efficient, resilient service our customers expect while minimizing our environmental footprint—and theirs.

All financial figures are reported in U.S. dollars (\$), unless otherwise stated. The data within this summary reflects progress from January 1 through December 31, 2024, unless otherwise indicated.



Learn more about Amazon’s overall progress in our [2024 Sustainability Report](#) ↴

How to Navigate This Report

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The Spheres, Amazon’s unique workspace in Seattle, contains plants from cloud forest regions worldwide.



2024 Year in Review

As we reflect on 2024, we are proud of our achievements. We have worked hard to reduce our environmental footprint, drive improvements throughout our value chain, create a safer, more inclusive place for people to work, and provide skills development opportunities, empowering our people to grow. These actions are accelerating our journey toward a more sustainable business at AWS.



The AWS AI & ML Scholarship program helps students learn AI skills through expert training and mentorship.

100%

Of electricity consumed by Amazon was matched with renewable energy sources in 2024, for the second consecutive year

Since 2020, Amazon has been the world's largest corporate purchaser of renewable energy annually

1.15

Global Power Usage Effectiveness (PUE) for AWS data centers, compared to the industry average of 1.25

12K MTCO₂e

Reduction from customer adoption of Graviton chips

38

Data centers constructed with lower-carbon concrete, in addition to 36 data centers in 2023

36

Data centers with lower-carbon steel in 2024, in addition to 31 in 2023

Nearly \$2M

In AWS credits provided to 41 customers affected by eight natural disasters

71K MTCO₂e

Reduction from Amazon's own adoption of Graviton chips

Goal

Distribute up to \$60 million in AWS cloud computing credits to support global health by the end of 2024

\$60M

In cloud computing credits awarded to 403 global customers since 2021

82K

Students provided access to science, technology, engineering, and math (STEM) education through 93 AWS Think Big Spaces, which allow for hands-on exploration

0.15

L/kWh water use effectiveness (WUE) for Amazon's data centers, a 17% improvement from 2023

Goal

AWS will be water positive by 2030, returning more water to communities than it uses in its direct operations

53%

Of the way toward meeting its water positive goal



4.3B

Liters of water returned to communities from active replenishment projects, with more than 7 billion liters of total annual contracted replenishment volume for future years

Carbon and Energy

Amazon is investing in new solutions to decarbonize our business by using our size, scale, and resources to drive progress across our supply chain and the industries in which we operate.¹

Through [The Climate Pledge](#), Amazon’s goal is to reach net-zero carbon emissions across our global operations by 2040. AWS supports this goal by taking action to reduce carbon emissions and increase energy efficiency throughout our operations and supply chain.

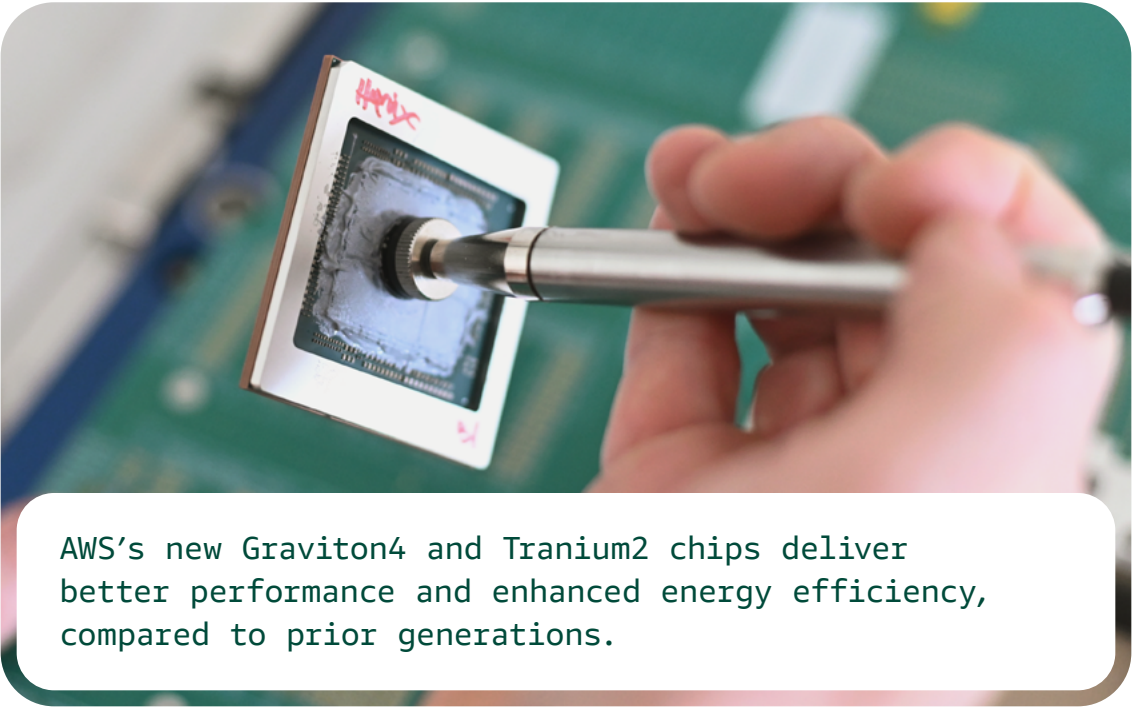
In 2019, Amazon set an ambitious goal to match 100% of the electricity we use with renewable energy by 2030. In 2024, 100% of the electricity consumed by Amazon was matched with renewable energy sources for the second consecutive year.²

