Implementing Instructions for Executive Order 14057 Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability

The White House Council on Environmental Quality

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1. Introduction

1.1 Purpose

These Implementing Instructions (Instructions) provide Federal executive departments and agencies (agencies) with direction for implementing Executive Order (E.O.) 14057, *Catalyzing Clean Energy Industries and Jobs through Federal Sustainability*.[1] Independent agencies are encouraged to consider the Instructions and implement E.O. 14057, consistent with applicable law.

1.2 Authority

The Council on Environmental Quality (CEQ) issues the Instructions pursuant to section 510(b) of E.O. 14057, which directs the Chair of CEQ, in consultation with the Director of the Office of Management and Budget (OMB), to issue implementing guidance for agencies that provide directions, strategies, and recommended actions to meet the policies and goals of E.O. 14057.[2] The Instructions also implement and are consistent with OMB Memorandum M-22-06, *Catalyzing Clean Energy Industries and Jobs through Federal Sustainability* (M-22-06),[3] which the Director of OMB, Chair of CEQ, and National Climate Advisor issued pursuant to section 510(a) of E.O. 14057.

CEQ, in consultation with OMB, may update or amend the Instructions or issue additional guidance. Agencies may issue supplementary internal instructions or guidance regarding implementation of E.O. 14057 consistent with the Instructions and other guidance documents issued by CEQ or OMB.

1.3 Overarching Policy and Directives

E.O. 14057 outlines a coordinated, whole-of-government approach, along with individual agency goals and actions, to transform Federal procurement and operations to reduce greenhouse gas (GHG) emissions and environmental impacts and secure a transition to clean energy and sustainable technologies. It establishes that the Federal Government will lead by example to achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by 2050, using its scale and procurement power to achieve:

- 100 percent carbon pollution-free electricity on a net annual basis by 2030, including 50 percent 24/7 carbon pollution-free electricity;

- 100 percent zero-emission vehicle acquisitions by 2035, including 100 percent zero emission light-duty vehicle acquisitions by 2027;

[1] 86 Fed. Reg. 70,935 (Dec. 13, 2021), https://www.federalregister.gov/documents/2021/12/13/2021-27114/catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability.
[2] This document is intended solely to improve the internal management of the Executive Branch. It is not intended to and does not create any right or benefit, substantive or procedural, enforceable by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.
[3] https://www.whitehouse.gov/wp-content/uploads/2021/12/M-22-06.pdf.

- A net-zero emissions building portfolio by 2045, including a 50 percent emissions reduction by 2032;
- A 65 percent reduction in scope 1 and 2 GHG emissions from Federal operations by 2030 from 2008 levels;
- Net-zero emissions from Federal procurement, including a Buy Clean policy to promote use of construction materials with lower embodied emissions;
- Climate resilient infrastructure and operations; and
- A climate- and sustainability-focused Federal workforce.

Achieving these ambitious commitments requires action by each and every agency, starting today. Accordingly, E.O. 14057 sets forth specific goals for agencies, requires them to set annual targets, and establishes an integrated approach to planning and managing performance—setting the foundation for a decade of action to cut GHG emissions from Federal operations and drive greater sustainability government-wide.

2. Governance, Oversight, and Organization

2.1 Agency Chief Sustainability Officers (CSOs)

Section 502 of E.O. 14057 directs heads of agencies to designate an Agency CSO charged with ensuring effective implementation of the E.O. within the agency. Consistent with section IV.D of M-22-06, Agency CSOs are responsible for:

- Leading agency planning, implementation, and related actions to achieve the policy and goals of the E.O. and achievement of targets established under the E.O.;
- Coordinating with agency leadership across policy and management functions (e.g., the Agency's Chief Financial Officer, Chief Information Officer, and Chief Acquisition Officer);
- Reporting to the Chair of CEQ and Director of OMB regarding agency progress toward sustainability goals and targets;
- If invited by the Chair of CEQ, representing the agency on the CSO Council;
- Providing plans, reports, information, and assistance necessary to the Director of OMB, the Chair of CEQ, and the Federal CSO;
- Convening regular meetings of relevant agency bureaus, components, or offices as necessary for effective implementation; and

- Ensuring that regional facilities and personnel are integrated into sustainability planning, policies, and implementation.

Upon the departure of the Agency CSO, the agency must designate a new Agency CSO and notify the Chair of CEQ at chair@ceq.eop.gov.

2.2 Chief Sustainability Officer Council

Consistent with section 504 of E.O. 14057, the CSO Council advises the Director of OMB and the Chair of CEQ on the performance of agency responsibilities under E.O. 14057. The Federal Chief Sustainability Officer chairs the CSO Council and the members include:

- Agency CSOs invited by the Chair of CEQ;
- OMB's Associate Director for Climate, Energy, Environment, and Science;
- CEQ's Senior Director for Environmental Justice;
- The Director of the Department of Energy (DOE) Federal Energy Management Program (DOE-FEMP);
- The Director of the General Services Administration (GSA) Office of Federal High-Performance Green Buildings; and
- Other representatives designated by the heads of agencies and invited by the Chair of CEQ.

The Chair of CEQ may invite other members or change the composition of the Council consistent with section 504(b) of E.O. 14057. As Chair of the CSO Council, the Federal CSO may establish subcommittees to provide input, advice, or recommendations to the CSO Council.

2.3 Working Groups, Committees, and Task Forces

***Leaders Working Groups*:** Section 508 of E.O. 14057 establishes several Federal Leaders Working Groups around priority E.O. goals to monitor progress and report to the National Climate Task Force semiannually on actions, findings, and progress. M-22-06 outlines the member agencies of each working group. CEQ will initiate the formation and coordinate the work of the individual Working Groups.

***Interagency Working Groups*:** Section 504(c) of E.O. 14057 provides that the Chair of CEQ may establish additional committees, interagency groups, or task forces to support E.O. implementation. Additionally, the Office of the Federal CSO may coordinate with existing Federal interagency working groups whose activities support achievement of the goals of the E.O.

2.4 Incorporation of E.O. Requirements into Agency Policy and Procedures

Consistent with section 507 of E.O. 14057, agencies must issue or revise existing agency policies, directives, and guidance, as appropriate, including employee training, to ensure alignment with the goals and requirements of the E.O., these Instructions, and further guidance issued to implement the E.O. Agencies should continue to use effective management strategies, such as environmental management systems (EMS) and energy management systems (EnMS), if they align with and support their agency needs and facilitate implementation and progress toward E.O. goals.

Agencies that provide government-wide training, resources, and technical support related to Federal sustainability and climate adaptation requirements and implementation, including DOE-FEMP, GSA, the Environmental Protection Agency (EPA), and the Department of Agriculture (USDA), should review, update, and maintain materials, trainings, and other resources to ensure that information regarding Federal policies, priorities, guidance, and best management practices are current and aligned with goals and requirements of the E.O., these Instructions, and further guidance issued to implement the E.O.

3. Reporting and Performance Management

3.1 Agency Planning and Reporting

Section 503 of E.O. 14057 directs Principal agencies to report to the Chair of CEQ and the Director of OMB regarding agency implementation and progress toward the goals of the E.O. Under section IV.C of M-22-06, contributing agencies subject to executive policy must implement the duties of Principal agencies, where appropriate and consistent with the scope of the agency's operations. The E.O. also encourages independent agencies to meet the E.O.'s requirements, including these instructions.

***Agency Sustainability Plan*:** Under section 503 of E.O. 14057, Principal agencies must develop and submit a Sustainability Plan, consistent with CEQ guidance, which will set the annual timeline for reporting. In consultation with CEQ, other agencies may elect to develop plans and provide reporting.

***Agency Climate Adaptation and Resilience Plan (CAP)*:** Principal agencies, as well as agencies required to submit a Climate Action Plan under section 211 of E.O. 14008, *Tackling the Climate Crisis at Home and Abroad*,[4] must annually update and submit a Climate Adaptation and Resilience Plan or progress report to CEQ and OMB., as required by section 503(b) of E.O. 14057. CEQ will provide directions annually on such plans or progress reports.

***Plan Submission, Review, and Approval*:** Agencies must submit Sustainability Plans and CAPs to CEQ and OMB by June 30 of each year, unless otherwise specified in the annual guidance provided by CEQ. After CEQ review and OMB approval, CEQ will make plans publicly

[4] 86 Fed. Reg. 7,619 (Feb. 1, 2021), https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad.

available on the website of the Office of the Federal CSO,[5] and agencies also must make plans publicly available on their agency websites.

3.2 Targets

These instructions outline targets and progress metrics for certain goals of E.O. 14057. CEQ and OMB may revise targets and progress metrics as appropriate and consistent with the E.O.'s goals and requirements.

Agency-Established Targets: Section 201 of E.O. 14057 requires the head of each agency to propose agency-specific targets, including annual progress targets, where applicable, for GHG emissions reductions; carbon pollution-free electricity (CFE); zero-emission vehicle (ZEV) fleets; net-zero emission buildings, campuses, and installations; and energy and water efficiency.

