Getting to Net Zero

A Forest Service Goal

What is Net Zero?

Net zero is a goal to balance what we take from the Earth with what is put back, either by natural systems or by human effort. In many cases that requires not taking as much, or using resources differently. Striving for and achieving net zero allows us to save money and resources in a meaningful way by reducing waste and using resources no faster than they can be replenished.

Why Try to Achieve Net Zero?

The Forest Service is a steward of many of our nation's most treasured landscapes. These landscapes hold resources people want and need such as clean air and water, forest products, and recreational opportunities. Moving the Forest Service towards net zero is a tool for protecting those landscapes and resources.

Our Net Zero Goals

A net zero ***energy facility*** works to conserve energy and produces as much energy on site through renewable resources as it consumes.

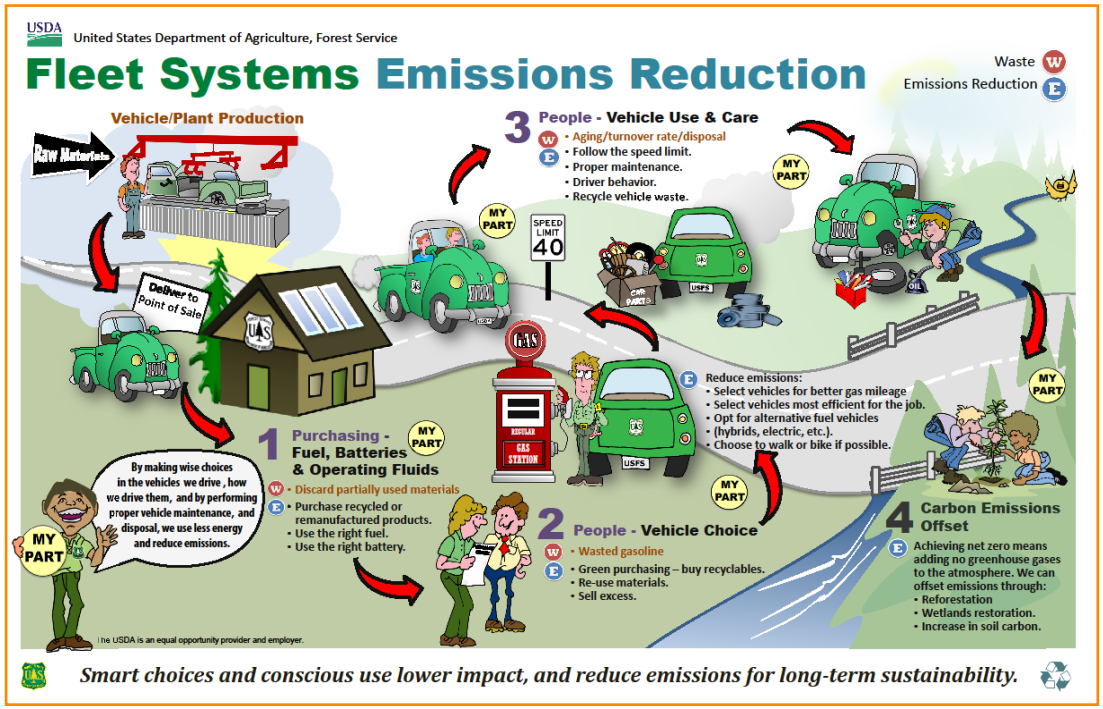
A net zero ***waste facility*** reduces and reuses waste and converts it to something valuable—like compost or energy—to a point where nothing goe to the landfill.

A net zero ***water facility*** limits the consumption of freshwater resources and returns water back to the same watershed, not depleting the groundwater and surface water resources of that region in quantity and quality over the course of a year.

A net zero ***fleet*** works to reduce CO2 emissions, uses renewable energy generated on site to charge fleet, and offsets any additional CO2 emissions through carbon offset projects. Waste from a net zero fleet is recycled and stays out of landfills.