Driving Efficiency Across Our Global Operations

As the world’s most comprehensive and broadly adopted cloud, AWS is committed to building a more energy efficient and lower-carbon business for our customers and the planet, especially as advancements in digital transformation and adoption of advanced technologies such as artificial intelligence (AI) increase global demand for data center capacity. [Research](#) estimates AWS infrastructure is up to 4.1 times more efficient than on-premises computing, and when workloads are optimized on AWS, the associated carbon footprint can be reduced by up to 99%.

In 2024, AWS reported a global PUE of 1.15—better than both the public cloud industry average of 1.25 and 1.63 for on-premises enterprise data centers, as estimated by the International Data Corporation.³ A lower PUE value indicates greater efficiency, with the theoretical minimum PUE being 1.0.⁴ This was achieved through optimized data center designs, purpose-built chips, and innovative cooling technologies. Additionally, in 2024, we unveiled new AWS data center components, offering 12% more compute power with improved availability and efficiency. AWS [also introduced a novel, direct-to-chip liquid cooling solution](#) for high-density AI compute chips in new and existing data centers. These components reduce mechanical energy consumption by up to 46% during peak cooling—without increasing water usage.

Additionally, with increased computing power required for AI and other applications, investing in purpose-built chips that advance innovations in power efficiency continues to be an important part of our strategy. We offer a number of chips with energy-efficiency benefits. For example, Graviton-based instances use up to 60% less energy than comparable instances for the same performance. At the end of 2024, over 70,000 customers had adopted Graviton chips, achieving an estimated reduction of 12,000 MTCO₂e due to increased energy efficiency. Amazon’s own adoption of Graviton chips has achieved an estimated



reduction of 71,000 MTCO₂e in 2024. Other efficiency savings include Inferentia2-based instances, which offer up to 50% better performance/watt over comparable Amazon Elastic Compute Cloud (EC2) instances, and AWS Trainium3 chips are designed to be up to 40% more energy efficient than AWS Trainium2 chips.

Selecting Lower-Carbon Alternatives

In 2024, 49 building projects across Amazon, including data centers, grocery stores, fulfillment centers, and corporate offices, were constructed with lower-carbon building materials and finishes. These projects avoided at least 77,000 metric tons of embodied CO₂e in 2024.⁵

- **Lower-carbon steel:** In 2024, Amazon [joined the Sustainable Steel Buyers Platform](#), a coalition of leading corporations working to accelerate the availability of lower-carbon steel in North America, in particular lower-carbon iron making technologies. AWS constructed 36 data centers with lower-carbon steel in 2024, in addition to 31 in 2023. AWS also achieved an industry first by purchasing steel made using hydrogen direct reduction from SSAB, a Swedish steel company, and using it in one data center’s facade. Hydrogen direct reduction is a key technology that could help decarbonize the 76.3% of global steel production that uses iron ore.⁶
- **Lower-carbon concrete:** We piloted lower-carbon concrete solutions with a number of manufacturers in 2024 to explore the use of calcined clay, natural pozzolans, as well as cement containing less than 25% clinker—a key concrete ingredient that accounts for a substantial portion of its embodied carbon emissions.⁷ AWS used 9,600 cubic yards of less than 25% clinker concrete at a data center in South Bend, Indiana, in the U.S. This resulted in 1,500 tons of CO₂e avoided, which

