

The 2025 Valuing Water Finance Initiative Benchmark

High-Tech Industry

Background

The following section presents a review of the tech industry-specific highlights and areas for improvement compared to the [2023 baseline benchmark](#) to assess corporate water stewardship practices against the 2030 ambition of the six [Corporate Expectations for Valuing Water](#). Examples of leading company practices are provided throughout and should be used alongside the [2025 Key Findings](#) report to strengthen corporate water stewardship strategies. By assessing both strengths and gaps in industry wide water stewardship, companies can identify the steps necessary to address a range of water issues. The refined [2025 methodology](#) along with the [downloadable spreadsheet](#) containing company-specific data offers valuable tools for deeper analysis into individual company performance and the identification of areas requiring further action.

Evolving Water Risks in the Tech Industry: A Value Chain Imperative

Water has long been essential to the tech industry, whose value chain spans raw material extraction, semiconductor manufacturing, product assembly, retail, and consumer use. However, rising demands for cloud computing, artificial intelligence, and big data analytics are intensifying water-related risks across the value chain. In particular, the rapid global expansion of data centers and semiconductor manufacturing has significant implications for water consumption, as these operations rely on substantial amounts of water for cooling, processing, and maintaining efficiency. To meet cooling demands, one single large data center can consume up to [5 million gallons](#) of water daily, or as much water as a town of 50,000 people uses. This growth is also often concentrated in regions already experiencing water stress. Since 2022, two-thirds of [newly built data centers](#) have been located in areas with high levels of water stress.

Growing semiconductor production is also a concern when it comes to water risks in the tech industry value chain. Tech companies depend on semiconductors to power electronic devices and advance AI technologies. The surge in chip manufacturing alone has resulted in the semiconductor industry using, on average, [five times more water](#) for chip production than 10 years ago, which is [projected to double](#) by 2035. Additional attention should be given to this risk as [40% of chip production facilities](#) are likely to be in high or extremely high water-risk areas by 2030. In addition,

the wastewater generated contains pollutants of concern, such as heavy metals and per- and polyfluoroalkyl substances (PFAS). In the United States alone, testing data from one semiconductor facility showed PFAS concentration as high as [78,000 parts per trillion \(ppt\)](#) in wastewater, vastly exceeding the EPA's legal limit of 4 ppt for several common PFAS compounds.

At the upstream end of the value chain, the extraction of critical raw materials essential to the tech industry such as copper, lithium, or nickel is frequently associated with ecosystem degradation and water pollution risks. For example, the collapse of a copper mine in Zambia in 2025 resulted in the release of approximately [50 million liters](#) of acidic waste into the Kafue River, severely damaging the aquatic ecosystem and threatening access to clean water for millions. Globally, an [estimated 16%](#) of the world's land-based critical mineral mines are located in regions experiencing high to extremely high levels of water stress.

These upstream risks have implications for industries downstream such as data centers and related tech operations, including heightened vulnerability to water scarcity, evolving regulatory requirements, and reputational risks stemming from community opposition, particularly in water stressed basins. Scaling up water management efforts in water-intensive areas of the value chain is critical to reducing risk. Ceres' [Drained by Data: The Cumulative Impact of Data Centers on Regional Water Stress](#) provides an illustrative case study, highlighting the cumulative impact of data center water demand in the Phoenix, Arizona region, a rapidly growing data center market in U.S. where four of the five focus list companies have known data center locations.

Benchmark Progress Update

The following sections highlight the progress tech companies have made on water stewardship, as well as the persistent gaps that remain. A notable trend is the increase in corporate disclosures around water stewardship. More companies are now publicly stating their water stewardship commitments and reporting on targets, initiatives, and progress since 2023. This reflects a positive shift towards transparency and an increasing acknowledgment of water risks, impacts, and dependencies. However, disclosure alone, while foundational, is not sufficient to elevate companies to a higher ambition of water stewardship performance. Corporate water stewardship leadership requires evidence of concrete action across the six Corporate Expectations for Valuing Water.

