DOE Sustainability and Climate Plans

U.S. DEPARTMENT OF ENERGY

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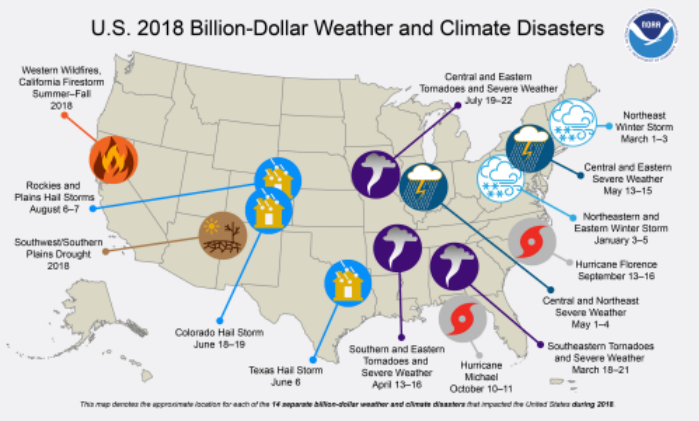
Part 1: Sustainability Strategic Plan

- Policy drivers
- Overview
- Three elements
- Next Steps

Part 2: Climate Adaptation and Resilience Plan

- Overview & Drivers
- Vulnerability Assessment and Resilience Plans
- Next steps
- Climate 101 Training



Sustainability Strategic Plan
Policy Drivers

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1) Executive Order 14057: *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*

Policy: Achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050.

The Federal Government has the following goals:

i. 100 percent carbon pollution-free electricity on a net annual basis by 2030, including 50 percent 24/7 carbon pollution-free electricity
ii. 100 percent zero-emission vehicle acquisitions by 2035, including 100 percent zero-emission light-duty vehicle acquisitions by 2027
iii. a net-zero emissions building portfolio by 2045, including a 50 percent emissions reduction by 2032
iv. a 65 percent reduction in scope 1 and 2 greenhouse gas emissions, as defined by the Federal Greenhouse Gas Accounting and Reporting Guidance, from Federal operations by 2030 from 2008 levels
v. net-zero emissions from Federal procurement, including a Buy Clean policy to promote use of construction materials with lower embodied emissions
vi. climate resilient infrastructure and operations
vii. a climate- and sustainability-focused Federal workforce

2) DOE Order 436.1A: *Departmental Sustainability (see related presentation)*

2023 Sustainability Plan

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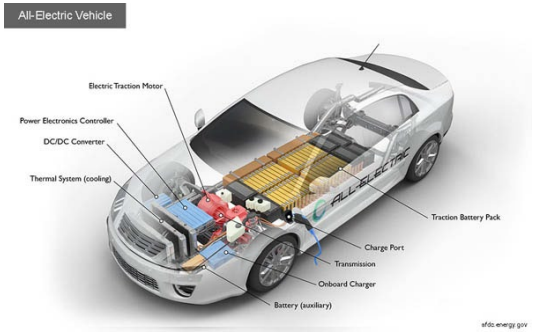
E.O. 14057: Directs agencies to submit annually to CEQ streamlined, data-driven Strategic Plans for achieving goals of E.O. 14057.

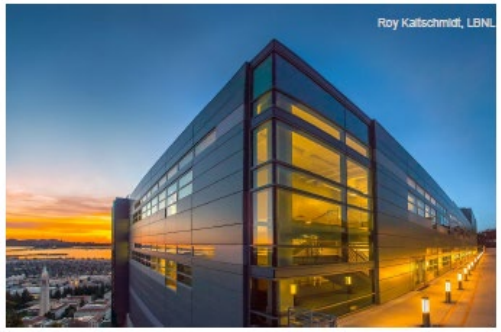
Plan elements

1. Carbon pollution-free electricity
2. Zero-emissions vehicles
3. Net-zero emissions buildings

Outline of each element

Section 1: Progress Target Planning
Section 2: Strategic Budget Coordination
Section 3: Challenges
Section 4: Integrated Management
Section 5: Agency Approvals and POCs





Sustainability Plan: Carbon Pollution-Free Electricity (CFE)

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DOE's CFE Roadmap

- Sets ambitious goals and objectives, Program-specific CFE implementation plans, and implementation actions.
- Develops strategies for improved energy efficiency and electricity demand response, greater deployment of onsite CFE generation and storage, and increased CFE procurement.

CFE Strategic Plan

Goal: 100 percent net annual CFE use by FY 2030

50 percent 24/7 CFE by FY 2030.