Target setting process: CEQ and OMB will issue guidance for setting initial targets. Agencies must propose targets for review and approval by CEQ and OMB within 90 days of receiving target setting guidance, unless the guidance directs otherwise.

Consistent with section 509(c) of E.O. 14057, DOE-FEMP will develop tools and associated data and analysis to assist agencies in projecting agency progress. CEQ, in coordination with OMB, will keep agency CSOs and staff apprised of the planned schedule for setting initial agency targets across E.O. goals.

Adjustments to annual progress targets: Agencies may adjust annual progress targets for future fiscal years, with the concurrence of CEQ and OMB, as part of the annual priority goal target and planning process described in section 3.3.

3.3 Performance Management

***Planning and Portfolio Management Reviews*:** E.O. 14057 sets ambitious goals in sectors that are rapidly developing and changing, requiring innovation within and outside of the Federal Government. Accordingly, planning, implementation, and performance management for certain goals under the E.O. requires a more dynamic, collaborative, and iterative approach.

Annual priority goal target and planning process: As set forth in the Instructions, agencies must develop annually and submit to CEQ streamlined, data driven Strategic Plans for the CFE, ZEV, and buildings goals. CEQ and OMB will review the plans and, where appropriate, meet with agency staff to discuss progress to date and future plans for implementation, and to identify successful practices, challenges, and needs for technical support. CEQ and OMB review of the Strategic Plans and related discussions with agencies are intended to be an internal collaborative process to assist agencies in developing detailed, robust plans to achieve goals and targets. Principal agencies must report publicly on targets, strategies, actions, and progress through the Annual Sustainability Plan.

CEQ, in coordination with OMB, will develop annually and provide agencies with CFE, ZEV, and Buildings Strategic Plan templates to facilitate streamlined, data-driven plans and calculate

[5] https://www.sustainability.gov.

expected outcomes and results, including progress toward agency-established targets. DOE-FEMP and GSA will support the planning process with relevant data analysis and tools.

Incorporation of targets into OMB scorecard: OMB will select agency-established targets and additional performance measures and incorporate them into annual agency scorecards.

Sustainability portfolio management reviews: Beginning in fiscal year (FY) 2023, CEQ and OMB will conduct annual portfolio management reviews with principal agencies consisting of meetings with Agency CSOs and other senior agency leaders to review agency progress toward goals and key performance indicators and to discuss areas of exceptional performance and areas of challenge or delayed progress.

3.4 Data Reporting and Collection

Consistent with section 503 of E.O. 14057 and section IV.A of M-22-06, agencies must track progress and provide reporting consistent with these Instructions. To streamline reporting and data analysis, monitor progress, and measure performance, agency progress and performance data will be collected, to the extent possible, through established Federal reports and systems, including:

- Annual Energy Management Data Report[6](Annual Energy Report): Agencies submit this annual report to DOE-FEMP. It includes reporting of annual energy, and water use, CFE, investments in facility efficiency, new building design compliance, metering, and GHG emissions data.

- Energy Independence and Security Act of 2007 (EISA) 432 Compliance Tracking System[7] (CTS): DOE-FEMP manages this system, which tracks compliance with statutory requirements for building benchmarking, audits, and implementation of energy conservation measures (ECMs) and water conservation measures (WCMs).

- Federal Automotive Statistical Tool[8] (FAST): DOE's Idaho National Laboratory, in coordination with GSA, maintains this system for data on vehicle inventories, acquisitions, electric vehicle supply equipment (EVSE) installations, fuel use, and mileage.

- Federal Real Property Profile Management System[9] (FRPP-MS): GSA manages this system for real property data, including data on sustainable buildings.

- Other Reporting Tools**:** CEQ or OMB may identify other data collection and reporting tools or request supplemental data. For a summary of reporting requirements, systems, and deadlines, see Appendix C.

[6] https://www.energy.gov/eere/femp/articles/annual-energy-management-data-report.
[7] https://www.eisa-432-cts.eere.energy.gov/EISACTS/Login.aspx.
[8] https://fastweb.inl.gov.
[9] https://www.realpropertyprofile.gov/FRPPMS/FRPP_Login.

4. Sustainability Goals and Targets

4.1 GHG Emissions Reduction

4.1.1 Policy

It is therefore the policy of my Administration for the Federal Government to lead by example in order to achieve . . . net-zero emissions economy-wide by no later than 2050. (Sec. 101 of E.O. 14057)

Each agency shall reduce its scope 1, 2, and 3 greenhouse gas emissions, as defined by the Federal Greenhouse Gas Accounting and Reporting Guidance, by setting and meeting targets for fiscal year 2030 measured from a fiscal year 2008 baseline. (Sec. 202 of E.O. 14057)

4.1.2 Overview

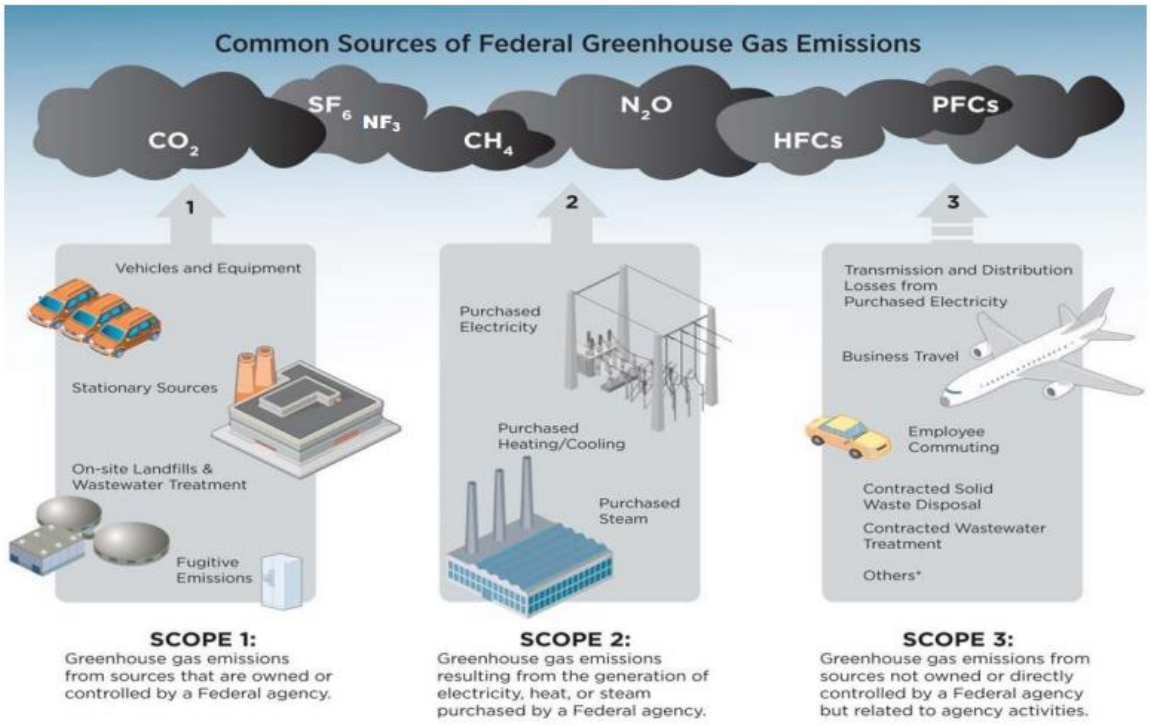
E.O. 14057 establishes a policy that the Federal Government will lead by example to help transition the Nation to a net-zero emissions economy by 2050 by setting ambitious government-wide goals for a 65 percent reduction in scope 1 and 2 GHG emissions by 2030 from 2008 levels and achieving net-zero emissions procurement. To achieve these government-wide goals, the E.O. requires agencies to set individual scope 1 and scope 2 reduction targets, as well as scope 3 reduction targets, and meet building, fleet, and operational goals aimed at reducing these emissions.

4.1.3 Progress Metrics

Targets:	Agencies will set individual 2030 GHG reduction targets for scope 1, scope 2, and scope 3 emissions.
Metrics:	Percentage reduction of emissions measured in metric tons of carbon dioxide equivalent (MTCO2e) from the baseline year as established by the E.O.
Progress Milestone:	Agencies will set net annual progress targets based on CEQ guidance.

4.1.4 Scope 1, 2, and 3 and Associated Emissions Sources

The illustration below shows common sources of Federal scope 1, 2, and 3 emissions. Note that there are additional sources of scope 3 emissions beyond those represented here, including categories of Federal supply chain emissions.



4.1.5 Agency Planning and Reporting

<u>Reporting of GHG emissions and emissions reductions</u>:

Scope 1 and 2 Emissions: Agencies must report scope 1 and 2 emissions as part of the Annual Energy Management Data Report, due annually on January 31 to DOE-FEMP.