Notable Highlights

Several key highlights stand out, reflecting both continued trends and notable advancements since the [2023 benchmark](#), particularly in areas such as board oversight of water risks and proactive advocacy on water issues.

- **Continued target setting to address impacts on water availability within operations** All tech companies have now established contextual water quantity targets primarily focused on their operations (compared to 4 out of 5 companies in 2023). Notably, **Amazon**, **Apple**, **Microsoft**, and **Google** (an **Alphabet** subsidiary) have set water replenishment or water-positive goals to mitigate their operational water impacts.

- **Signals of increasing awareness around supply chain water risks** Some companies are starting to address supply chain water risks. In 2023, only **Sony** had encouraged its suppliers to set water-related targets. Since then, **Apple** emerged as the only company to have a specific supplier target, through its Supplier Clean Water Program, to achieve an average 50% water reuse rate among suppliers by 2030. The company also disclosed that 99% of its total water footprint originates in its supply chain, underscoring the materiality of upstream impacts. **Microsoft** now reports that a large portion of its water footprint lies in the supply chain, and that it is working on improving its understanding of the scope and scale of its water-related risks in the supply chain.
- **Improved board oversight and risk integration** All companies show progress in strengthening board level oversight of water risks and opportunities, as well as integrating them into strategy and business planning. Notably, all companies embed water risk considerations into investment decisions, for example, through the implementation of water saving technologies either at their own data centers or semiconductor manufacturing facilities.
- **Growing advocacy on water issues** Companies are demonstrating increased engagement in advocacy on water issues, particularly in water-stressed regions. For instance, **Microsoft** supports a first-of-its-kind water sharing agreement in New Mexico in partnership with The Nature Conservancy, the Jicarilla Apache Nation, and the New Mexico Interstate Stream Commission. The agreement leases up to 20,000 acre-feet of water annually to enhance water security and support endangered fish populations, illustrating a growing willingness among tech companies to engage in collaborative place-based water solutions.

Areas for Improvement

As in 2023, the integration of water-related strategies within supply chains remains limited, as does recognition of water quality impacts. Key gaps persist across the board, particularly in setting targets to protect freshwater ecosystems and collaborating with suppliers to support access to water, sanitation, and hygiene (WASH).

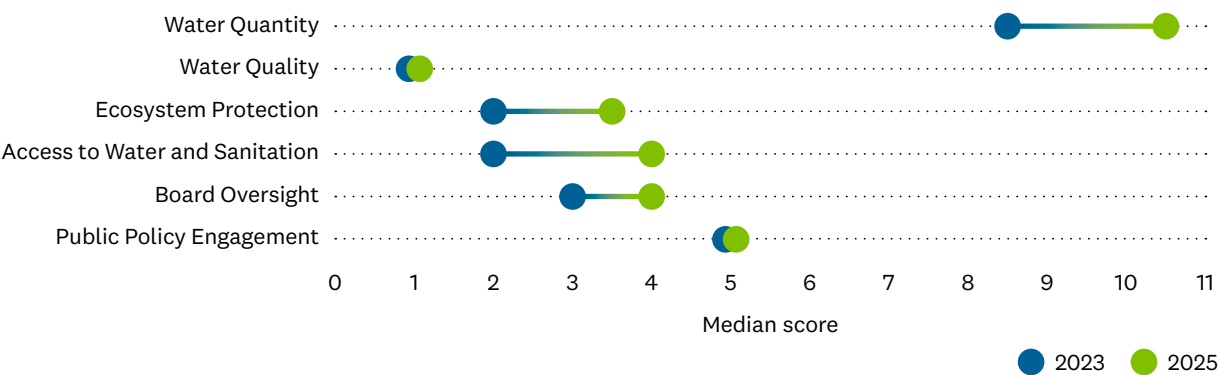
- **Continued lack of progress on addressing water quality impacts** Water Quality continues to be the lowest performing Expectation, with minimal progress since 2023. Only **Sony** disclosed a commitment to reduce its pollutant concentrations at its direct operations and none of the companies analyzed address water quality issues in their supply chains through target setting, highlighting an ongoing need for stronger focus and action on water quality management.
- **Limited focus on freshwater ecosystem protection through capital expenditure and sourcing decisions** While all the tech companies have sourcing commitments, supplier engagement efforts, and sourcing policies in place to minimize impacts to ecosystems, their disclosures lack information on how these efforts benefit freshwater ecosystem outcomes. In particular, there is a disconnect between company sourcing practices that address or minimize impacts to freshwater ecosystems. No tech company has yet established a time-bound target for the responsible sourcing of their key raw materials that also discloses the freshwater related benefits (such as responsible mining practices to ensure reduced water footprint or protection of nearby freshwater ecosystems).