1. Grid-supplied CFE: CFE provided as part of the standard electricity grid mix from an electricity supplier for FY 2023 through FY 2030
2. Onsite CFE: CFE generated on federal sites and lands for FY 2023 through FY 2030
3. Purchased CFE: CFE procured from an electricity supplier
4. Legacy CFE from EPAct 7.5% cap: Electricity that complies with EPAct 2005's Renewable Energy requirements but does not comply with CFE requirements for FY 2023 through FY 2030

Metric		(MWh)								
		FY 22A	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30
1	**Total annual CFE *(a+b+c+d)***									
a	*Grid-supplied CFE*									
b	*Onsite CFE*									
c	*Purchased CFE*									
d	*Legacy CFE from EPAct 7.5% cap*									
2	**Total annual electricity usage**									
	Annual Progress Target: CFE as % of annual electricity usage									

Sustainability Plan: Zero-Emission Vehicles (ZEV)

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DOE's ZEV Roadmap

- Work with sites with large numbers of potential conversions to ZEVs
- Conduct regular meetings with sites and programs re. vehicle availability and site ZEV/EVSE plans.
- Conduct a Vehicle Allocation Methodology (VAM) covering over 20% of the fleet annually to identify ZEV replacement opportunities and right-sizing the fleet.

ZEV Strategic Plan

Goal: 100% zero-emission vehicle (ZEV) acquisitions by 2035, including 100% light-duty (LD) ZEV acquisitions by 2027.

1. 100% zero-emission vehicle (ZEV) acquisitions by 2035, including 100% light-duty (LD) ZEV acquisitions by 2027.
2. ZEV & EVSE Inventory

Metric	2022 Actual	2023 Projected	2024 Targets	2025 Targets	2026 Targets	2027 Targets	2028 Targets	2029 Targets	2030 Targets	2031 Targets	2032 Targets	2033 Targets
LD ZEVs Added												
ZEV % of LD Acquisitions							100%	100%	100%	100%	100%	100%
MD and HD ZEVs Added												
ZEV % of MD and HD Acquisitions												
Total ZEVs Added												
Total ZEV Acquisition %												

Sustainability Plan: Net-Zero Emission Buildings

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DOE's Net-Zero Roadmap

DOE sites and programs should focus on reducing scope 1 and 2 emissions from their real property portfolios. Sites and programs should increase energy and water efficiency and greatly reduce or eliminate on-site fossil fuel use in existing and planned facilities. Strategies include:

1. Decrease emissions from existing real property
2. Ensure new real property performs to net-zero standards
3. Leverage performance contracting
4. Pursue innovation now to ensure future solutions to challenges

NZE Buildings Strategic Plan

Goal: Net-zero emissions building portfolio by 2045, including 50 percent reduction in GHG by 2032 from 2008 levels.

1. Energy Efficiency
2. Water Efficiency
3. Federal Building Performance Standard
4. Deep Energy Retrofits
5. Climate Smart Buildings Initiative

Federal BPS	BPS Applicable Facilities GSF (thous.)*							
	Annual scope 1 emissions from applicable facilities (MT CO2e)							
	FY21-FY23**	FY24	FY25	FY26	FY27	FY28	FY29	FY30
GSF (thous.) of facilities intending to electrify								
Count of buildings*** intending to electrify								
Cumulative % of GSF that meets the Federal BPS								≥ 30%

Energy Use Intensity	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Target EUI (Btu/GSF)										
% Difference from 2030 target										

Sustainability Plan Next Steps

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- ✓ Received CEQ's FY 2024 Sustainability Strategic Plan guidance.
  1. Consolidate CFE, ZEV, and Buildings into one planning process. The plan will include a 1-page executive summary and data tables containing agency progress on CFE, ZEV, and Buildings.
  2. The completed plan is due September 1st.
  3. CEQ and OMB will review plans and work with DOE to discuss agency targets. CEQ approve annual progress targets between October-December 2023.
  4. DOE is to sign off on targets within 30 days.
- ✓ Agencies will not be required to develop and submit a 2023 Sustainability Report (formerly referred to as the "Sustainability Plan"), traditionally due June 30.

