Water Positive Methodology

Amazon Web Services (AWS)

This methodology governs the implementation of AWS's water positive goal. Learn more about water stewardship at AWS on our website.
Becoming Water Positive

As part of our commitment to operating in a more sustainable manner, AWS is committed to returning more water to communities and the environment than we use in our operations. This commitment applies to AWS leased, owned, and colocation data centers, as well as AWS offices. This methodology governs the implementation of our water positive goal. We will continue to update this methodology as the field evolves to align with the latest science and maximize positive impacts for communities and the environment.

Our Approach

AWS employs four strategies to meet our water positive goal:

1. **Sustainable sources**: We will use sustainable water sources such as recycled water wherever possible. Recycled water is treated sewage and can only be used for a limited set of purposes such as irrigation and industrial use. By using recycled water, we preserve drinking water for communities and the environment. Similarly, we count rainwater harvesting as a sustainable source, since using it on site minimizes our demands on community water resources and because it reduces potential negative impacts from stormwater runoff.

2. **Efficiency**: AWS is the public cloud leader in water use efficiency (WUE), and we are constantly working to minimize water use. We are using real-time water use data to identify leaks, piloting new treatment technologies, and exploring a range of operational changes to further improve efficiency.

3. **Water reuse**: We circulate water through our cooling systems as many times as possible, but eventually need to replace it with new water. The spent cooling water can continue to be used for other purposes such as irrigation.

4. **Replenishment**: We also meet our water positive pledge by supporting replenishment projects such as watershed restoration efforts that deliver water back to the communities where we operate.

Measuring Our Progress

We calculate progress toward our water positive goal as follows:

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\text{AWS Water Positive \%} = \frac{\text{Reused Water + Water from Replenishment}}{\text{Total Water Withdrawal} - \text{Water from Sustainable Sources}}
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Water efficiency improvements will be reflected in a declining volume of incoming water. If the percentage is under 100\%, that means we’re still working to meet the water positive goal. If it is over 100\%, that means we’re returning more water to the community than we’re using.

Program Design

**Reporting**: We will report two key water metrics. We released our global WUE metric for the first time in 2022 and will update it annually in 2023 and beyond. AWS measures WUE as the liters of water withdrawal per kilowatt hour of energy used in data centers. Second, we will update our global water stewardship map in 2023 and beyond with all of the projects contributing to water positive, including every replenishment project and data center initiative to use sustainable water sources or reuse cooling water.
Replenishment: Within our replenishment portfolio, we aim to address the greatest needs in a given watershed. In some cases, this involves increasing the total volume of water available through projects like groundwater recharge and in other cases it involves improving water quality or expanding water access. There is no one-size-fits-all solution. Our approach follows similar principles that guide The Climate Pledge; replenishment solutions must be additional, quantifiable, real, and socially beneficial.

We are focused on two types of replenishment projects:

- **Watershed restoration:** Supporting healthy watersheds that provide measurable improvements in the quantity or quality of water available for communities or the environment. Examples include groundwater recharge, wetland construction, and stormwater capture and treatment.

- **Water, Sanitation, and Hygiene (WASH):** Connecting people to clean water where they previously didn’t have consistent, equitable, or affordable access.

Global vs. regional: AWS will meet the water positive goal on a global scale while prioritizing projects in the most water-scarce basins in which AWS operates. AWS will be water positive in every water-scarce basin, but may not be water positive in water-abundant regions, choosing instead to shift projects to where they are most needed. Water-scarce regions are designated based on the Water Stress score in the World Resource Institute’s Aqueduct Water Risk Atlas, although we classify some additional regions as water-scarce based on our experience in the region.

Proximity to operations: AWS is working to support replenishment projects that are as close as practicable to where we use water. For watershed restoration projects, we return water to the same watershed from which we source supply for our data centers and offices. For WASH projects, we prioritize opportunities that drive positive impact within the municipalities where our facilities are located. If WASH needs are greater in outlying rural areas, we expand our boundaries to ensure we can provide the most meaningful impact to the community possible.

Replenishment duration: Water volumes from replenishment projects are counted toward the water positive goal for a set time period following initial project completion depending on the life of the project. AWS monitors and maintains projects to validate volumetric benefits as long as they are being counted toward the water positive goal. Benefit validation varies by project type. For watershed restoration projects, this may include using watershed monitoring to confirm actual benefits against the projections made from hydrological models. We will continue to fund new projects to maintain water positive status.

Assurance: Our water positive program has two levels of review and verification: project level audits and program level assurance. Third-party experts audit project benefits and performance at the start, following completion, and periodically during the life of the project. At the program level, AWS works with a trusted assurance expert each year to validate the claims we make about progress toward the water positive goal.

Minimum volume threshold: We’re focusing our water positive program on watersheds where we use more than 100,000 gallons of water per year, which is the equivalent of one household in the U.S. or two households in India. This will keep the focus on projects that provide a greater impact in regions that need it most.