- **While some action on WASH continues to be taken, companies are still lagging on comprehensive WASH action across the value chain** Overall, the five tech companies show limited disclosure of efforts to address WASH across their value chain. While **Apple**, **Microsoft**, and **Amazon** report that they address WASH across their own operations, supply chains, and communities that surround their workplaces and where their workers live, their corporate disclosures lack detail on how they work with supplier partners to address gaps and strengthen access to WASH. Meanwhile, **Google** is the only company to conduct a risk assessment identifying WASH related risks and gaps affecting its employees, suppliers, and communities.

Detailed Industry Performance

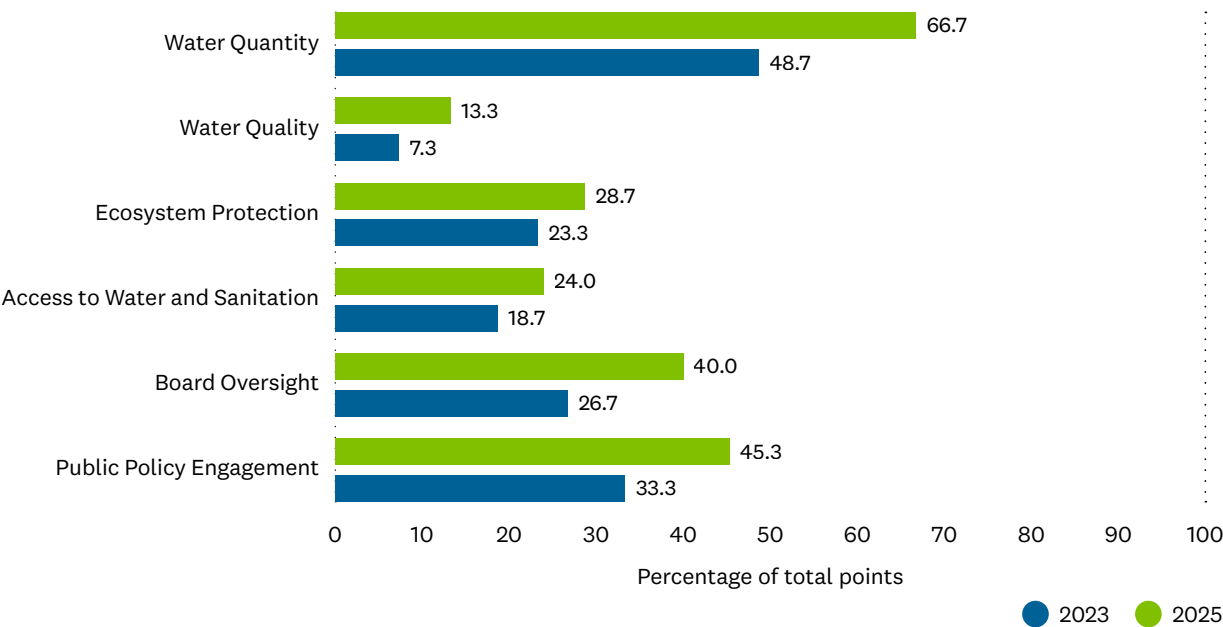
Tech companies demonstrated the strongest disclosure and performance in **Water Quantity** and **Public Policy Engagement** Expectations with median scores of 10.5 and 5 respectively (out of 15 total available points) (Figure 1). Companies performed lowest on the **Water Quality** Expectation, with a median score of 1.