is a 60% reduction against a 2021 baseline. In March 2025, this work was recognized as [“Slag Cement Project of the Year”](#) by the Slag Cement Association, and won a “Concrete Innovations” award from the National Ready Mixed Concrete Association. We continued to promote the use of lower-carbon concrete across our industry by working with the Center for Green Market Activation and RMI toward a proposed book-and-claim system for concrete to accelerate demand-side initiatives. In January 2024, AWS updated its design standards to require the use of concrete with 35% less embodied carbon than the industry average in new data centers around the world. In 2024, 38 data centers were constructed with lower-carbon concrete, in addition to 36 data centers in 2023.

Increasing Use of Lower-Carbon Fuels and Alternative-Fuel Vehicles

Electrification is our primary strategy for decarbonizing logistics and transportation network vehicles. Where electrification is not yet feasible, we are scaling and encouraging the use of lower-carbon fuels, focusing on road transportation in the short term and ocean transportation and aviation over the long term. While these fuels are important to our strategy, they remain nascent, with industry challenges including supply constraints, high prices, and limited access. We are making investments to help lower costs and scale supply, and through industry collaborations, we aim to encourage the development and expansion of lower-carbon fuels, making these fuels more accessible and affordable for everyone. We engage in efforts that focus on:

- **Sustainable Aviation Fuel (SAF):** For air transportation, we source lower-carbon SAF and support the development of SAF EACs. We are working with peers on innovative solutions to resolve the low volume and high cost of SAF.



- **Renewable diesel:** In 2024, we transitioned AWS backup generators to renewable diesel in parts of Europe and the U.S.

Transitioning to Carbon-Free Energy

As the energy needs of our business and customers continue to grow, we are continuing to invest in renewables and new sources of carbon-free energy that can both help power our operations and bring new sources of energy to the grid. Our energy portfolio includes renewable energy sources such as solar and wind, as well as nuclear power, which can be brought online at scale, and has a decades-long record of providing a reliable source of safe, carbon-free energy for communities around the world. We are also expanding battery energy storage capacity to collect and store renewable energy to use when other energy sources may be unavailable—such as at night or during periods of high demand—and to help improve grid stability.

We recognize that making the transition to carbon-free energy will require embracing and advancing a range of technologies and innovations—there is not a one-size-fits-all approach. We need to consider all viable and scalable solutions. In addition to lowering emissions, the transition to carbon-free energy can create real economic growth in communities where energy projects are built and operate, while encouraging the modernization and better management of energy infrastructure.

Solar and Wind Projects

Our approach to expanding our renewable energy footprint includes robust investment in utility-scale wind and solar projects. We have a strong track record of enabling utility-scale renewable energy projects, as one of the first corporations to do so in India, Ireland, South Africa, Japan, and Indonesia. In 2024, Amazon invested in 302 utility-scale wind and solar projects globally, including 76 newly operational ones, in 29 countries.

As of the end of 2024, we had announced 302 power purchase agreements (PPAs).

Data Center Electricity Use Matched by Renewable Energy

In 2024, we continued to match 100% of electricity consumed in all data center regions with renewable energy sources and worked with utilities and regulators on green tariffs so that more companies can buy carbon-free energy directly from renewable energy projects. In 2024, as part of a \$10 billion investment for building two new data center complexes in Mississippi, AWS announced [a first-of-its-kind agreement with utility company Entergy Mississippi](#) to enable 650 MW of new renewable energy projects in the state over the next three years. This investment, along with Amazon's prior investment in Delta Wind, a utility-scale wind farm along the Mississippi Delta, is expected to bring a total of 834 MW of new carbon-free energy to Mississippi, the equivalent of powering over 200,000 U.S. homes.

Battery Storage Solutions

In 2024, Amazon invested in the [Baldy Mesa battery storage system](#), which is monitored through machine learning powered by AWS and is used to predict when and how the project's battery unit should charge and discharge energy back to the grid, optimizing its performance. We signed the first European Union (EU) Battery Energy Storage System (BESS) PPA that includes a 4 MW rooftop solar photovoltaic system paired with a BESS in Spain. This BESS initiative is expected to yield nearly 500 metric tons of CO₂e avoided annually and enhanced energy resilience.