Fleet

Driving vehicles in the Forest Service uses a lot of energy. This tips the balance away from net zero, but we can slow the pace of energy use by carpooling and selecting more efficient vehicles for work trips. True net zero fleet would mean no emissions from construction or use of the Forest Service fleet. Given the difficulty of achieving goal, we are committed to reducing fleet emissions and increasing fuel efficiency with a vision of someday being able to achieve net zero.



SPOTlight

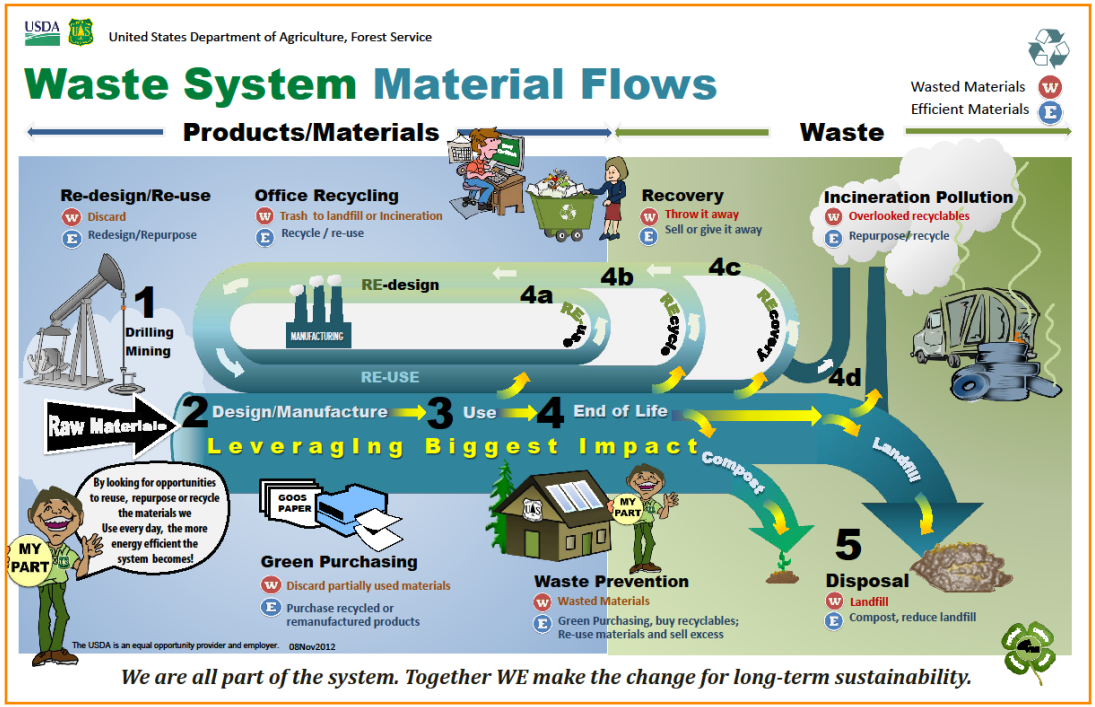
The ***Mendenhall Glacier Visitor Center,*** in Mendenhall Valley, Alaska, committed to completing energy, water, waste, and fleet audits in FY 2015. Their commitment stems from their goal to achieve net zero in Visitor Center operations.

Their vision is to have the Center run on on site-generated hydropower. This hydropower generator would also power a net zero electric fleet. The water used to generate this energy and support everyday water consumption would only utilize the water present on site. In addition, they will work towards zero waste by adopting recycling and composting programs.

Waste

In a successful net zero waste system, trash sent to the landfills is minimal; products are reused and recycled rather than thrown away. A successful system will also consider the total lifecycle of a product before and after its use, including associated manufacturing, distribution, and disposal costs. Therefore, aiming for zero waste also means looking for packing and shipping materials that can be reduced, reused, and recycled and encouraging manufacturers to take responsibility for the disposal of their products and packaging.