Figure 1 • Tech Industry Performance (2023 vs. 2025) across the Corporate Expectations



Across the six Corporate Expectations for Valuing Water, from 2023 to 2025, notable improvements were observed in industry-wide performance across **Water Quantity** (▲ 18 percentage points), **Board Oversight** (▲ 13.3 percentage points), and **Public Policy Engagement** (▲ 12 percentage points) (Figure 2). In addition, **Water Quality**, while still lagging, saw a slight increase (▲ 6 percentage points) as did **Ecosystem Protection** (▲ 5.4 percentage points) and **Access to Water and Sanitation** (▲ 5.3 percentage points). (Note: The 2023 dataset includes a minor adjustment of 1 point post publication. All year-on-year comparisons in this report use the adjusted 2023 scores to ensure consistency.)

Figure 2 • Tech Industry Performance (2023 vs. 2025) across the Corporate Expectations

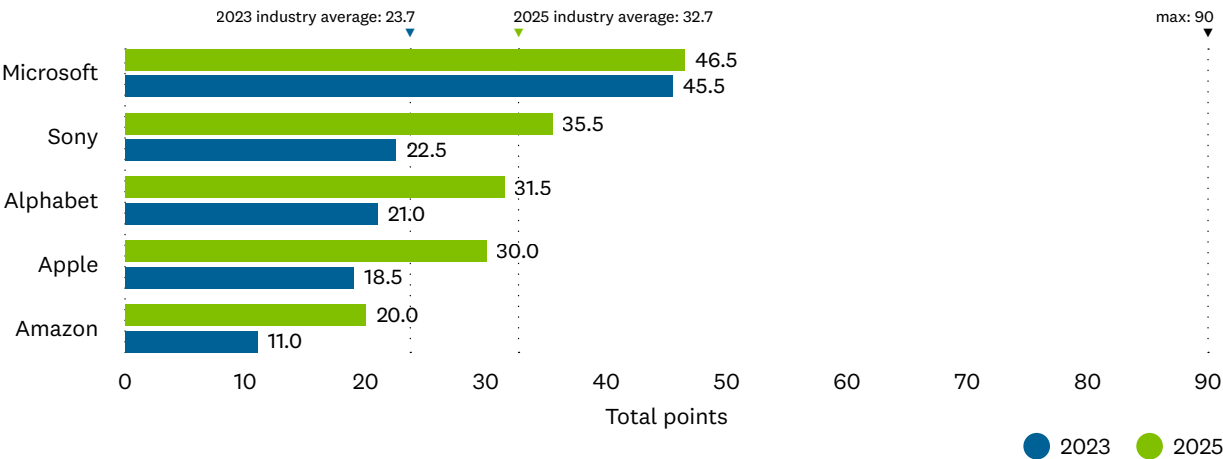


Detailed Company Performance

Microsoft continues to have the highest individual score, given its performance within the Ecosystem Protection, Access to Water and Sanitation, and Board Oversight Expectations. As in 2023, Amazon exhibits the lowest relative overall performance, with weak performance across Water Quality, Ecosystem Protection, Access to Water and Sanitation, and Board Oversight. Compared to 2023, Sony demonstrated the highest score increase, with improved performance in five out of six Expectations (Figure 3).

Of the five tech companies assessed, the average industry score is 32.7 out of 90 points, up from 23.7 in 2023.

Figure 3 • Breakdown of Company Performance (Total Points Scored) from 2023 to 2025



Water Quantity

Average company performance on the Water Quantity Expectation increased to 10 points in 2025 from 7.3 points in 2023 (out of 15 total available points).