Scope 3 Emissions: Consistent with section 302 of E.O. 14057, GSA, in coordination with CEQ and OMB, must assess systems and methodologies to track and report government-wide and agency-specific scope 3 emissions. This assessment should consider all 15 categories of scope 3 emissions, availability of data, the scale of categories of emissions in relation to the Federal Government's total emissions, as well as the potential to use data to inform emissions reduction strategies. Based on the results of the assessment and in coordination with CEQ and OMB, GSA must develop systems to provide annual reporting of scope 3 emissions, at the Federal and agency level, as appropriate, and calculate relevant categories of scope 3 emissions using the best available methodologies and data sources, due annually on or before January 31. Agencies with existing initiatives to track and report scope 3 emissions must coordinate with CEQ and GSA to ensure that agency systems and approaches align with government-wide tracking and reporting methodologies.

Setting Agency Targets:

Consistent with section 201 of E.O. 14057, agencies must propose agency-specific targets for both scope 1 and scope 2, as well as scope 3 reductions based on CEQ and OMB's forthcoming guidance. CEQ and OMB will review and approve targets and may incorporate them into OMB scorecards.

Scope 1 and 2 Targets: Consistent with sections 102 and 202 of E.O. 14057 and the approach taken under previous Executive Orders,[10] agencies must measure scope 1 and 2 reductions from a FY 2008 baseline. Consistent with section 509(c) of the E.O. and section IV.A.3 of M-22-06, DOE-FEMP must develop and provide agencies with agency scope 1 and scope 2 GHG target setting tools and instructions. The tools should take into account projected GHG reductions resulting from each agencies achievement of their CFE, ZEV, and building--related GHG goals.

Scope 3 Targets: In coordination with CEQ and OMB, GSA must develop tools to establish appropriate baselines and assist agencies in setting scope 3 targets. When directed, each agency must develop and submit a FY 2030 target, along with annual progress targets, based on CEQ guidance. GSA, in coordination with CEQ, OMB, and other appropriate agencies, must develop and provide tools to assist agencies in developing their scope 3 targets. In coordination with OMB, CEQ will identify the need for baseline adjustments or new baselines, taking into consideration the addition of supply chain emissions into scope 3 tracking, availability of agency historical data, and the methodologies for quantifying scope 3 emissions identified by GSA.

[10] This approach is consistent with those taken under previous Executive Orders, including E.O. 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, 74 Fed. Reg. 52,117 (Oct. 8, 2009), https://www.federalregister.gov/documents/2009/10/08/E9-24518/federal-leadership-in-environmental-energy-and-economic-performance; E.O. 13693, *Planning for Federal Sustainability in the Next Decade*, 80 Fed. Reg. 15,869 (Mar. 25, 2015), https://www.federalregister.gov/documents/2015/03/25/2015-07016/planning-for-federal-sustainability-in-the-next-decade; and E.O. 13834, *Efficient Federal Operations*, 83 Fed. Reg. 23,771 (May 22, 2018), https://www.federalregister.gov/documents/2018/05/22/2018-11101/efficient-federal-operations.

4.2 Carbon Pollution-Free Electricity

4.2.1 Policy

[T]he Federal Government shall use its scale and procurement power to achieve . . . 100 percent carbon pollution-free electricity on a net annual basis by 2030, including 50 percent 24/7 carbon pollution-free electricity . . . . (Sec. 102(a)(i) of E.O. 14057)

[A]gencies shall facilitate new carbon pollution-free electricity generation and energy storage capacity by authorizing use of [Federal] real property assets . . . . (Sec. 203 of E.O. 14057)

4.2.2 Overview

E.O. 14057 directs the Federal Government, as the largest consumer of electricity in the Nation, to lead by example in transitioning to 100 percent CFE and to use its purchasing power to accelerate a full transition of the electricity sector to CFE by 2035. The E.O. emphasizes the need for a coordinated, whole-of-government approach to achieve these goals. This will require significant cross-agency collaboration, changes to how agencies plan and execute energy procurement, and enhancements to agency capabilities to measure and track CFE consumption, as well as 24/7 CFE, while technologies, market rules, and procurement mechanisms for CFE continue to develop.

The Instructions provide initial direction for agencies to establish critical systems and begin planning around the CFE goal, including expanding agency information on consumption, measurement systems, and supply arrangements. In addition, the Instructions provide guidance to enable agencies to take action in FY 2022, as a foundational year, to increase CFE purchasing through both existing mechanisms and innovative procurement strategies. Agencies should consult with CEQ when developing strategies or taking action to achieve the CFE goal, to ensure alignment with a whole-of-government approach.

CEQ and OMB will develop further guidance for agencies on implementation of the CFE provisions of E.O. 14057 and M-22-06, including more detailed instructions on the 24/7 CFE goal and planning, purchasing, and accounting for hourly matched CFE. When developing strategies and negotiating energy contracts, agencies should consider that CFE procurements and investments will need to meet the 100 percent net annual and 50 percent 24/7 hourly targets.

4.2.3 Progress Metrics

Targets:	100 percent net annual CFE use by FY 2030. 50 percent 24/7 CFE by FY 2030.
Metrics:	CFE percentage of total annual megawatt hours consumed.
Progress Milestone:	Agencies will set net annual CFE progress targets beginning with FY 2023.

4.2.4 Requirements and Priority Strategies

Net Annual CFE Goal:

Progress toward the net annual CFE goal will be measured by adding purchased CFE, on-site CFE, purchased energy attribute certificates (EACs), and grid-supplied CFE. Agencies must match consumption with all eligible CFE strategies except grid-supplied CFE by obtaining and retiring EACs consistent with the criteria listed in section 4.2.5.

- *Purchased CFE* is electricity purchased from a qualifying CFE generation source with the associated EACs, i.e., the original associated energy attributes have not been separately sold, transferred, or retired. Subject to agency contracting authority, agencies can purchase CFE and the associated EAC from a utility provider (including through a green tariff), retail service provider, energy supply contractor, or through a power purchase agreement (PPA).

- *On-site CFE* is electricity generated at a Federal facility. To count CFE produced at a Federal facility toward the net annual CFE requirement, an agency must obtain and retire the EACs sourced from the on-site CFE generation. If an agency directly produces from an on-site CFE source, but registration of EACs is not available or practicable, an agency may count generation toward the CFE requirement if the agency retains records verifying CFE generator operations (for unmetered systems) or energy production (for metered systems).

- *Purchased EACs* are EACs that are procured independently from the agency's purchases of physical power, often referred to as "unbundled" EACs.

- *Grid-supplied CFE* is CFE delivered as part of default electricity service or the electricity grid mix from a utility or electric service provider (in contrast to purchased CFE, in which the CFE and associated EAC are specified contractually). To ensure standardized calculation of grid-supplied CFE across the Federal Government, DOE-FEMP must provide necessary data on grid-supplied CFE, by Emissions and Generation Resource Integrated Database (eGRID)[11] subregion, using a residual mix methodology that subtracts CFE and unbundled EACs that third parties have purchased, retired or claimed. As market data regarding the CFE content of delivered electricity becomes available, CEQ and OMB may refine methods for calculating for grid-supplied CFE.

[11] https://www.epa.gov/egrid.

4.2.5 Requirements for applying EACs toward CFE goals

In order for electricity procured or produced to count toward net annual CFE progress, an agency must obtain and retire the associated EAC for all strategies identified in section 4.2.4 except grid-supplied CFE.

To count toward the net annual CFE goal, subject to the specific exemptions in sections 4.2.6, 4.2.7 and 4.2.8, agencies must source EACs from generation resources that:

- Produce CFE;
- Were placed in service on or after October 1, 2021, either as a new resource or as new capacity at an existing resource modified to increase output; and
- Deliver CFE to the same grid region of Federal facility consumption.

EACs may be generated within six months prior to or three months after the net annual CFE compliance year.[12]

4.2.6 Bridge EACs

In addition to supporting the goal of 100 percent CFE consumption by 2030, the Federal procurement strategy for CFE supports the broader E.O. 14057 goal to achieve a carbon pollution-free electricity sector by 2035. During this transition, existing and potential CFE generation technologies may require long lead times between when an agency signs a supply contract, and the technology begins to deliver CFE and associated EACs. These lead times also may be subject to extension due to supply, construction, market, or other disruptions.

To accommodate the development and deployment of these CFE technologies, an agency may elect to purchase bridge EACs up to the contracted quantities of megawatt hours during the period between execution of a contract for CFE generation and the date when the CFE generation is placed in service. The agency would count these bridge EACs toward its CFE goal until the supply contract begins to deliver CFE and associated EACs, no later than 2035. Agencies should give preference to EACs from generators placed into service after October 1, 2021, and within the same region. However, where an agency can demonstrate that it will advance the government-wide goals of E.O. 14057, including leading by example to achieve a carbon-pollution free electricity sector and reduce greenhouse gas emissions, agencies may elect to purchase bridge EACs from a CFE generation source that is placed in service prior to October 1, 2021, or that is delivered to a different grid region of Federal facility consumption.