Nuclear Energy Sources

Nuclear power is an important part of our carbon-free energy strategy, as it can be brought online at scale and has a decades-long record of providing reliable, safe, and abundant carbon-free energy for communities globally.

In 2024, we signed agreements to support the development of nuclear energy projects, including enabling the [development of Small Modular Reactors](#) (SMRs)—advanced nuclear reactors with a small physical footprint. This smaller size allows them to be built closer to the grid, with faster build times, allowing them to come online sooner than traditional reactors. Through The Climate Pledge Fund, Amazon led an approximately \$500 million Series C-1 financing round in X-energy to support nuclear technology development. X-energy is targeting deployment of up to 960 MW of carbon-free energy to the U.S. grid by 2039—which would be the largest SMR implementation in the industry. X-energy's Xe-100 SMR technology delivers scalable, cost-effective carbon-free energy generation for high-demand industrial customers and aims to establish a commercial framework for advanced nuclear energy deployment in the private sector. We also began working with Energy Northwest on a project to develop SMRs.

Engaging With Suppliers

AWS engages with its suppliers across the semiconductor and electronics manufacturing industries to set emission reductions roadmaps, and to increase the adoption of carbon-free electricity. AWS is also a member of SEMI's Semiconductor Climate Consortium (SCC) and worked to increase access to carbon-free power and decarbonization standards and tools for the semiconductor industry.

Engaging With Customers

AWS's [Customer Carbon Footprint Tool](#) allows customers to track, measure, review, and forecast the estimated carbon emissions generated from AWS usage. The tool helps our customers monitor carbon emissions generated by AWS resources across a number of services, regions, and time periods, and this transparency allows customers to identify areas of higher emissions and implement targeted optimizations to reduce their footprint.



The battery and storage system used in the Baldy Mesa Solar and Storage Project in Adelanto, California (developed and operated by AES), is monitored through machine learning powered by AWS.



Waste and Circularity

Our waste hierarchy sets our guiding principles for preventing, managing, and reducing waste. Amazon has programs in place to optimize our inventory, reduce food surplus, and source materials that help us prevent waste from the start. Where possible, we look for ways to reduce, reuse, recycle, or compost these materials. When waste is unavoidable, our priority is to recycle it, minimizing what is sent to landfill and incineration.

Embracing Circular Economy Principles

AWS embraces circular economy principles by designing reusable and lower-carbon server rack systems from the outset, keeping equipment operating efficiently, and recovering value from securely decommissioned equipment through reuse, repair, and recycling. In working to maximize resource value for as long as possible, we reduce waste generation from our global operations, decrease the use of raw materials, and reduce carbon emissions across our supply chain.

In 2024, AWS enhanced its circular economy strategy, which focuses on three core pillars:

- **Design better:** AWS unlocks its greatest potential for circularity through better design practices—including avoiding excess materials, enabling repair and reuse, and integrating recycled content from the start. In addition to using 30% recycled or bio-based plastics in server rack components, AWS is also exploring

ways that better design can help extend the lifespan of hardware and equipment, further scale repair and reuse, and increase materials recovery at end of use.

- **Operate longer:** AWS seeks to use equipment for as long as operationally efficient. AWS prioritizes keeping functional drives in use for as long as possible, avoiding early retirement of healthy and working hard drives. This helps AWS power fewer racks with optimized performance, replace aging hardware, and save water and energy. As a result, AWS only needs to send broken drives for recycling, avoiding early retirement of healthy and working hard drives on the same rack. Since 2023, AWS has avoided the purchase of more than 500,000 new hard drives, reducing the associated carbon footprint, costs, and waste.
- **Recover more:** AWS aims to continually improve repair, reuse, and recycling practices to recover more value from decommissioned assets. AWS uses [Amazon's re:Cycle Reverse Logistics hubs](#) to assess, repair, and recirculate used equipment into inventory or sell it to third parties for reuse. To drive circularity and increase landfill diversion, AWS sends racks to these hubs for secure decommissioning of hardware in the racks before recirculation into AWS inventory, resale into the secondary market, or recycling. In 2024, 11.5 million components were sold on the secondary market through our re:Cycle Reverse Logistics hubs. Additionally, these reverse logistics hubs have enabled AWS to source 16% of spare parts from its own reuse inventory, abating 110,000 tons of carbon emissions by avoiding purchase of new parts. In October 2024, Amazon announced an expansion of the [re:Cycle Ireland Hub](#) to continue scaling this program. In 2024, the facility also earned UL Solutions' highest Zero Waste certification (Platinum level) by diverting 100% of processed equipment from landfills, including 99% through reuse by AWS, resale into the secondary market, or recycling, and 1% to Thermal Processing with Energy Recovery.