All companies have contextual water quantity-related targets. Targets for four of the five companies remain focused on the companies' own operations. For example, **Microsoft** set a commitment to be water positive by 2030, which it aims to achieve through a 40% water use efficiency goal in its data centers and by replenishing more water than it consumes across its global operations in water-stressed regions. The company uses ongoing water risk assessments to prioritize around 40 basins for replenishment and conducts detailed local assessments to guide its project investments. **Google** continues to work towards its target to replenish 120% of the freshwater volume it consumes, on average, across offices and data centers by 2030. The company evaluates local water stress conditions and implements locally relevant measures and replenishment projects, recognizing the importance of addressing water challenges where they are most acute.



Apple is the only company taking action to address water quantity impacts in its supply chain through a specific water quantity commitment. In addition to its commitment to replenish all of its corporate freshwater withdrawals in high-stress locations by 2030 and certify all **Apple**-owned data centers with the Alliance for Water Stewardship Standard (AWS), it is also working towards driving supplier participation in its Supplier Clean Water Program, prioritizing those in high-stress locations. The company aims for suppliers to achieve an average 50% water reuse rate by 2030. This is a significant commitment, as the company identified that its manufacturing supply chain accounts for 99% of its water use. **Sony** requests that its suppliers of raw materials, component providers, and contract manufacturers set water consumption reduction targets and track progress. However, the specific targets are not publicly disclosed, and suppliers are not required to align with or contribute to the company's 5% water intensity reduction target within its operations.

Despite the current absence of supply chain water targets, it is encouraging to see growing corporate disclosure on supply chain water risk. Since the last benchmark, for instance, **Microsoft** acknowledged these risks in its 2024 Task Force on Climate-related Financial Disclosures (TCFD) report, stating: "We recognize that a large portion of **Microsoft's** water footprint lies in our supply chain, and we are working to improve our understanding of the scope and scale of water-related risks in our supply chain. One of the challenges we have faced in these initial analyses is securing local data at the basin level from indirect suppliers." This represents an important step forward in transparency and supply chain risk management to engage suppliers and implement measurable water reduction strategies.

Water Management Strategies in Data Centers and Semiconductor Manufacturing

Several focus list companies within the tech industry are employing strategies related to water use in their data centers. These include designing data centers with advanced cooling technologies like water-free or chip-level cooling to optimize operations, using alternative water sources including reclaimed water, on-site recycled water, and rainwater harvesting, establishing water use efficiency and water replenishment commitments, leveraging AI for smart water management, and partnering with other companies, utility providers, and local governments to address shared challenges in a basin.

The following examples illustrate how companies are deploying these strategies within their data centers. However, while these examples reflect meaningful progress, they represent just one aspect of water stewardship. Continued progress is needed across all six Corporate Expectations for Valuing Water and across company value chains — not just the operations.

Amazon uses outside air to cool its data center servers, avoiding energy-intensive compressor cooling systems. It employs water monitoring technology to identify where water use efficiency, a measure of how efficiently data centers are using water, can be improved. The company invests in on-site water treatment systems to reduce water consumption for cooling and to produce recycled water for use.

Apple is focused on improving the operational efficiency of its existing data centers through capital upgrades such as advanced water treatment technology and energy efficient servers. This includes piloting a resin-based water treatment system that reduces water loss by evaporation or leakage, reducing water addition needs by 30% and discharge by up to 60%. The company is currently working to implement this system in its Oregon and Arizona data centers. In addition, **Apple** aims to certify all its own data centers to the Alliance for Water Stewardship Standard by 2025. The company uses the AWS platform to assess water risks and opportunities across its value chain, both at the watershed and local facility levels. For example, at its Maiden data center in North Carolina, assessments revealed that local water stress was primarily due to water quality issues, leading the company to implement targeted nature-based solutions in response.

Google applies a water risk framework to evaluate local watershed health and water risks, conducting evaluations for new data center locations and reassessments for existing owned data centers every three to five years. These insights inform decisions on the cooling approach it adopts for each data center (air cooling technology vs. water) and the use of alternative water sources (reclaimed wastewater, industrial water, seawater).