4.2.7 Sale and replacement of EACs for on-site CFE

If EACs are sold to a third party to support the development of on-site CFE production, the agency may count the electricity toward the CFE goal if the agency secures replacement EACs that are of equivalent megawatt hours and sourced from CFE generation that is delivered to the

[12] The use of EACs to meet 24/7 CFE goals will be subject to a more restrictive timing alignment, requiring alignment for when EACs are generated to when facility electricity is actually consumed.

same grid region. In this case of EAC replacement, agencies may choose to procure EACs from a CFE generation source placed in service prior to October 1, 2021.

4.2.8 Reconciliation with EPAct 2005 Renewable Energy Accounting

Existing renewable energy purchase contracts or renewable energy generation that count toward the 7.5 percent minimum consumption requirements in 42 U.S.C. 15852 but that do not meet the requirements in section 4.2.5 may count towards net annual CFE goals subject to a 7.5 percent cap. For purposes of meeting net annual CFE requirements, agencies must report actual renewable energy production.[13] Purchase contracts executed or on-site generation placed in service must include associated EACs, per the requirements in section 4.2.5, to be counted toward the CFE goal.

4.2.9 Tracking and Reporting for CFE

DOE-FEMP will incorporate data on each agency's FY 2021 CFE baseline and track progress toward the CFE goals in the Annual Energy Report.

4.2.10 24/7 CFE Goal

Section 203 of E.O. 14057 sets the goal that agencies match facility electrical energy use on an hourly basis to achieve 50 percent 24/7 CFE by 2030.

CEQ and OMB will issue guidance on methodologies for 24/7 CFE accounting and requirements for reporting and measuring progress toward the 50 percent 24/7 CFE goal in FY 2023, or when sufficient accounting and data management systems for tracking and reporting have been developed.

Pending further guidance and to establish a foundation for meeting 24/7 CFE requirements, in FY 2022, agencies must report on their approach to producing or obtaining, including from electricity providers, their hourly facility consumption profiles by grid region. Beginning with the January 2023 Annual Energy Report, where agencies have the data, agencies must report the percentage of their electricity consumption by grid region on an hourly basis.

4.2.11 Government-Wide Coordination of CFE Procurement

Consistent with section 509(a) of E.O. 14057 and its role of coordinating E.O. implementation, CEQ will collaborate with OMB, energy procuring agencies such as GSA, the Department of Defense (DOD), and DOE, and agency energy leads to facilitate development of government-wide programs, systems, and processes to enable aggregation of demand and efficient, coordinated, and innovative procurement of CFE to meet the E.O. 14057 goals. CEQ also will collaborate with GSA, DOE, and DOD to identify priority areas and service territories for demand aggregation, as well as opportunities for GSA's Federal Rate Intervention Working Group to further support interagency coordination.

[13] The "double bonus" toward Energy Policy Act (EPAct) consumption requirements that is counted for renewable energy produced at a Federal facility or on Tribal land, per 42 U.S.C. 15852(c), does not apply toward the CFE goal.

Geographic and Regulatory Considerations for Procurement and Demand Aggregation

Retail Electric Choice Markets: In deregulated electricity markets where consumers may choose their electricity provider, most agencies purchase electricity through commodity contracts managed by GSA or the Defense Logistics Agency (DLA), thereby aggregating loads and leveraging the Federal Government's collective purchasing power. In developing plans for CFE purchase in these regions, agencies should coordinate with GSA or DLA.

Vertically Integrated Utility Markets: In regulated electricity markets, consistent with the Federal Acquisition Regulations sections 41.204 through 41.206, agencies must procure electricity from their serving utilities through task orders issued under GSA areawide contracts, separate contracts (subject to agency contracting authority), or interagency agreements. In these markets, each serving utility has an assigned agency that serves as the utility lead agency to coordinate discussions with the serving utility, which may include CFE options that can meet the aggregated Federal loads of sites within the service territory. In developing plans for CFE purchases in these regions, agencies should coordinate with the relevant utility lead agencies.

Agency Planning, Reporting, and Target Setting: Consistent with section 201 of E.O. 14057, each principal agency must develop and submit an initial CFE Strategic Plan for FY 2023 and beyond, based on CEQ and OMB's forthcoming guidance and template. Plans must address the agency's current inventory of electricity supply contracts, the agency's approach to producing or obtaining their hourly electricity consumption data by grid region, and initial strategies for implementation to achieve the E.O.'s CFE goals. Agencies must update their plans annually, beginning in FY 2024, based on further CEQ and OMB guidance.

Agency Point of Contact: Agency CSOs should identify one or more points of contact responsible for developing their agency's CFE Strategic Plan.

Further Guidance: In coordination with DOE-FEMP and EPA and in consultation with OMB, CEQ will issue guidance in FY 2023 on methodologies for CFE accounting to measure progress toward meeting the 24/7 hourly matched CFE goal.

4.3 Zero-Emission Vehicle Fleet

4.3.1 Policy

[T]he Federal Government shall use its scale and procurement power to achieve . . . 100 percent zero-emission vehicle acquisitions by 2035, including 100 percent zero-emission light-duty vehicle acquisitions by 2027 . . . . (Sec. 102(a)(ii) of E.O. 14057)

Each agency with a fleet comprising at least 20 vehicles shall develop and annually update a zero-emission fleet strategy . . . . (Sec. 204 of E.O. 14057)

4.3.2 Overview

The Federal Government operates the largest non-tactical vehicle fleet in the world, with more than 600,000 light-, medium-, and heavy-duty vehicles.[14] Transitioning agency vehicles to ZEVs will cut scope 1 GHG emissions, improve public health, help accelerate a rapidly changing transportation sector, and support the development of the domestic ZEV and EVSE industry.

Achieving the 100 percent ZEV goals requires expanded coordination among agencies, particularly among those responsible for fleet management, as well as those responsible for facility and energy management, capital planning, and budgeting. The Federal Government can accelerate achievement of the ZEV goals through new avenues for external coordination with state and local governments, utilities, EVSE providers, and others. The Instructions and the resources included below establish a foundation for planning, target-setting, coordination, and cross-agency collaboration for each agency to achieve the ZEV goals.

4.3.3 Progress Metrics

Target	100 percent of light-duty vehicle acquisitions are ZEVs by 2027. 100 percent medium-duty vehicle (MDV) and heavy-duty vehicle (HDV) acquisitions are ZEVs by 2035.
Metrics	ZEVs as percentage of annual light-duty vehicle (LDV) acquisitions. ZEVs as percentage of annual MDV and HDV acquisitions.
Progress Milestone	Agencies will set annual acquisition targets in consultation with CEQ and OMB, beginning in FY 2022.

[14] GSA, Federal Fleet Report (May 25, 2022), https://www.gsa.gov/policy-regulations/policy/vehicle-management-policy/federal-fleet-report.

4.3.4 Requirements and Priority Strategies: Vehicle Acquisition

Applicability: The ZEV goals and requirements of E.O. 14057, with the exception of the annual Zero-emissions Fleet Strategic Plan requirement (section 204), apply to agencies regardless of the number of vehicles in their fleet. The Strategic Plan requirement applies to all agencies that that own, operate, lease, or otherwise control 20 or more non-tactical automobiles or motor vehicles (including light-, medium-, and heavy-duty vehicles) located in the United States, regardless of whether the agency's number of total vehicles constitute a vehicle fleet under 42 U.S.C. 13211. An agency's entire fleet of vehicles is subject to the E.O.'s requirements, including law enforcement, pursuit and non-pursuit, and emergency response vehicles, unless the agency head specifically exempts them under section 602 of the E.O. Agencies should apply the ZEV goals to overseas vehicles, wherever appropriate ZEV models are available, servicing can meet travel requirements, and fueling infrastructure (including a stable host-nation electrical grid) can be feasibly established and or accessed.

Agencies also must ensure that government-owned, contractor-operated vehicles are acquired and managed in accordance with E.O. 14057's goals and requirements, to the same extent as agency-operated vehicles, and include such requirements in relevant new contracts. Agencies also should include requirements in relevant contracts, where a central purpose of the contract is to provide vehicle transportation services of people or materials on a Federal site, to ensure contractor-owned vehicles operated under such contracts are consistent with the ZEV goals.

Accelerating ZEV acquisitions: To achieve the E.O. 14057 goal of a 100 percent ZEV fleet, agencies should not limit themselves to acquiring ZEVs only where a "like for like" vehicle or vehicle class substitution is available.

- In the event that a planned or targeted ZEV model is not available for a specific vehicle type and configuration, agencies must consider other vehicle types where another ZEV model is offered that meets agency needs. Agencies should look for comparable vehicles that meet performance requirements, including other standard item numbers (SINs) (i.e., other vehicle subclasses) within the same vehicle segment.

- Agencies should include MDVs and HDVs in their annual ZEV acquisition plans consistent with expected availability of new vehicle models in these vehicle classes and begin acquiring such vehicles as they come to market.

