

2022 Department of Energy Sustainability Plan

1. Department of Energy Sustainability Plan Summary

The Department of Energy (DOE or Department) delivers its thirteenth annual Sustainability Plan at a time when the impacts of climate change have never been more apparent. Heeding the call of the President’s Executive Order (E.O.) 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, DOE is committed to transitioning to carbon pollution-free energy sources, a zero-emissions fleet, and a net-zero building portfolio. The Department will meet these challenges while reducing pollution, procuring sustainably sourced supplies and equipment, educating its workforce on sustainability and climate change, and delivering equity and environmental justice in its work across the mission portfolio.

2. Priority Actions Towards Goals

A. 100 Percent Carbon Pollution-Free Electricity

DOE has developed a Carbon Pollution-Free Electricity (CFE) Roadmap establishing preliminary goals and objectives, calling for the development of aggressive program-specific implementation plans, and identifying short and long-term actions to demonstrate continuous progress. Final goals and objective will be approved by CEQ and OMB per E.O. 14057.

- Program leads will develop implementation plans consistent with the CFE Roadmap.
- Projected costs of CFE projects will be incorporated into budget requests.
- The Department’s Sustainability Steering Committee (SSC) will coordinate implementation of DOE’s CFE policy, identify and propose solutions to barriers, develop recommendations, and provide regular updates on CFE progress.
- To advance CFE procurement, DOE will develop sample CFE requirements and contract clauses for use in executing electricity procurement actions.

B. 100 Percent Zero-Emission Vehicle Fleet

To support the transition to a zero-emission vehicle (ZEV) fleet, DOE is ramping up its acquisition of electric vehicles and electric vehicle supply equipment (EVSE). DOE is also developing a policy to require investment in charging infrastructure as part of facility renovation.

- Installation of EVSE is tracked quarterly to ensure that DOE is adding EVSE to support the future electrified fleet. In 2022 DOE has committed to install 337 charging ports.
- DOE completed its 2022 ZEV Strategic Plan, which includes targets for ZEV acquisition and EVSE installation along with budget requirements that will push DOE to achieving the acquisition of 100 percent ZEVs for light-duty vehicles by 2027.

C. Net-Zero Emissions Buildings, Campuses, and Installations

As required by CEQ, DOE is developing a Buildings Strategic Plan that establishes a strategy to meet the E.O.’s goals of net-zero greenhouse gas (GHG) emissions by 2045 and reduce GHG emissions by 50 percent from its buildings, campuses, and installations by 2032 from 2008 levels.

i. Design and Construction for Net-Zero Emissions

- In April 2022, DOE directed its programs to “adopt all practical measures to incorporate clean energy sources and mitigate and adapt to climate change in the design of all capital asset construction, renovation, and modernization projects with a total project cost of \$50 million or more.” Among other requirements, programs should:

- Meet or exceed the latest ASHRAE Standard 90.1 to comply with 10 CFR 433.
- Design buildings to reduce scope 1 and 2 GHG emissions to achieve net-zero emissions by 2030 in construction greater than 25,000 gross square feet.
- DOE is incorporating these requirements into its Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.

ii. Increasing Energy Efficiency

- DOE will evaluate, benchmark, and prioritize opportunities for facility level energy efficiency across the complex. DOE will optimize use of its existing tools, like the Sustainability Dashboard, to track, report, and analyze data.
- DOE will continue to focus on infrastructure upgrades, building evaluations, and using emerging technologies to improve energy efficiency across the complex.
- DOE is updating its metering plan to reflect Federal guidance based on requirements in the Energy Act of 2020. The updated metering plan will promote DOE's efforts to meter and sub-meter utility use to monitor, benchmark, encourage fault detection capabilities, and identify opportunities to reduce facility energy consumption.
- Four DOE National Laboratories are participating in the Net Zero Labs (NZL) Pilot that is identifying models, approaches, and technologies that can translate to industry.

iii. Increasing Water Efficiency

- DOE will update its water balance assessments to identify high water-use processes and prioritize metering and conservation efforts.
- DOE will promote water conservation practices using alternative water, operational changes, retrofitting, leak detection, and system upgrades.
- In compliance with the Energy Act of 2020, DOE sites continue to evaluate facilities for water efficiency measures and to assess the performance of implemented measures.