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Microsoft is advancing water efficiency efforts across some of its data centers to reach its target of improving water use efficiency by 40% for all its own data centers. The company is employing strategies such as using direct air instead of water for cooling, harvesting rainwater for use, and procuring reclaimed water from utilities. It is also using real-time weather data to anticipate future water demand. For new construction, **Microsoft** integrates water budgeting and water reuse early in the design process, mapping all water uses and sources to support water reduction and reuse strategies. Additionally, the company is transitioning to chip-level cooling solutions to ensure that all AI operations consume zero water for cooling.

Similar to data centers, water saving strategies within **semiconductor manufacturing** include:

- **Closed-loop water systems** that continuously purify, treat, and recirculate water for reuse
- **Water reclamation and recycling** through processes such as chemical mechanical polishing waste liquid, backgrinding, or deploying local scrubber effluent systems to separate contaminants from reusable water
- **Rainwater and condensate collection** from air conditioning systems to capture available precipitation and reuse it for cooling
- **Leveraging data, analytics, and AI** to optimize wastewater treatment, predict equipment failure, and improve operational efficiency
- **Using sensor technologies** to provide for real-time data on water quality in wastewater systems

Disclosure of water saving efforts in semiconductor manufacturing among companies on the focus list, whether through their own operations or suppliers, remains limited. **Sony** reports that, despite its semiconductor manufacturing sites currently being in areas facing low water risk, it is promoting wastewater recycling to reduce water use in several locations. For instance, **Sony Semiconductor Manufacturing Corporation Nagasaki Technology Center** is prioritizing wastewater reuse and sewage treatment — currently reusing roughly 80% of its water discharges — leading the company to be less reliant on local groundwater extraction.

Water Quality

Companies' average performance increased to 2 points in 2025 from 1.1 points in 2023 (out of 15 total points).

Water Quality remains the lowest performing Expectation, with only two companies demonstrating progress since 2023. **Sony** has set company-wide quantitative and qualitative targets to protect water quality, including a quantitative goal to prohibit the use of high-risk “Class 1”

chemicals (based on its internal risk classification) in operations to prevent pollutant releases into water. This is part of its Green Management 2025 strategy, an interim environmental strategy under its long-term “Road to Zero” initiative, which aims for the company to have zero environmental footprint by 2050. To achieve this, **Sony** restricts or prohibits the use of high-risk chemicals within its manufacturing processes to prevent their release through wastewater discharges.

Since 2023, **Apple** has enhanced its public disclosures on wastewater discharge volumes and its approach to managing industry pollutants of concern such as PFAS, BFRs, and PVC. The company requires its suppliers to comply with all applicable wastewater regulations and adhere to its own standards where discharge is restricted. These include **Apple’s** Wastewater Discharge Quality Standards, which define pollutant thresholds to prevent harmful releases and its Regulated Substances Specification, which restricts or bans a wide range of substances in its products, packaging, and manufacturing processes. To further advance safer chemical use, **Apple** developed a Chemical Prioritization Protocol to identify and address pollutants of concern in the electronics supply chain and promote safer alternatives.

Ecosystem Protection

Companies’ average performance increased to 4.3 points in 2025 from 3.5 points in 2023 (out of 15 total points).

Targets

Companies show limited progress on this Expectation, with only two out of five companies improving their scores since 2023. As in 2023, **Microsoft** remains the only company with a time-bound target for ecosystem protection or restoration, aiming to protect more land than it uses by 2025. As of the assessment date, the company had exceeded this goal by over 40%, protecting 15,849 acres of land compared to its 11,000 acres target. As part of achieving this goal, the company supports projects that benefit freshwater ecosystems, including the Cyberjaya Lake Gardens ecological restoration (restoring 15 acres of the lake to enhance biodiversity and water quality) and the Jarama Riverbed Revitalization initiative (to restore five hectares near its San Sebastian de Los Reyes data center). In addition, under its broader water restoration commitment, **Microsoft** invested in 25 aquatic habitat restoration projects, such as wetland restoration in Mexico City contributing to freshwater ecosystem health.