- Agencies should deploy managed charging (i.e., controlled by smart chargers with embedded meters to ensure charging occurs at non-peak electric usage times) and also plan for bi-directional charging (i.e., charging that allows electricity to flow both into the vehicle and back from the vehicle to the facility or grid) technology projects in all vehicle classes, though particularly where MDVs and HDVs and their larger batteries can support energy resiliency and load management by serving as mobile energy storage banks.

4.3.5 Requirements and Priority Strategies: Electric Vehicle Supply Equipment (EVSE)

Achieving E.O. 14057's ZEV targets requires rapid deployment of EVSE, which comprises battery and plug-in hybrid electric vehicle charging infrastructure and other types of refueling

infrastructure, such as hydrogen fueling stations for fuel cell electric vehicles. In developing and executing ZEV strategies, agencies also must ensure availability of sufficient EVSE to support a fully ZEV fleet, including planning, financing, and deploying EVSE in advance of vehicle acquisitions.

EVSE planning: EVSE planning, installation, and operational management requires close collaboration between an agency's fleet and facility staff. CEQ will coordinate with OMB, DOE, and GSA to provide agencies with ZEV and EVSE acquisition and deployment tools and fleet data management systems, as well as employee training, to enable effective EVSE planning and deployment.

The following existing resources also are available to assist agencies in planning for EVSE:

- DOE's Alternative Fuel Vehicle (AFV) Screening Tool in the Fleet Sustainability Dashboard (FleetDASH),[15] which assesses opportunities to switch current vehicles to ZEVs, given agency reported usage data.

- DOE's EVI-LOCATE Tool, which will support the planning, design, and cost estimation process for EVSE installation.

- DOE's EV U-Finder Tool,[16] which identifies Federal utility program contacts and EV or EVSE incentives by zip code.

- GSA's EVSE Utilities Dashboard, which provides a list searchable by state of all ZEV and EVSE incentives of which federal agencies may be able to take advantage.

- GSA's fact sheet on how agencies can pay to charge at publicly available EVSE.

- DOE's ZEV Ready Program, which will help determine an individual site's readiness to incorporate ZEVs.

Funding options for EVSE: Agencies should employ all available acquisition and funding mechanisms and technical support to accelerate EVSE deployment and lower overall costs, including:

Utilities: Many utilities offer facility assessments, site planning, financial assistance, incentives, and planning tools for EVSE deployment. Agencies should ensure that facilities coordinate with electric utility providers in EVSE planning, and identify resources and support that can accelerate EVSE planning, financing, and installation. In certain situations, GSA areawide agreements with utilities may facilitate such utility assistance.

[15] https://federalfleets.energy.gov/FleetDASH.
[16] https://www.energy.gov/eere/femp/articles/electric-vehicle-utility-finder-ev-u-finder.

GSA Government-wide acquisition solutions: Agencies should purchase EVSE through GSA's Blanket Purchase Agreements (BPAs)[17] and through GSA Advantage.[18] GSA's indefinite delivery, indefinite quantity (IDIQ)[19] contracts, which will provide design-build construction services for EVSE installation, are expected to be available in the summer of 2022.

Performance contracts: In certain situations, agencies may be able to use energy savings performance contracts (ESPCs), utility energy service contracts (UESCs), and DOE's Assisting Federal Facilities with Energy Conservation Technologies (AFFECT)[20] grant funding for EVSE installation projects that can be incorporated into broader facility upgrades (see section 4.4.8).

Other non-Federal and local resources: Agencies also may be able to access resources (e.g., state and local grant programs), planning tools, and technical support from state and local governments, not-for-profit organizations, regional coalitions, and other organizations, such as local Clean Cities coalitions.

EVSE for leased space: In leased facilities or office space, agencies should work with building owners and operators to expand EVSE availability for charging fleet vehicles. Agencies should use the forthcoming GSA guidance on EVSE deployment in leased spaces to expand EVSE availability in their leased facilities.

EVSE operations: Agencies must separately track energy used for vehicle charging and overall facility energy consumption. Vehicle charging energy data is best captured directly from networked ("smart") EVSE installed at the facility or through standalone electric meters or submeters. Submeters dedicated to EVSE loads can complement networked EVSE. Networked EVSE or submetering allows facility and fleet managers to coordinate on managed charging, which involves charging of ZEVs at non-peak times, when possible, to avoid peak pricing, demand charges, and periods of high grid-emission intensity. Agencies also may develop the energy data through manual estimation of electricity used by each vehicle at a facility using the vehicle's fuel economy rating and electric miles traveled via DOE's Calculator for Estimating Electricity Consumption in Federal Electric Vehicles,[21] if necessary, although this method does not allow for directly managing charging. Whichever method is employed, it should allow agencies to isolate the energy used for fleets from facility energy use so agencies can properly account for electricity usage for their facilities and fleets.

4.3.6 Fleet Management Practices to Support and Accelerate ZEV Deployment

Telematics: Telematics are technology-based hardware tools that collect and record vehicle operational data. Manufacturers can install telematics in vehicles as standard equipment, or

[17] https://www.gsa.gov/buying-selling/purchasing-programs/gsa-multiple-award-schedule/schedule-features/blanket-purchase-agreements.
[18] https://gsaschedule.com/marketing-your-gsa-schedule/gsa-advantage.
[19] https://www.gsa.gov/small-business/register-your-business/explore-business-models/indefinite-delivery-indefinite-quantity-contracts#:~:text=Indefinite%20delivery%2C%20indefinite%20quantity%20contracts%20provide%20for%20an%20indefinite%20quantity,require%20during%20the%20contract%20period.
[20] https://www.energy.gov/eere/femp/assisting-federal-facilities-energy-conservation-technologies-affect-federal-agency-call.
[21] https://www.energy.gov/sites/default/files/2020/12/f81/ev-electricity-in-gge-calculator.xlsx.

telematics can be added as an aftermarket product. Consistent with section I.C.3.b of M-22-06, agencies must deploy telematics and collect and use fleet operational data to inform fleet planning and vehicle acquisition strategies, as well as ZEV and EVSE operational management.

- *Deploying telematics:* GSA policy requires telematics on all newly acquired GSA-leased vehicles for the Federal Government, and GSA intends to install telematics on all pre-existing leased vehicles by 2026. All other agencies must deploy telematics on agency-owned vehicles on at least the same timeline to provide data necessary for consistent, comprehensive, and effective planning for ZEV acquisitions and deployment, and to facilitate overall fleet management. Agencies should acquire telematics for their agency-owned vehicles through GSA to take advantage of volume procurement opportunities and ensure system compliance with standardized data reporting requirements and cybersecurity protocols.

- *Waivers:* Agencies must install telematics for all fleet vehicles, unless an agency determines that telematics on a specific vehicle presents risks to national security or law enforcement operations. Agencies should develop criteria and a process for waiving vehicles from telematics requirements when necessary. GSA has an existing waiver process for leased vehicles with which agencies should align when developing their own waiver process for agency-owned vehicles.

- *Telematics data requirements:* Agencies must collect and consult telematics data in developing plans for vehicle replacement, ZEV deployment, FAST reporting, and other aspects of fleet management that support achievement of ZEV goals. To inform fleet management planning, agencies and GSA must ensure that telematics collect vehicle diagnostics at the asset level (i.e., at the vehicle level) for LDVs, MDVs, and HDVs, including fuel consumption or energy use, daily miles traveled, and idling.

Fleet Management Information Systems (FMIS): Under 41 CFR 102-34.340, agencies must have a FMIS in place at the department or agency level. Agencies should configure their FMIS to accept the importation of data obtained through telematics at the asset level. Additionally, the agency FMIS should have the capability to export that asset-level data to government-wide reporting systems, such as FAST.

Optimizing fleet size: Eliminating underused vehicles from the fleet, or "rightsizing," can reduce emissions and cut unnecessary fleet costs. Consistent with the goals of E.O. 14057 and section I.C of M-22-06, agencies must pursue strategies that reduce to the minimum required to meet current mission needs the total number of vehicles in the fleet, and vehicle size and composition. GSA's Federal Management Regulation (FMR) section 102-34.50 requires that Federal agencies establish and document a structured vehicle allocation methodology (VAM) to determine the appropriate size and number of motor vehicles in the fleet, and identify opportunities to eliminate unnecessary vehicles, right-size vehicles for their missions, and deploy AFVs (including ZEVs) effectively.

Employee and visitor ZEV charging: Planning for charging infrastructure for use by visitors, employees, and other authorized users, as appropriate, in conjunction with planning for agency fleet vehicles, should be part of a comprehensive and efficient EVSE deployment strategy.

Agencies may allow government-owned vehicles (GOV) and privately owned vehicles (POV) to share EVSE, and may install dedicated EVSE for employees or visitors, including from other agencies. Agencies must ensure that such shared charging systems use meters which can enable separate tracking of GOV and POV charging and energy consumption ensuring the host agency has accurate transparency and accountability of its charging systems. Under the 2015 Fixing America's Surface Transportation Act, agencies must recoup the cost of charging infrastructure and the charging of personal vehicles by employees and other authorized users with a few exceptions (42 U.S.C. 6364).