D. Reducing Waste and Pollution

DOE is working to increase its diversion of non-hazardous municipal solid waste (MSW) and construction and demolition (C&D) waste by 50 percent by FY 2025 and 75 percent by FY 2030.

- DOE will continue to utilize material/item reuse, material substitution, recycling, composting, and waste-to-energy strategies to reduce MSW and C&D waste.
- DOE will ensure responsible recycling of batteries and renewable energy systems. DOE is supporting hardware research to reduce the end-of-life environmental impacts of photovoltaic (PV) materials and wind turbine blades and is working to reduce the cost of PV module recycling by more than half by 2030.
- DOE will engage its traditionally underrepresented stakeholder communities in waste- and pollution-related decisions and actions impacting them.

E. Sustainable Procurement

DOE will integrate preferential purchasing decisions for products and services that are sustainable and beneficial to DOE and its stakeholder communities.

- DOE will conduct a vulnerability assessment on its mission critical supplies to increase its supply chain resilience, transparency, sustainability, and security.
- DOE will review standard contract procurement clauses to identify opportunities to purchase and give priority to products and services that are energy efficient, water-efficient, biobased, environmentally preferable, non-ozone depleting, contain recycled content, or are non-toxic or less-toxic alternatives.

- DOE will address environmental justice concerns and will prioritize purchasing from U.S. based businesses, historically underutilized business zones, and enterprises that are disadvantaged businesses, minority-owned, women-owned, veteran-owned, and service-disabled veteran-owned per DOE Policy 547.1A.

F. Climate- and Sustainability-Focused Federal Workforce

DOE is providing resources, programming, and training to ensure that climate change and its effects are understood by DOE’s workforce. Additionally, DOE is ensuring principles of sustainability and climate change are addressed throughout DOE missions and operations.

- DOE partnered with the National Oceanic and Atmospheric Administration (NOAA) to provide climate science training for its sites across the U.S. to ensure that they are aware of their climate hazards and can adapt accordingly.
- DOE is developing a “Climate 101” course. It will be required for federal employees and optional for contractors and will educate staff on the impacts of climate change on DOE.
- DOE will create a resource hub where employees and contractors can find information on climate change and sustainability. Completion of the hub is targeted for 2023.

G. Incorporating Environmental Justice

- DOE will exercise available opportunities to incorporate environmental justice into planning decisions related to sustainable facilities and operations. DOE is identifying and providing opportunities to engage energy and environmental justice communities, build community capacity for meaningful involvement in agency decision-making, as well as ensure shared benefits of resilience and pollution and emissions reductions.

H. Accelerating Progress through Partnerships

DOE is accelerating advancement of sustainability goals through partnerships that allow the Department to leverage the collective knowledge and power of the federal government.

- DOE has established several interagency partnerships that promote knowledge sharing and best practices around CFE, climate change, and sustainability.

3. Progress Examples

A. 100 Percent Carbon Pollution-Free Electricity

DOE is utilizing a multipronged approach to achieve CFE, including a roadmap, interagency partnerships, and new analyses.

- In 2022, DOE developed a CFE Roadmap and implementation guidance which call for improved energy efficiency and electricity demand response; greater deployment of onsite CFE generation and storage; and increased CFE procurement. In accordance with the Roadmap and guidance, DOE programs submitted plans in 2022 to identify opportunities for meeting the CFE requirements for 100% CFE by 2030.
- DOE has developed a report describing the benefits of rapidly increasing clean electricity supply; estimating the new capacity needed for the nation to reach 100 percent clean power by 2035; and outlining DOE’s current efforts and priority actions as well as other stakeholder contributions needed to achieve this goal.

B. 100 Percent Zero-Emission Vehicle Fleet

In FY 2021, 0.8 percent of the light-duty vehicles acquired were ZEVs. DOE currently has 572 EVSEs installed. In FY 2022, 25 percent of the light-duty vehicles acquired were ZEVs.

- DOE exceeded its 2022 ZEV acquisition stretch goal of 226 light-duty ZEVs by 15%.
- The National Nuclear Security Administration made a targeted investment for site EVSE.
- Idaho National Laboratory (INL) installed the first heavy duty charger to support a battery electric motorcoach purchased using multiple research funding sources. A second heavy duty charger will be installed during FY 2023. This motorcoach and these chargers will provide real world data as INL develops a zero-emissions motor coach strategy.