Part 2: Climate Adaptation and Resilience Plan (CARP)

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Executive Order 14008: *Tackling the Climate Crisis at Home and Abroad*

Directs agencies to develop a climate action plan:

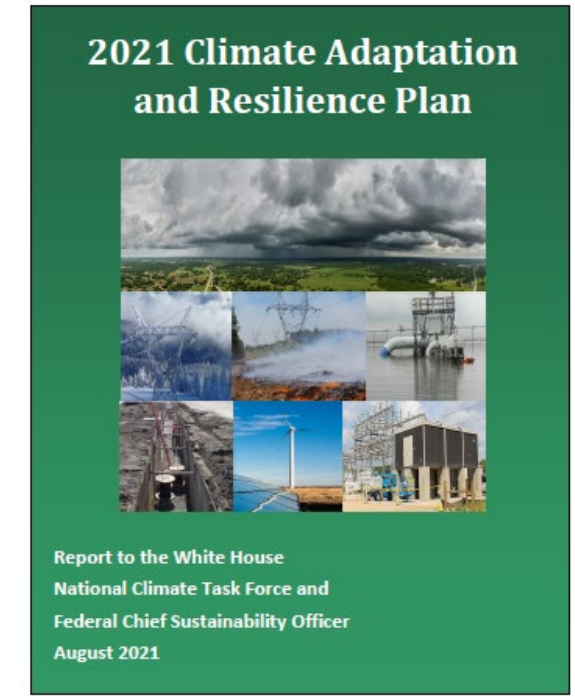
- The **DOE CARP** addresses both climate adaptation and resilience efforts and details projects the Department will undertake to become more resilient, adapt to a changing climate.
- The CARP also includes a Climate Adaptation Policy Statement which affirms the Department's commitment manage the short and long-term effects of climate change on our mission, policies, programs, and operations.

The CARP required each site to develop a Vulnerability Assessment and Resilience Plan and for DOE to conduct workforce training on climate.

CARP Priority Actions

The CARP contains five DOE-identified priority actions:

1. Assess Vulnerabilities and Implement Resilience Solutions at DOE Sites
2. Enhance Climate Adaptation and Mitigation Co-benefits at DOE Sites
3. Institutionalize Climate Adaptation and Resilience Across DOE Policies, Directives, and Processes
4. Provide Climate Adaptation Tools, Technical Support, and Climate Science Information
5. Advance Deployment of Emerging Climate Resilient Technologies



CARP Special Topics

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The CARP also contains CEQ-determined special topics:

1. Update agency-wide climate vulnerability assessments
2. Enhance climate literacy in DOE's management workforce

3a. Enhance climate resilience for climate-ready sites and Facilities

3b. Ensure a climate-ready supply of products and services

Vulnerability Assessment & Resilience Plans (VARPs)

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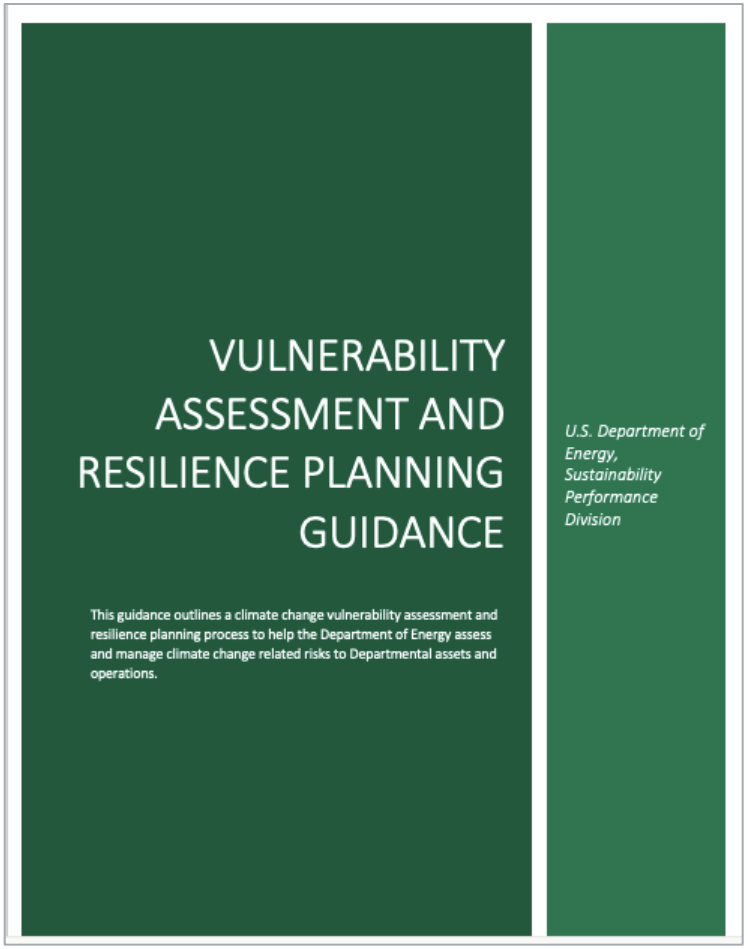
The CARP's Priority Action 1 directed all DOE sites to conduct a VARP by September 30, 2022.