DOE-FEMP's Federal Workplace Charging Program Guide[22] provides resources for Federal agencies in developing policies and programs for workplace charging, including reimbursement mechanisms and policy language to define requirements for charging POVs on government-owned or -leased property.

Home-to-work considerations: To achieve a 100 percent ZEV fleet, vehicles authorized for home-to-work use will require regular access to charging infrastructure at or near employee homes. In many cases, agencies may have authority to reimburse employees for work-related expenses, including vehicle fuel, which includes electricity for ZEVs. To the extent that an agency conducts a necessary expense analysis and determines that its appropriated funds are available for such purposes, for employees with authorized home-to-work government vehicles the agency may directly pay the employees or their installation contractors for the costs of (1) installing or repairing an agency-owned charging station at employee homes, (2) upgrading their existing electrical equipment to allow for charging, and (3) electricity to charge such vehicles. DOE-FEMP must develop technical resources and best practices for collecting and reporting the necessary data when implementing EVSE to support home-to-work use.

Promoting transportation alternatives: To drive reductions in fleet GHG emissions and support optimal fleet composition required by section I.C of M-22-06, agencies must pursue transportation alternatives that reduce the need for fleet vehicles, including ride sharing, car sharing, shuttle services, public transportation options, bicycles (including e-bikes and cargo bicycles) and associated infrastructure, electric scooters, and bikeshare systems.

4.3.7 Non-Fleet Vehicles and Equipment

To minimize scope 1 emissions and consistent with section 204 and the intent of section 205 of E.O. 14057, agencies also must replace, to the extent practicable, other petroleum-consuming vehicles and equipment with zero-emission models as they become available on the market. This includes deploying, as appropriate:

- Zero-emission motorcycles, dirt bikes, and electric bicycles;
- Non-highway vehicles, such as non-tactical aircraft, boats, ATVs, and snowmobiles; and
- Equipment, such as forklifts, lawnmowers, leaf blowers, and generators.

[22] https://www.energy.gov/eere/femp/articles/federal-workplace-charging-program-guide.

4.3.8 State, Tribal, and Local Government Fleets

Section 509(b) of E.O. 14057 directs GSA to explore mechanisms to extend contracting options for ZEVs and EVSE for use by Tribal, State, and local governments. DOT and DOE's Joint Office of Energy and Transportation should explore how the agencies' grant, minimum standards and requirements, and technical assistance programs, including DOE-FEMP's tools and trainings, could facilitate a ZEV transition in Tribal, State, and local government fleets.

4.3.9 Planning, Reporting, and Target Setting

Annual Zero-emission Fleet Strategic Plan: Consistent with section I.C.2 of M-22-06, each agency that owns, operates, leases, or otherwise controls 20 or more automobiles or motor vehicles (including light-, medium-, and heavy-duty vehicles) located in the United States must develop and submit to CEQ and OMB an annual Zero-emission Fleet Strategic Plan. The plan must include proposed annual targets for LD and MD/HD ZEV acquisitions through FY 2027 and FY 2035, respectively, and for EVSE deployment. CEQ and OMB will review plans and approve targets.

In coordination with OMB, the Climate Policy Office, DOE, and GSA, CEQ will issue annual instructions and a template, as well as tools to model different ZEV adoption rates, set targets, determine associated EVSE requirements, and incorporate capital planning considerations. The tools will include annually updated versions of the Zero-Emissions Vehicle Planning and Charging (ZPAC) Tool developed in 2022 in collaboration with DOE and GSA. CEQ encourages agencies to use the ZPAC Tool and DOE-FEMP's FleetDASH Alternative Fuel Vehicle (AFV) ZEV Screening Tool to develop their Zero-emission Fleet Strategic Plans, create vehicle acquisition plans, and make vehicle-specific replacement decisions.

Fleet data and reporting requirements: Consistent with section I.C. of M-22-06, agencies must ensure that all asset level (or vehicle level) fleet data are properly accounted for and reported annually through FAST. Accurate asset level data are critical to effective fleet management, vehicle use analysis, and tracking progress toward ZEV goals. In coordination with CEQ and OMB, DOE must update FAST reporting to capture data necessary for tracking ZEV acquisition and operations beginning no later than the FY 2024 reporting cycle.

CEQ and OMB will track ZEV and EVSE implementation and progress data on an ongoing basis, including monthly data on ZEV orders from GSA, as part of monitoring implementation progress toward the ZEV goal.

Actions to improve data accuracy: Beginning with the FY 2023 FAST reporting cycle and in coordination with GSA, DOE must provide an annual report to each Agency CSO and Fleet Manager, as well as CEQ and OMB, identifying any data quality issues with that year's FAST submission and making recommendations about priority areas for agency improvement in the subsequent reporting year.

No later than the end of FY 2024, agencies must provide data for all GSA-leased and agency-owned vehicles to DOE-FEMP's FleetDASH,[23] which facilitates monitoring and analyzing of

[23] Agencies may determine not to include data for specific agency vehicles for security reasons.

vehicle and fuel use, fueling and charging. FleetDASH can assist agencies in efforts to maximize alternative fuel use (include operating PHEVs on electricity, rather than gasoline) and identify candidates for replacement with a ZEV.

EVSE data and reporting requirements: No later than January 2023, DOE must update FAST to enable agency reporting on EVSE planning and installation, and any associated data needed by CEQ and OMB to assess progress on EVSE deployment, including the number of ZEVs supported by the EVSE (including GOV and POV) and the ability to enter data for mobile charging units, employee and visitor charging, and home-to-work charging. Agencies also must report on the status of EVSE projects on a quarterly basis to CEQ and OMB through FAST. The responsibility for reporting data rests with the agency that contracts for or otherwise manages the installation process for the EVSE, even if other agencies will use the EVSE. Until FAST is updated, CEQ will provide a template for quarterly EVSE progress reporting to CEQ and OMB, due June 30, September 30, and December 31, 2022.

4.3.10 Further Guidance and Resources

- FEMP Fleet Resources[24] provides resources and tools covering various aspects of ZEV and EVSE deployment and management.

- GSA Fleet ZEV and EVSE Resources[25] provides current information on GSA's ZEV offerings and links to EVSE offerings.

4.3.11 Implementation Actions

Within 30 days of the issuance of these Instructions:

- In coordination with CEQ and OMB, DOE and GSA must identify additional data parameters to be added to FAST to meet ZEV and related reporting requirements.

- In coordination with CEQ and OMB, GSA must review its Vehicle Allocation Methodology (VAM) process and instructions to identify actions that may be necessary to integrate ZEV priorities and strengthen fleet planning and accountability.

- In coordination with CEQ and OMB, GSA must evaluate fleet-related Federal Management Regulations and associated bulletins to identify actions that may be necessary to integrate ZEV priorities and goals.

Within 90 days of the issuance of these Instructions:

- In coordination with CEQ, GSA and DOE must develop a coordinated and comprehensive training and education plan for personnel involved in fleet acquisition or operation, that addresses ZEV and EVSE planning, prioritization, and operation.

[24] https://www.energy.gov/eere/femp/electric-vehicles-federal-fleets.
[25] http://www.gsa.gov/AFV.

- GSA must issue guidance and best practices for EVSE deployment at GSA facilities. GSA also must update its facilities standards (P100)[26] to ensure that Federal buildings are built and renovated to support current and future technologies and levels of electrification within the Federal fleet. Agencies with direct leasing authority should consider GSA's forthcoming guidance in developing or updating agency-specific policies and guidance, such as DOD's Unified Facilities Criteria,[27] for EVSE at agency owned facilities and leased facilities.

Within one year of the issuance of the Instructions:

- DOE must develop a technical manual and updated online resources on EVSE financing, planning, and deployment; and

- DOE, in coordination with other appropriate agencies, must develop and update, as needed, best practices and case studies on (1) alternatives to traditional mobility solutions and vehicle operations for Federal facility fleet operations, such as ride-sharing, car-sharing, and shuttle services, and (2) electrification of motorcycles, non-highway vehicles, and other mobile non-tactical equipment.

[26] https://www.gsa.gov/real-estate/design-construction/engineering-and-architecture/facilities-standards-p100-overview.
[27] https://www.wbdg.org/ffc/dod.

4.4 Net-Zero Emissions Buildings, Campuses, and Installations

4.4.1 Overview

The Federal Government owns, operates, and leases space in more than 285,000 energy-using buildings comprising more than 2.8 billion gross square feet (GSF).[28] Federal facilities, which encompass buildings, campuses, and installations, drive more than 80 percent of Federal scope 1 and 2 emissions from standard operations[29] and are the largest contributing sector of emissions from standard Federal operations.[30] Federal facilities generate emissions from operations primarily through (1) stationary combustion, also known as direct scope 1 emissions[31]; and (2) purchased energy, or indirect scope 2 emissions.[32] Approximately one third of Federal facility emissions originate from scope 1 sources and two thirds originate from scope 2 sources.