Amazon's re:Cycle Reverse Logistics hubs breathe new life into AWS hardware, diverting used electronics from landfills through reuse and recycling.

Water

Water is an essential resource for AWS. We primarily use it to cool our global data centers, which give customers continuous access to our technologies. Climate change, population growth, and economic development are increasing global water demand and affecting water availability in many regions of our operations. As a result, responsible and efficient water management is an important part of Amazon’s overall sustainability strategy. Amazon has public commitments to return more water to communities than we use in AWS direct operations globally by 2030. To meet these commitments and support a more resilient and water-secure future, we are working to reduce our global water footprint and prioritizing action to address water scarcity, access, and quality in the most high-risk regions of our operations.

Water Positive in Data Centers

In 2022, AWS announced its commitment to being water positive by 2030.⁸ To meet this goal, AWS is focused on improving liters per kilowatt-hour (L/kWh) water use effectiveness (WUE) using more sustainable sources, and delivering water replenishment. In 2024, AWS was 53% of the way toward meeting its water positive by 2030 goal, up from 41% in 2023. Progress is calculated using AWS’s [Water Positive Methodology](#) ↴.

Reduce

Amazon is continually working to optimize water consumption and reduce the amount of incoming water we use. Within our direct operations, reduction efforts focus on increasing operational efficiency and resilience to limit water loss and enhance water conservation. We

improve water use efficiency across Amazon operations by scaling real-time leak detection, innovative treatment technologies, and water-conserving fixtures.

AWS Data Centers

Amazon seeks to minimize water use across our global data centers. Within AWS, global teams deploy water monitoring technology in data centers to determine where they need to take action to maintain or improve WUE.

In 2024, AWS began implementing [integrated liquid cooling components](#) ↗ to more efficiently manage artificial intelligence (AI) workloads at new data centers. These novel solutions combine air and liquid cooling capabilities for both powerful AI chipsets and AWS’s network switches and storage servers. This flexible design is expected to reduce mechanical energy consumption by up to 46% compared to previous designs during peak cooling conditions. The system also helps enable our direct evaporative cooling systems to meet generative AI demands without increasing water use per kWh.

In 2024, AWS reduced cooling water needs by 946 million liters in North America. Partially enabled through improved server chip technology that can operate at higher temperatures, AWS also uses cloud technologies to monitor real-time water usage and automatically flag leaks for operators to resolve.

AWS Water Use Effectiveness

	2021	2022	2023	2024	% Change from 2023
Water use effectiveness (L/kWh)	0.25	0.19	0.18	0.15	17%

The implementation of these new technologies contributed to AWS’s global data center WUE of 0.15 liters of water per kilowatt-hour (L/kWh) in 2024—a 17% improvement from 2023 and a 40% improvement since 2021.

Reuse

In 2024, AWS had 24 data centers using recycled water for cooling and is working to quadruple the number of data centers using recycled water by 2030. AWS has agreements with seven utilities, enabling 4.4 billion liters of fresh water to be preserved for community use. As of the end of 2024, five data centers have operational rainwater capture systems in place, which reduces our demand on community water resources and reduces the adverse effects of stormwater runoff, which is a leading source of water pollution globally.

Replenish

AWS invests in water replenishment projects in the communities where we operate. These projects improve community water access, availability, and quality by restoring watersheds and bringing clean water, sanitation, and hygiene services to water-stressed communities. By the end of 2024, Amazon had announced 23 water replenishment projects globally. These projects are expected to return more than 7 billion liters annually to communities once completed. In 2024, these projects returned 4.3 billion liters of water to communities.

We [expanded water replenishment activities](#) ↗ to Chile and China in 2024, and funded additional projects in the U.S. and Brazil. These projects included leveraging AI to promote water savings through more responsible irrigation practices, treating and filtering water through the creation and restoration of wetlands, repairing ecosystems, and improving flood management.



AWS partnered with local farmers and Kilimo, a ClimateTech company, to combat water scarcity in Chile’s Maipo Basin.