Beyond eliminating incineration pollution and landfills, a net zero waste system will ultimately result in less resource consumption per product, shift jobs from landfilling to recycling, and create engineering opportunities in the design and manufacturing of goods.



We are all part of the system. Together WE make the change for long-term sustainability.

SPOTlight

The ***Umpqua National Forest Supervisor's Office*** in Region 6 piloted the net zero Waste Guide. During their waste audit they realized they had more trash cans than employees! They repurposed extra trash cans into common area recycling stations for employees to sort recyclables from trash.

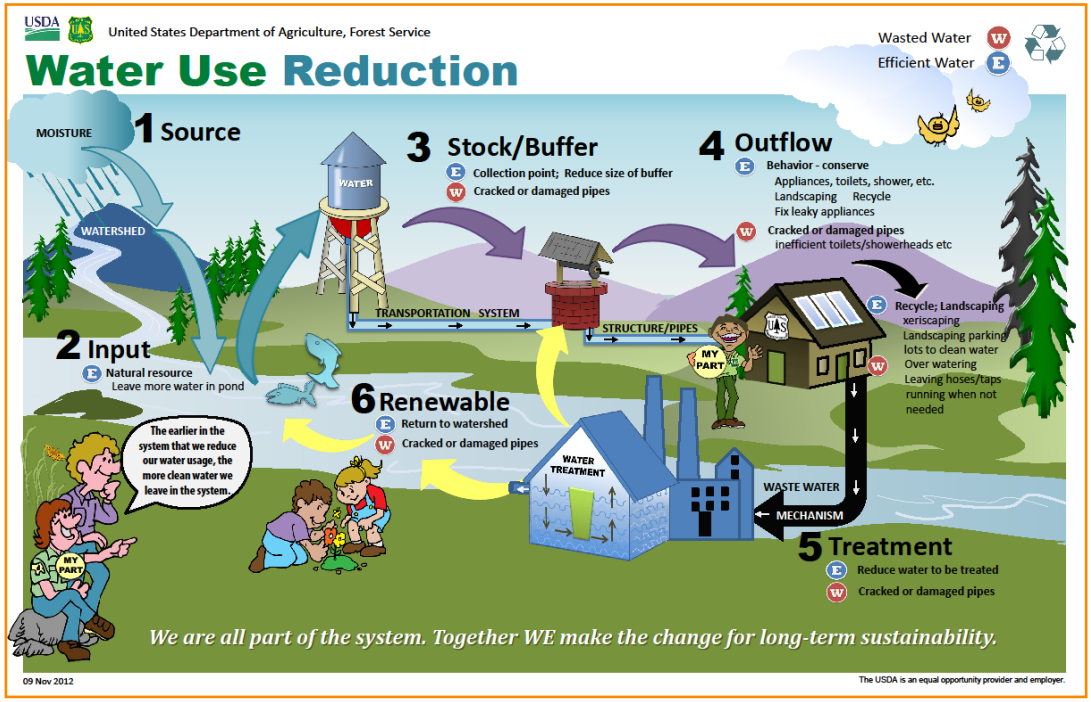
The Forest diverted 55 percent of its waste from the landfill using this system.

Water

Working towards net zero water use means staying within the carrying capacity of the natural water system. It means using water to meet human needs while protecting the natural environment so that these needs can be met not only in the present but also for future generations.

The two basic principles of net zero water are 1) water conservation, and 2) reducing contamination in wastewater.

Whether a water use plan focuses on conservation, contamination, or both depends on the ecosystem in which the facility is located. Areas that receive abundant rain or have access to plenty of surface water may not be concerned about water quantity use, but may focus more on wastewater and water contamination. Other areas with very little surface water may need to focus on water conservation.