E.O. 14057 establishes a goal of a net-zero emissions across the Federal Government's building portfolio by 2045. Federal facilities serve as a nexus to reduce emissions while improving energy efficiency and strengthening resiliency and sustainability. As part of a comprehensive, holistic approach to sustainability, agencies should integrate building decarbonization strategies, CFE procurement, and installation and operation of vehicle charging infrastructure to support the government-wide goal of net-zero emissions by 2050.

While activities in facilities also contribute to scope 3 emissions (e.g., emissions from waste generation or emissions from facilities under fully serviced lease where the lessor pays for utilities) and embodied carbon emissions (e.g., emissions from building construction materials' manufacturing and transportation), the requirements and strategies in this section focus on scope 1 and 2 operating emissions resulting from facility energy use. Embodied carbon and scope 3 emissions beyond Federal lease actions are addressed in sections 4.1.5, 4.4.12 and 4.6.3 of these Instructions.

While the primary focus of achieving net-zero emissions buildings is cutting fossil fuel consumption, environmental stewardship and resilience are critical elements of a holistic building design, construction and operations strategy. Water reduction and waste reduction also are important areas for consideration, which are addressed in section 4.4.5 and section 4.5.4

[28] GSA, *Federal Real Property Public Data Set* (2020), https://www.gsa.gov/policy-regulations/policy/real-property-policy/asset-management/federal-real-property-profile-frpp/federal-real-property-public-data-set.
[29] DOE, *Comprehensive Annual Energy Data and Sustainability Performance* (2022), https://ctsedwweb.ee.doe.gov/Annual/Default.aspx?ReturnUrl=%2fAnnual%2fReport%2fReport.aspx.
[30] Most emissions from the facility sector are "standard operations emissions" and are subject to GHG emissions reduction targets. Subject to agency discretion, excluded from GHG reduction targets are emissions from non-standard operations such as vehicles, vessels, aircraft, and other equipment used by Federal Government agencies in combat support, combat service support, tactical or relief operations, training for such operations, law enforcement, emergency response, or spaceflight (including associated ground-support equipment). Non-Standard operations also include generation of electric power produced and sold commercially to other parties. *See* CEQ, *Federal Greenhouse Gas Accounting and Reporting Guidance*, 9–15 (2016), https://www.sustainability.gov/pdfs/federal_ghg%20accounting_reporting-guidance.pdf.
[31] Stationary combustion is primarily associated with combustion of fossil fuels (gas) for generation of electricity, heat, cooling or steam in stationary, on-site sources such as boilers, furnaces, appliances, and equipment.
[32] Purchased energy is associated with the purchase of electricity, steam, heat, or cooling.

respectively. Technologies and systems that reduce emissions and fossil fuel consumption as well as increase system resilience and reliability are highly encouraged.

Planning at the building, campus, and installation level: While the goals and requirements of this section are framed as building-level goals, in many cases, agencies can and should plan at the campus or installation level, in conjunction with efforts to implement requirements at the building level. For example, agencies should leverage projects that target facility-level efficiency improvements and electrification alongside on-site energy generation and demand storage, and GHG reduction to achieve net-zero emissions at their campuses and installations.

Space optimization: Reducing an agency's overall footprint drives emissions reductions, and promotes energy and water efficiency and waste reduction. As part of a comprehensive portfolio management and transformation strategy, agencies first should consider space consolidation and optimization. Agencies should consider lower occupancy, underused facilities with high energy use intensities (EUI) (buildings that are less energy efficient) when making decisions on building consolidation or disposition (e.g., disposal of real property, Federal transfers, public benefit conveyances, and demolitions). Agencies should consider emissions reduction strategies in conjunction with other real property actions consistent with the President's Management Agenda,[33] the Federal Property Management Reform Act,[34] OMB Memorandum M-20-10, *Issuance of an Addendum to the National Strategy for the Efficient Use of Real Property*,[35] and the *National Strategy for the Efficient Use of Real Property 2015-2020*,[36] which all aim to improve the use of federally owned buildings and the cost-effectiveness and efficiency of the government-wide portfolio.

Prioritizing efficiency and electrification: To achieve the emissions and energy reductions goals and requirements, and drive life-cycle cost-effective, long-term solutions, agencies should prioritize energy efficiency and electrification in planning for buildings, campuses, and installations. Agencies should use holistic approaches that consider cross benefits where efficiency can facilitate and support electrification, and vice versa, and design projects so that interventions work together to support achievement of goals. Similarly, the goals and requirements in this section work together to provide a comprehensive, data-driven, strategic approach.

4.4.2 Existing Facilities Goals and Requirements

The vast majority of emissions from Federal buildings between now and 2045 will come from existing buildings that are already part of the Federal portfolio. Reducing emissions from existing facilities through improved efficiency and electrification combined with CFE is critical to achieve a net-zero emissions buildings portfolio. Increasing water efficiency is an integral part

[33] OMB, The Biden-Harris Management Agenda Vision, 20–22 (2021), https://assets.performance.gov/PMA/Biden-Harris_Management_Agenda_Vision_11-18.pdf.
[34] Federal Real Property Management Reform Act of 2016, Pub. L. 114–318, 130 Stat. 1612 (Dec. 16, 2016).
[35] https://www.whitehouse.gov/wp-content/uploads/2020/03/M-20-10.pdf.
[36] https://obamawhitehouse.archives.gov/sites/default/files/omb/financial/national-strategy-efficient-use-real-property.pdf.

of an emissions reduction strategy, as well as ensuring Federal facilities make the best use of natural resources and support resilience.

To reduce emissions and improve efficiency of existing facilities, E.O. 14057 establishes three outcome-focused performance targets and three strategy-based performance targets.

Outcome-based Targets

1. Reducing Building Portfolio Emissions
2. Increasing Energy Efficiency
3. Increasing Water Efficiency

Strategy-based Targets

4. Electrifying Buildings through the Federal Building Performance Standard
5. Implementing Deep Energy Retrofits
6. Leveraging Performance Contracting

The outcome-based targets identify high-level pathways for achieving 2045 goals. The strategy-based targets focus on tactical approaches to achieve the outcome-based targets. By design, these targets are not intended to be an exhaustive set of targets for building performance; they focus on a set of critical strategies and results necessary to achieve the ambitious government-wide emissions goals and targets set forth in E.O. 14057.

Recognizing that public and private sector organizations are in the beginning stages of comprehensive decarbonization efforts, CEQ will continue to coordinate with DOE, GSA, EPA and other relevant agencies to develop tools and technical resources to assist agencies in developing decarbonization plans and strategies and setting the targets indicated above.

In accordance with section I.D.3 of M-22-06, agencies must ensure capital planning efforts and facility operating plans are aligned with agency strategies to achieve reduction targets.

4.4.3 Existing Facilities: Reducing Emissions

Policy:

Through a coordinated whole-of-government approach, the Federal Government shall use its scale and procurement power to achieve . . . a net-zero emissions building portfolio by 2045, including a 50 percent emissions reduction by 2032 . . . . (Sec. 102(a)(iii) of E.O. 14057)

Each agency shall achieve net-zero emissions across its portfolio of buildings, campuses, and installations by 2045 and reduce greenhouse gas emissions by 50 percent from buildings, campuses, and installations by 2032 from 2008 levels, prioritizing improvement of energy efficiency and the elimination of onsite fossil fuel use. (Sec. 205(a) of E.O. 14057)

Progress metrics:

Target**:**	Net-**zero emissions building portfolio by 2045, including 50 percent reduction in GHG by 2032 from 2008 levels.**
Metric:	Reduction in annual scope 1 and 2 emissions (MT CO2e).
Progress Milestone:	Agencies will set annual emissions reduction targets in consultation with CEQ and OMB, beginning with FY 2023.

A Federal net-zero emissions portfolio under E.O. 14057 is one where, at an agency level, the targeted scope 1 and scope 2 GHG emissions from all facilities are reduced by the maximum extent feasible, and then the remaining emissions are balanced so the annual emissions equal zero. To achieve this overarching goal, agencies must prioritize efficiency and electrification, in conjunction with strategies to use CFE consistent with section 4.2 of these Instructions. As CEQ and OMB have not yet provided guidance on the appropriate use of emissions removal technologies, agencies should not employ emissions removal strategies or offsets at this time.

Setting agency targets: Consistent with section 201 of E.O. 14057, agencies must propose agency-specific targets for reductions in building emissions and identify annual progress targets. In coordination with OMB, CEQ will provide instructions for proposing and submitting targets for review and approval. DOE must provide tools, data analysis, and technical support to assist agencies in setting targets, taking into account each agency's existing portfolio. Agencies will have unique opportunities and challenges in reducing scope 1 and 2 emissions. Agencies that make significant progress and meet their 2030 targets at an accelerated pace must revise targets to promote continued progress toward the net-zero goal.