Sustainable Sourcing Practices and Supplier Engagement

Despite the industry’s significant ecosystem impacts through the sourcing of key raw materials such as tin, tungsten, tantalum, and gold (3TG minerals), sustainable sourcing practices that have intended benefits for freshwater resources such as improved water availability and quality remain limited.

All tech companies have supplier codes of conduct to outline expectations around water management and ecosystem protection. Additionally, companies engage suppliers through partnerships, training, and adherence to standards such as the Responsible Minerals Assurance Process, with some elaborating on how these supplier engagement efforts address freshwater.

For instance, **Microsoft** supported one of its printed circuit board suppliers in China in 2023 with achieving the Alliance for Water Stewardship certification, addressing water concerns at the

local level. Additionally, the company's Supplier Social and Environmental Accountability Manual states its expectations that suppliers protect the environment, including through implementing water management programs and wastewater treatment systems. **Apple** engages suppliers through its Clean Water Program, which helps suppliers with water reuse and prevention of water pollution and provides opportunities for supplier training. Related to these efforts is the company's supplier engagement to ensure compliance with its Supplier Code of Conduct and Supplier Responsibility Standards. The company states in its 2025 Water Strategy that "implementing the Code and Standards drives water improvements and raises the minimum requirements for our large number of suppliers that also support others across the industry."

While companies also have commitments around sourcing conflict minerals, recycled materials, and plastics, corporate disclosures lack clarity on how these efforts contribute to beneficial freshwater or aquatic biodiversity outcomes.

Companies demonstrate an improved understanding of their nature-related impacts and risks.

For instance, **Sony** is using tools such as ENCORE, WWF Biodiversity Risk Filter, and the World Database on Protected Areas to gain a better understanding of its impacts on ecosystems and to influence its capital expenditures and sourcing decisions. The company also followed the TNFD LEAP approach to determine sensitive locations per the guidance, across all of its manufacturing sites, major contracted manufacturer sites, and 898 mines in its upstream supply chain. The sensitive locations include areas important for biodiversity, areas of high ecosystem integrity, and areas of importance for ecosystem services. Through this analysis, the company identified that 58% of production sites and 32% of mines (used for the extraction of mineral resources) are in areas important for biodiversity, and that 23% of production sites and 41% of mines are in areas of high physical water risk.

Microsoft conducts an ecological assessment before any new data center development to understand the local flora and fauna and guide strategies for enhancing biodiversity around its sites. These assessments also serve as a benchmark to measure ecosystem performance over time, enabling the company to track the impact of its efforts on local habitats such as native landscaping, sustainable water management, and soil remediation. To support this work, **Microsoft** uses the Premonition Device, a biological weather station that attracts, monitors, and samples invertebrate species to easily track ecosystem services and biodiversity. This tool helps the company track biodiversity and validate that its ecological interventions are delivering positive environmental outcomes.

Access to Water and Sanitation (WASH)

Average performance increased to 3.6 points, compared to 2.8 points in 2023 (out of 15 total points).

Companies continue to show limited progress on WASH efforts across their operations, supply chains, and communities. **Apple** has strengthened its disclosure by detailing how it ensures access to WASH within its own operations, primarily by certifying its data centers to the Alliance for Water Stewardship Standard and exceeding the requirements of the WASH4Work Pledge. The company also incorporates WASH criteria into its Supplier Code of Conduct and supports community access to clean water through its partnerships, such as with Frank Water, a social enterprise working on WASH issues in India. **Microsoft** and **Google** contribute to WASH outcomes through their broader water replenishment efforts in communities near their operations. As of the end of 2024, **Google** had supported 112 water replenishment projects, nine of which focused on WASH. **Microsoft's** projects in Karnataka, India, include projects that harvest and recharge groundwater through pond restorations and point injection wells. The company also partners with WaterAid to restore water points for communities and schools and improve local water storage facilities.