Biodiversity

Biodiversity, which is defined as the variety of living species on Earth and the habitats, ecosystems, and natural processes that support them, is declining globally due to land use change, direct exploitation, climate change, pollution, and the proliferation of invasive species. Since 1970, global wildlife populations have dropped by an average of 73%, signaling severe stress on the natural systems that support life.⁹ Amazon recognizes the critical importance of biodiversity to the health of the planet, communities, and our business.

Amazon’s approach to biodiversity follows a mitigation hierarchy that prioritizes avoidance and reduction above other actions.

To address potential natural habitat changes associated with buildings in our retail operations and data centers, we are establishing metrics, guidance, and tools that support best practices for preventing habitat loss and creating on-site enhancements. At 24 building sites across Europe, North America, and India, we are evaluating habitat conditions and developing site designs that help avoid and reduce loss of habitat, such as retaining and adding native plant varieties and reducing impermeable surfaces. We are also piloting artificial intelligence and machine learning tools that can more rapidly appraise on-site biodiversity values, to scale these processes across more buildings. These tools will support our work to avoid biodiversity loss and inform mitigation actions, where needed.



Our HQ2 in Arlington, VA, features a public park that is home to understory plants and trees, along with native and native-adaptive species.

Human Rights

Amazon’s operations impact millions of people worldwide, including employees, suppliers and their workers, customers, and communities. With this reach, we can play a critical role in respecting and promoting human rights.

We believe every individual deserves to have their fundamental dignity respected. To achieve this, we embed respect for human rights throughout our business activities, and we work to engage with partners and suppliers that align with our values.

Amazon is committed to respecting internationally recognized human rights as defined by international standards and frameworks developed by the United Nations (UN) and the International Labour Organization (ILO), including the [UN Universal Declaration of Human Rights](#); the [Core Conventions of the ILO](#); and the [ILO Declaration on Fundamental Principles and Rights at Work](#).

Assessing, Prioritizing, and Addressing Risk

We continue to refine our approach to assess, prioritize, and address human rights risks across our business activities. Our teams work to understand risks, strengthen prevention strategies, and integrate human rights and environmental considerations into everyday business decisions.

In 2020, Amazon conducted an enterprise-wide human rights saliency assessment to identify [salient human rights risks](#) under international standards.¹⁰ Since then, we have complemented this work by conducting several business-specific due diligence assessments between 2020 and 2024.

In 2024, we expanded our human rights and environmental due diligence (HREDD) work to encompass a broader range of key businesses and enterprise segments, including 10 business units such as AWS, Operations, Stores, Grocery, and Corporate Real Estate. Our methodology is grounded in international standards and combines country, sector, and product data with internal insights from worker feedback, among other sources.

The results of these HREDD assessments strengthen our understanding of systemic and business-specific risks and inform action plans to mitigate future risks.

Improving Access to Effective Grievance Mechanisms and Remediation

We empower and encourage our employees to share their concerns and communicate candidly with us through employee engagement and communications channels. These include grievance mechanisms and avenues for effective two-way dialogue with leadership through platforms like MyVoice, Connections, and the Amazon Ethics Line. These various channels and processes enable us to review and address suggestions, concerns, and grievances.

Responsible Supply Chain

With suppliers around the world, we embrace our ability to support safe and healthy working conditions throughout our supply chain. Our dedicated supply chain engagement teams are focused on building long-term relationships and fostering ongoing improvement. We engage directly with suppliers that support safe working conditions, fair pay, and environmental protection in their own businesses. We also collaborate with industry peers that maintain high standards and drive progress through new initiatives.

Amazon’s [Supply Chain Standards](#), available in 23 languages and dialects, detail our expectations for all suppliers of goods and services for Amazon, including service providers, vendors, selling partners, contractors, and subcontractors.¹¹ At Amazon, we are committed to providing products and services that are produced or supplied in a way that respects human rights and the environment and protects the fundamental dignity of workers. Suppliers are required to conform to our Standards, even when our Standards exceed the requirements of applicable law.



We collaborate with PATH Wellness4All on programs offering hands-on and e-learning tools to help improve workplace health and safety.



Employee Experience

We strive to be Earth’s best employer, offering more than just competitive wages and inclusive benefits. We also want our employees to develop their careers with us, and we offer upskilling opportunities that support individual goals. We listen to employees through a variety of feedback channels, using the insights to improve the employee experience and empower them to deliver for customers.

Upskilling Our Employees

We’re building a strong pipeline of talent to fill current and future in-demand jobs at Amazon by continuously working to enhance our AWS upskilling programs.