SPOTlight

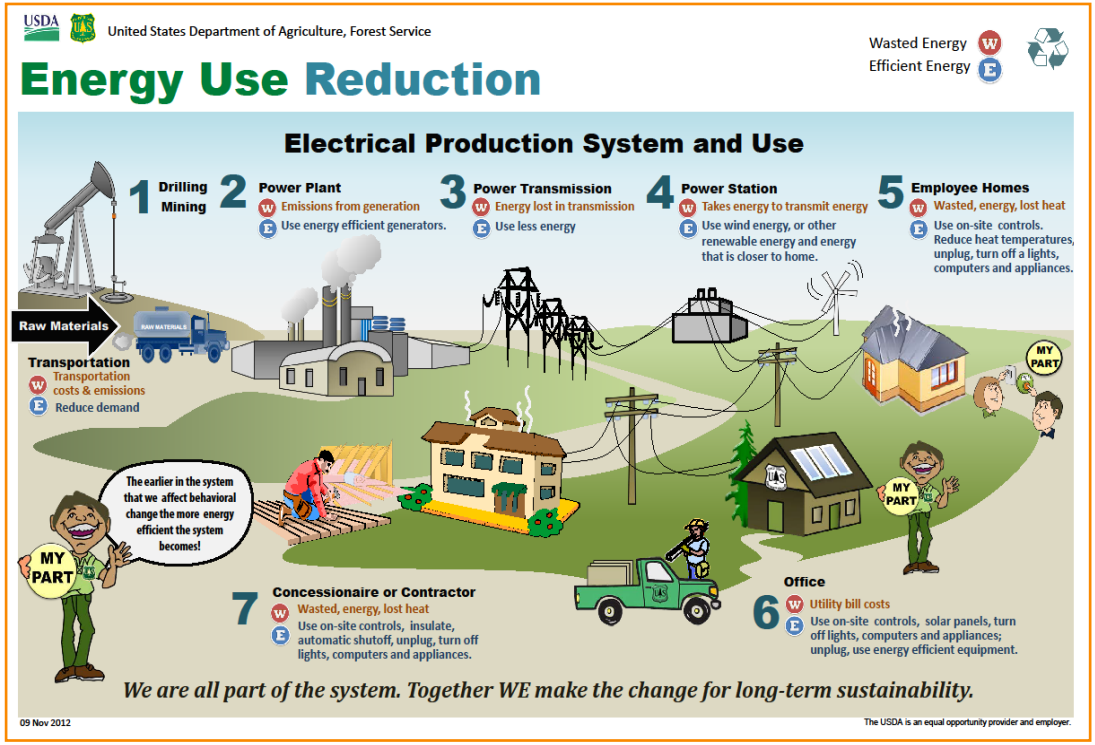
The ***Sierraville River RD***, Tahoe NF, Pacific Southwest Region is incrementally reducing water use starting with the easiest target: the lawn watering system. Determining that historic and culture based plants; legacy apple trees and decades-old flower beds needed to remain, these areas have been afforded new drip and mulching systems.

Consultation with local Master Gardeners of Sierra and Plumas counties, and the Forest Service Landscape Architect produced viable water saving plans.

The key to net zero water use is to be locally attuned and responsive to local conditions by not consuming more water than is sustainable within the local watershed, and to return clean wastewater to that same watershed.

Energy

Everything we do in the Forest Service requires us to take energy from the Earth, but we can choose to take it from more renewable sources, such as solar, wind, biomass, and water. Net zero energy is a concept of energy self-sufficiency based on minimized demand and use of local renewable energy resources. In principle, a net zero energy unit should reduce its load through conservation and energy efficiency, then meet the remaining load through on-site renewable energy.



SPOTlight

The Sierraville Ranger District on the Tahoe National Forest—a Net zero Fellow—piloted the net zero Energy Guide during FYs 2013 and 2014. They installed a solar furnace on their garage, insulated and winterized unused buildings, saving 49 percent in electricity and 38 percent in propane use.