C. Net-Zero Emissions Buildings, Campuses, and Installations

The Department has reduced its scope 1 and 2 GHG emissions by 49.1 percent from FY 2008 levels through aggressive energy management. It has identified several additional opportunities for the reduction of scope 1 and 2 emissions.

i. Design and Construction for Net-Zero Emissions

- DOE announced the new NZL Pilot initiative that lays the foundation for one of the first-ever models for addressing hard-to-decarbonize industries. Four DOE National Laboratories are taking proactive steps to produce and harness technology at their facilities to drive down carbon emissions. DOE expects the pilot to demonstrate solutions that can be replicated at facilities across DOE, state and local governments, and the federal government.

ii. Increasing Energy Efficiency

- DOE will continue to use performance contracting to optimize funding and partnerships for energy efficiency, renewable energy, and water conservation improvements.
- To implement high priority energy and water conservation measures, six sites are actively developing performance contracts and several others are in the early planning stages.

iii. Increasing Water Efficiency

- Los Alamos National Laboratory utilizes reclaimed water to cool its data centers. Its Sanitary Effluent Reclamation Facility processes water from the waste treatment plant and sends it to the Metropolis Center as well as to cooling infrastructures.

D. Reducing Waste and Pollution

The Department has several initiatives to reduce waste and pollution, increase diversion, and improve circularity to achieve the federal waste goals defined in E.O. 14057.

- Y-12 recycles more than 35 material streams including tires, wooden pallets, fire extinguishers, cooking grease, and paper briquettes.
- By 2025, Lawrence Berkeley National Laboratory (LBNL) will reduce 75 percent of its waste. Process changes such as replacing workstation waste baskets for centralized waste stations will increase diversion and help LBNL reach state and federal goals.

E. Sustainable Procurement

In FY 2021 the Department saw an increase of 0.8 percentage points in contract actions and an increase of 3.5 percentage points in dollar value of sustainable acquisitions. The reportable contract actions include the mandatory clauses for the purchase of biobased, energy-efficient, recycled content and other sustainable attributes.

- In FY 2021, Legacy Management’s Weldon Spring Interpretive Center won the first GreenSpace award. The GreenSpace Award was introduced as an extension of the GreenBuy Award Program to further challenge DOE sites to purchase sustainable products for a single space or function.
- In FY 2022, DOE’s GreenBuy Priority Products List was updated for FY 2023, to address products with Per- and Polyfluoroalkyl Substances (PFAS). Stipulations for no PFAS were added to containers, cutlery, dishware, take-out service, carpet, and furniture.

F. Climate- and Sustainability-Focused Federal Workforce

The Department is focused on increasing the climate literacy of the workforce.

- In FY 2022, DOE partnered with NOAA to provide DOE sites with climate science assistance sessions. In these sessions, sites learned how to access and interpret climate and extreme weather data to forecast the likelihood of site hazards and determine their potential effect on critical assets and infrastructure.
- DOE publicized and encouraged its workforce to participate in the [Sustainability Speaker Series for the Federal Community](#) hosted by the White House Office of the Federal Chief Sustainability Officer.

G. Incorporating Environmental Justice

DOE continues to incorporate environmental justice in all Departmental policies and activities.

- DOE is including environmental justice language into requests for information and funding opportunity announcements.
- DOE is accelerating the development of emerging climate change technologies within energy and environmental justice communities by providing educational opportunities. Over 800 students from Minority Serving Institutions (MSIs) have started applications to participate in DOE's 2022 Minority Educational Institutions Student Partnership Program as of April 2022. Over 1200 Minority/Small Businesses, MSIs, students, and others have attended the Office of Economic Impact and Diversity’s Minority Programs outreach events since January 2022.

H. Accelerating Progress through Partnerships

DOE utilizes several key working groups and programs to advance progress across the sites.

- In Colorado DOE is partnering with the CEQ, General Services Administration, Department of Defense and the National Renewable Energy Laboratory (NREL) to pilot an aggregated CFE electricity procurement initiative and leverage the buying power of the federal government while catalyzing broader deployment of CFE in the marketplace.
- The Sustainable Climate-Ready Sites (SCRS) program recognizes site achievements in 15 categories including sustainability, natural resource management, and climate resilience. The SCRS program commenced its six-month pilot phase in February 2022, focusing on durable approaches for improving environmental stewardship and sustainable operations.