AWS Grow Our Own Talent

AWS Grow Our Own Talent helps individuals with nontraditional experience and backgrounds develop skills needed for AWS data center roles through on-the-job training and placement opportunities. In 2024, we had 700 U.S. participants and 1,000 global participants, bringing the total number of global participants to 3,100 since 2019.

AWS Intelligence Initiative

The AWS Intelligence Initiative is a 12- to 14-month rotational onboarding and technical upskilling program for engineers supporting Amazon Dedicated Cloud (ADC) regions. In 2024, there were 100 program participants in the U.S. and 200 outside the U.S.

AWS Training and Certification

AWS Training and Certification (T&C) programs help people develop cloud skills and prepare for certification exams. In 2024, T&C had 36,300 U.S. participants and over 74,200 global participants.



AWS upskilling programs help employees gain in-demand skills, propelling them into new careers.

Community Impact

At AWS, we aim to make our customers’ lives better and easier every day and to have a positive impact on our local communities all around the world, using our scale and abilities to take on some of society’s most pressing challenges. We work side by side with local community partners and nonprofits to create and drive programs that help advance access to affordable housing, alleviate hunger, strengthen education, and build skills for the future, enabling access to health resources, and we mobilize our infrastructure and technology to support communities impacted by natural disasters. We’re also focused on providing employees with volunteering opportunities so they can give back directly to communities where they work and live.

Health Resources

In July 2024, AWS concluded the AWS [Health Equity Initiative](#) (HEI) ↗, a \$60 million commitment of cloud technology to address disparities in global health. Over three years, HEI supported 403 organizations across 39 countries, reaching every continent except Antarctica, reflecting the growing span of health customers and their focus on utilizing technology to address access to health care.

AWS also looks toward cutting-edge technology to help accelerate the pace of change. In 2024, AWS committed \$10 million to support the establishment of the [Cancer AI Alliance](#) ↗, an initiative exploring ways responsible artificial intelligence (AI) can transform cancer research

and care. AWS is partnering with GE HealthCare to use AWS machine learning (ML) and generative AI technologies to support health care providers to improve existing protocols and invent entirely new approaches to delivering better patient care.

Access to Education and Skills-Building

We develop and advance programs that empower learners of all ages and skill levels with digital education and technical skills to prepare more people for jobs of the future. This includes:

- Our childhood-to-career computer science program, [Amazon Future Engineer](#) ↗, which reached more than 7.8 million students in 2024 across grade levels, up from 3.9 million in 2023.
- [AWS Machine Learning University educator enablement program](#) ↗, which trains employees on the theory and practical application of ML and AI.
- [AWS InCommunities](#) ↗, Amazon’s community efforts in data center locations, focuses on STEM education, local skills development, sustainability, and hyper-local social impact. In 2024, AWS launched 11 InCommunities funds and allocated nearly \$2 million globally in hyper-local funding. This includes AWS Think Big Spaces, which provide interactive STEM education in tech-related fields such as robotics, coding, and AI. We reached 82,000 K-12 students and educators through 93 of these spaces in 2024.

We also continue to support a number of public commitments to progress this work. As of the end of 2024, we delivered free cloud computing skills training to 31 million learners—surpassing our goal to help 29 million people by 2025. Similarly, through our free AI skills training initiative, [AI Ready](#) ↗, we reached our

target of training 2 million learners globally with free AI skills, achieving both milestones ahead of our 2025 commitment. AWS offers more than 135 free and low-cost courses and learning resources on AI, ML, and generative AI. We also support organizations that build digital learning solutions for underserved learners. For example, in 2024, AWS launched the [AWS Education Equity Initiative](#) ↗, a \$100 million commitment of cloud and AI technology to support innovative learning solutions such as coding curriculums, AI assistants, and more.

For those just starting their careers or looking to break into a new field, the [AWS AI and ML Scholarship program](#) ↗, in collaboration with Udacity, awarded 2,500 scholarships in 2024 to support students globally to learn foundational skills to prepare for careers in technology. The [AWS Skills to Jobs Tech Alliance](#) ↗, an educational and skills training program, has now connected 37,000 learners to employers.