Integrating WASH considerations into water-related risk assessments can help companies better understand where WASH is most needed within direct operations, supply chain, and surrounding communities. **Google** is the only tech company that includes WASH specific considerations in its water risk assessments for all three stakeholders (employees, suppliers, and communities) using tools like the WRI Aqueduct Water Risk Atlas, WUCLA Aware, and the WWF Water Risk Filter, along with qualitative inputs from the World Health Organization, United Nations Children's Fund, WaterAid, and Water.org. The company also partners with the International Organization for Migration to examine how the company can better support and advance community well-being, by working with two strategic suppliers in Vietnam.

Board Oversight

Companies' average performance increased to 6 points in 2025 from 4 points in 2023 (out of 15 total points).

All companies improved their performance within the Board Oversight Expectation since 2023. **Amazon** and **Apple** improved their disclosure on how their corporate boards and senior management oversee material and salient water issues. In addition to **Sony**, **Amazon** and **Microsoft** now report having at least one board member with expertise in water management. **Google**, **Amazon** and **Sony** have more disclosure on how corporate boards and senior management integrate water risks and opportunities into decisions on strategy, risk, and revenue.

Some companies are beginning to integrate water risks and opportunities into business planning and decision-making. For example, **Google** now factors water risks into major business planning activities and investment decisions for its direct operations. Through its TNFD assessment, **Sony** has

identified water risks such as scarcity, salinization, and pollution that could pose potential operational disruptions, as well as opportunities for cost savings and product innovation through R&D.

Tech companies still lack integration of supply chain water risks and opportunities into business and financial planning. Disclosure on how water-related business opportunities are factored into long-term supply chain strategy and investment are largely missing across all tech company disclosures.

Public Policy Engagement

Average performance increased to 6.8 points from 5 points in 2023 (out of 15 available points).

Tech companies demonstrate this through advocating for strengthened water governance, water infrastructure improvements, and the development of industry resources to scale best practices.

Google is helping support improved water security in Mesa, Arizona, by working with the Salt River Project to reduce wildfire risk, which poses a threat to local water systems. The company partners with the Colorado Indian Tribes and N-Drip (a gravity-powered micro-irrigation solution) to support more water efficient agricultural practices and collaborates with the Quechan Tribe on farmland scale initiatives to save water in the Colorado River Basin. These efforts advance sustainable water use in regions facing long-term water scarcity. In Las Vegas, **Google** partners with WaterStart (a nonprofit facilitating deployment of innovative water technologies) and the Southern Nevada Water Authority to pilot LED UV technology to improve drinking water quality and groundwater resilience.

Microsoft has made water advocacy a core part of its external engagement. As a founding member of the Coalition for Water Recycling, led by the WaterReuse Association, the company helps drive policy and infrastructure adoption to expand water reuse across the U.S.

Microsoft's collaboration with FIDO Tech on leak detection spans cities such as London, Querétaro, and Phoenix and uses AI-powered acoustic analysis to identify leaks across 350 km of water networks. This work now supports a

broader effort, called Water United, that convenes public and private actors together in reducing water loss from leakage across the Colorado River Basin. The company is also an active member of Water Europe, a multi-stakeholder organization, contributing to advocacy and policy development in the EU.

Amazon is increasingly addressing efficiency and water access in regions important for its operations. In Chile's Maipo Basin, a critical water source for major cities, the company partners with



local farmers and climate-tech company Kilimo to reduce agricultural water use. The company also began working with SEARCH (a nonprofit working in rural India) in 2023 to improve water access for farmers in Hyderabad, India, where it has operations. Through the partnership, the company is building and rehabilitating water storage ponds to recharge groundwater and ensure more reliable water access for local farming communities.

Apple contributes to water governance through active participation in industry standard setting like the Alliance for Water Stewardship Standard (AWS) and thought leadership including WRI's Volumetric Water Benefits Accounting 2.0, and the Pacific Institute's Levelized Cost of Water methodology and application. It has co-developed papers with AWS, WWF, and others on water risks in the tech supply chain, namely data centers to shape guidance for quantifying water benefits and providing insight to tech industry-specific challenges.