In their VARPs, DOE sites:

- Identified major vulnerabilities
- Determine methods to increase resilience
- Planned, prioritized, and are now implementing resilience solutions


VULNERABILITY ASSESSMENT AND RESILIENCE PLANNING GUIDANCE

This guidance outlines a climate change vulnerability assessment and resilience planning process to help the Department of Energy assess and manage climate change related risks to Departmental assets and operations.

U.S. Department of Energy, Sustainability Performance Division

VARP Process

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In each VARP, DOE sites were directed to:

- **Step 1:** Identify VARP Planning Team
- **Step 2:** Identify Critical Assets and Infrastructure
- **Step 3:** Characterize Climate Trends and Events
- **Step 4:** Characterize the Likelihood of Climate Change Hazards
- **Step 5:** Characterize Current and Projected Impacts of Climate Change Hazards on Assets and Infrastructure Systems
- **Step 6:** Characterize Vulnerabilities with a Risk Matrix
- **Step 7:** Identify and Assess Resilience Solutions
- **Step 8:** Develop and Implement a Portfolio of Resilience Solutions
- **Step 9:** Monitor, Evaluate, and Reassess the Resilience Plan

VARP & CARP Next Steps

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- ✓ **DOE-Wide Vulnerability Assessment Summary Report**
  1. Internal DOE-wide vulnerability assessment utilizing site VARP data.
  2. First draft will be completed soon and will be circulated to the program offices for review.
  3. Includes detailed analyses of DOE's climate hazards, critical assets, and resilience solutions. The goal is to identify:
     - Site vulnerability trends by region (historical & projected)
     - Resilience solution trends, gaps, and implementation constraints

- ✓ **CARP**
  1. The next full issuance of the CARP will be due in late 2023/early 2024.
  2. SPD expects to receive CARP guidance this summer.
  3. There will be no CARP Progress Report required of agencies in 2023.

Introduction to Climate Change Training Course

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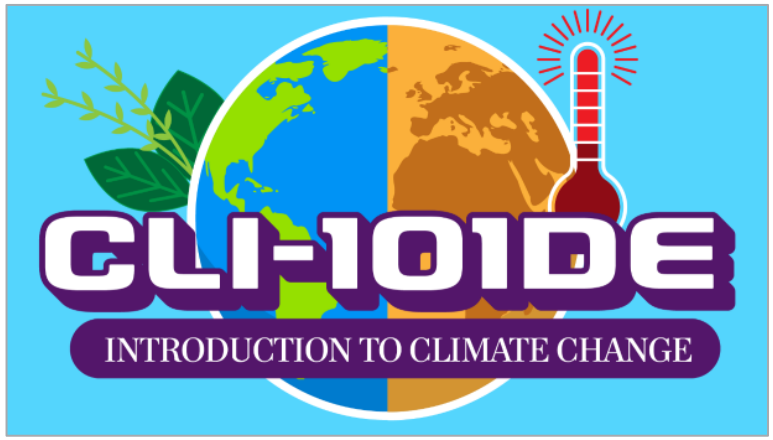
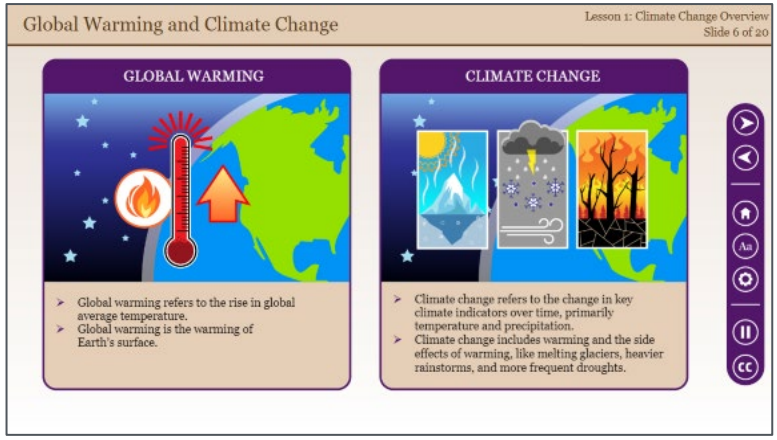
- Introduction to Climate Change (CLI101) is a one-hour e-Learning course developed for DOE by SPD, FEMP, EHSS-21, and the National Training Center.
- The course contains three lessons:
  - Climate Change Overview
  - Impacts of Climate Change
  - Responses to Climate Change
- The course will be available on Learning Nucleus in June.
- Course will be made available for use by M&O contractors and other federal agencies.





Thank you!

Please feel free to contact SPD:

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