AI for Social Good

Amazon is committed to unlocking the potential of AI for social good. AWS’s [AI for Changemakers](#) (AI4C) ↗ program provides nonprofits and social enterprises with cloud credits, technical training, and mentorship to build and scale AI-based solutions that address global challenges. As part of AI4C, AWS launched the Now Go Build CTO Fellowship, a mentorship program for senior technical leaders. AWS also supports the United Nations-led digital platform, [AI for Good](#) ↗, investing over \$800,000 with 10 organizations and projects to identify practical AI solutions that advance the UN Sustainable Development Goals.

In 2024, 71,900 adults enhanced their cloud skills through self-paced digital training on [AWS Skill Builder](#) ↗, and our three global [AWS Skills Centers](#) ↗ equipped learners with hands-on trainings and future skills. [AWS re/Start](#) ↗ also provided long-form 12-week training sessions to 16,000 unemployed or underemployed individuals who were looking to launch new careers in cloud technology.

[AWS Academy](#) ↗ cloud computing curriculum prepared around 984,000 higher education learners in 2024 with the skills and industry-recognized certifications to land in-demand cloud jobs. [AWS Educate](#) ↗ also offered self-paced digital training resources and labs globally.

Supporting Disaster Relief and Response Efforts

In 2024, Amazon provided support during 39 disasters across 19 countries—including the devastating hurricanes in the Southeast U.S. and flooding across central Europe and Southern Spain. Amazon donated \$10 million to support the Southern California wildfires in January 2025, including donating 550,000 items from its Wildfire Disaster Relief Hub, as well as providing AWS cloud technology, including drone support, to help emergency responders quickly assess and react to the wildfires’ conditions. We also deployed our AWS cloud technology to help local governments and organizations stay connected, providing nearly \$2 million in AWS credits to 41 customers affected by eight natural disasters.



Nonprofit Jacaranda Health, an AWS Health Equity Initiative customer, helps mothers and newborns in sub-Saharan Africa get the care they need.



Endnotes

1.

Supply chains focus on sourcing materials and delivering goods to customers. Value chains include upstream supply chain as well as downstream delivery to customers, customer use of products, and end-of-life of products.
2.

As detailed in our [Renewable Energy Methodology](#) ↴, to calculate the percentage of renewable energy matched by the electricity consumed by our global operations, we evaluate both the amount of renewable energy from Amazon’s projects and the renewable energy in the grid. This total renewable energy is then compared to Amazon’s total energy use.
3.

PUE measures the energy consumed by a data center to power computing equipment, cooling, and other data center infrastructure to support operations.
4.

International Data Corporation, [2H24 Datacenter Trends: Sustainable Datacenter Builds and CO₂ Emissions. Doc # US51911924, January 2025](#) ↗. A 1.0 PUE is a theoretical number, implying that all the energy consumed by a data center is being used to power computing equipment and that none is wasted on cooling or other infrastructure. Learn more in our [Power Usage Effectiveness \(PUE\) Methodology](#) ↴.
5.

The embodied carbon calculation uses the Carbon Leadership Forum’s (CLF) 2021 baseline. CLF baselines represent an estimate of industry-average GHG emissions for construction materials manufactured in North America.
6.

[World Steel in Figures](#) ↗.
7.

Natural pozzolans are cement clinker substitutes that enable cement to be produced at a lower temperature, creating fewer emissions.
8.

Being water positive means AWS will return more water to communities and the environment than its direct operations use. AWS measures progress annually against this goal by adding together reused water and water from replenishment projects and dividing that number by total water withdrawal minus water from sustainable sources. As we improve water efficiency, we also reduce how much incoming water we use.
9.

[WWF Living Planet Report](#) ↗.
10.

The concept of salience uses the lens of risk to people, not to the business, as the starting point, while recognizing that where risks to people’s human rights are greatest, there is often strong convergence with risks to the business. [UN Guiding Principles Reporting Framework](#) ↗.
11.

We review our Supply Chain Standards at least every three years, working with external stakeholders to align our requirements with current best practices and regulatory standards. Please refer to our most recent update as mentioned in our [2022 Sustainability Report](#) ↴.

On the cover

Image 1: AWS partnered with local farmers and Kilimo, a ClimateTech company, to combat water scarcity in Chile’s Maipo Basin.

Image 2: AWS’s new Graviton4 and Tranium2 chips deliver better performance with enhanced energy efficiency compared to prior generations.

Image 3: Amazon’s re:Cycle Reverse Logistics hubs breathe new life into AWS hardware, diverting used electronics from landfills through reuse and recycling.