Priority strategies: Agencies should prioritize energy efficiency and the elimination of scope 1 emissions from on-site fossil fuel use through building electrification. Agencies should bundle together efficiency and electrification as part of a coordinated strategy for portfolio management and emissions reductions. Agencies must prioritize emissions reductions whenever a retrofit, renovation, retuning, operations and maintenance measures, or space reconfiguration is being planned. Retrofits to improve energy efficiency are key opportunities to reduce emissions, reduce operating costs, support the site's mission, and promote the health, wellbeing and productivity of occupants.

4.4.4 Existing Facilities: Energy Efficiency

Policy:

Each agency shall increase facility energy efficiency and water efficiency and shall establish targets for fiscal year 2030 for agency-wide facility energy use intensity and potable water use intensity, with consideration of performance benchmarks for categories of building types (e.g.,

hospitals, office buildings) and the composition of the agency's building portfolio. (Sec. 206 of E.O. 14057)

Progress metrics:

Target:	Agency-specific energy use intensity (EUI) target for FY 2030.
Metric:	Site-delivered British thermal units (Btu) consumed per GSF per fiscal year (Btu/GSF/FY).
Progress Milestone:	Agencies will set annual EUI targets beginning with FY 2023.

Energy efficiency is one of the most important strategies to reduce GHG emissions and operating costs from facility operations. The Federal buildings portfolio has made extraordinary progress in the prior 2 decades, reducing EUI by more than 26 percent.

For continued progress, agencies should implement traditional energy efficiency measures (e.g., lighting upgrades, controls optimization, increasing insulation, equipment upgrades) in conjunction with efficient electrification and demand management, also known as demand flexibility, or grid-interactive efficient building (GEB)[37] measures. Demand management is an increasingly important strategy for Federal buildings to reduce utility costs and GHG emissions and facilitate the achievement of 24/7 CFE. Additionally, demand management supports the affordability, resilience, environmental performance, and reliability of the U.S. electric power system. To provide demand management, agencies should implement measures that reduce energy use at specific times of the day that have high energy costs, high GHG emissions, or both.

When evaluating potential measures for implementation using either performance contracts or appropriations, agencies should couple long payback period measures with short payback period measures to incorporate more upgrades as part of a comprehensive, life-cycle cost-effective project.

Setting agency targets: Consistent with sections 201 and 206 of E.O. 14057, agencies must propose an FY 2030 EUI target and identify annual progress targets. In FY 2022, CEQ, in coordination with OMB, will provide instructions for proposing and submitting targets for review and approval. DOE-FEMP must provide tools, data analysis, and technical support to assist agencies in setting EUI targets.

Priority strategies: To achieve energy goals and reduce building emissions, agencies should prioritize improving the performance of high-EUI facilities where the agency has a long-term

[37] GEBs are energy efficient buildings with smart technologies characterized by the active use of distributed energy resources (DERs) to optimize energy use for grid services, occupant needs and preferences, and cost reductions in a continuous and integrated way. In doing so, GEBs can play a key role in promoting greater affordability, resilience, environmental performance, and reliability across the U.S. electric power system. *See* DOE, *Grid-Interactive Efficient Buildings*, https://www.energy.gov/eere/buildings/grid-interactive-efficient-buildings.

mission need. As part of target setting, agencies should assess all applicable planned[38] and in-progress construction and renovation projects to maximize energy efficiency opportunities. Agencies also should consider consolidation and disposition[39] as a strategy for increasing the productive use of square footage while reducing total energy use.

4.4.5 Existing Facilities: Water Efficiency

Policy:

Each agency shall increase facility energy efficiency and water efficiency and shall establish targets for fiscal year 2030 for agency-wide facility energy use intensity and potable water use intensity, with consideration of performance benchmarks for categories of building types (e.g., hospitals, office buildings) and the composition of the agency's building portfolio. (Sec. 206 of E.O. 14057)

Progress metrics:

Target:	Agency-specific potable water use intensity (WUI) target for FY 2030.
Metric:	Annual agency potable WUI: gallons (Gal) per GSF per fiscal year (Gal/GSF/FY).
Progress Milestone:	Agencies will set annual WUI targets, beginning with FY 2023.

Setting agency targets: Consistent with section 201 and 206 of E.O. 14057, agencies must propose an FY 2030 WUI target and identify annual progress targets. In FY 2022, CEQ, in coordination with OMB, will provide instructions for proposing and submitting targets for review and approval. DOE-FEMP must provide tools, data analysis, and technical support to assist agencies in setting WUI targets.

Priority strategies: To reduce water consumption and meet WUI targets, agencies should develop comprehensive strategies to optimize water use across the agency's facilities. Agencies should use metered data to help identify opportunities for water reduction and process improvements. In developing a strategy to meet water reduction goals, important elements include information on current water use by major use type to identify water intensive uses, a water metering strategy that identifies and prioritizes buildings for metering,[40] and a plan to implement technological and institutional best practices to increase water efficiency and reduce water consumption. Common

[38] Agencies must conduct comprehensive energy and water audits every 4 years pursuant to section 432 of EISA 2007 and implement life-cycle cost-effective measures within 2 years from evaluation pursuant to section 1001 of the Energy Act of 2020. 42 U.S.C. 8253(f)(3).
[39] Facility disposition includes sales, Federal transfers, public benefit conveyances, and demolitions.
[40] Agencies must install energy and water meters for facilities pursuant to section 432 of EISA 2007 and section 1001 of the Energy Act of 2020. 42 U.S.C. 8253(e).

best practices include the installation of high efficiency plumbing fixtures, advanced irrigation controls, water-efficient irrigation and landscape maintenance practices, advanced cooling tower controls, and equipment replacements of water intensive applications (e.g., kitchen, medical, and laboratories).

Use of Alternative Water: Agencies should strategically identify sources of alternative water to offset the use of freshwater supply. Alternative water is water from non-freshwater sources, such as on-site harvested rainwater and stormwater, harvested sump pump or foundation water, gray water, air-cooling condensate, reject water from water purification systems, reclaimed wastewater, or water derived from other water reuse strategies.[41] In calculating and reporting progress toward WUI targets, agencies may deduct alternative water used to offset potable water consumption (including both purchased and on-site produced alternative water).

4.4.6 Existing Facilities: Building Performance Standards

Policy:

To prioritize reductions in scope 1 greenhouse gas emissions, . . . agencies should use the Federal building performance standards . . . . (Sec. 205(b) of E.O. 14057)

[T]he Chair of CEQ, in consultation with the Director of OMB, shall . . . issue building performance standards to support achievement of net-zero emissions in the Federal building portfolio . . . . (Sec. 510(b)(ii) of E.O. 14057)

Progress metrics:

Target**:**	Meet the building performance standards (BPS) by FY 2030.
Metric:	Cumulative percentage of portfolio by floor area by GSF that meets the BPS.
Progress Milestone:	Agencies will set annual BPS targets in consultation with CEQ and OMB, beginning with FY 2024.

The Federal BPS targets deep reductions of scope 1 emissions from Federal facilities through building electrification. Electrification efforts should focus on equipment and appliances that typically use on-site fossil fuels, including space heating, water heating, clothes drying, and cooking. Electrification efforts should be designed in coordination with deep energy retrofit efforts.

Setting agency targets: The forthcoming Federal BPS will outline requirements for meeting the FY 2030 target. In FY 2022, CEQ will issue instructions for agencies to establish a baseline

[41] *See* DOE-FEMP, *Best Management Practice #14: Alternative Water Sources*, https://www.energy.gov/eere/femp/best-management-practice-14-alternative-water-sources.

inventory of buildings eligible for electrification, composed of all EISA-covered,[42] government-owned facilities that are a source of scope 1 emissions, i.e., that consume fossil fuels on-site.

4.4.7 Existing Facilities: Deep Energy Retrofits

Policy:

To reduce scope 1 and 2 greenhouse gas emissions, . . . to achieve net-zero emissions buildings, agencies shall . . . pursue building electrification strategies in conjunction with carbon pollution-free energy use, deep-energy retrofits, whole-building commissioning, energy and water conservation measures, and space reduction and consolidation . . . . (Sec. 205(c)(i) of E.O. 14057)

Agencies must complete deep energy retrofits, prioritizing reductions of on-site- emissions to achieve net-zero or near net-zero emissions at the building level where technically practicable, in at least 30 percent of covered facilities, as defined in section 432 of the Energy Independence and Security Act of 2007, by 2030. (Sec. I.D.3 of M-22-06)

Progress metrics:

Target:	Implement deep energy retrofits in at least 30 percent of owned covered facilities by FY 2030.
Metric:	Percentage of GSF that completed deep energy retrofits, starting from FY 2019.
Progress Milestone:	Agencies will set annual deep energy retrofit targets beginning with FY 2023.

Criteria for deep energy retrofits: A deep energy retrofit leverages whole building approaches and integrative design to maximize energy efficiency and emissions reductions. Under E.O. 14057, a deep energy retrofit is a facility retrofit or renovation project that reduces annual site EUI by at least 40 percent from a pre-renovation, FY 2019 baseline.[43] A series of retrofit projects that start after FY 2019 and are implemented over several years may qualify as a deep energy retrofit if together, they result in at least a 40 percent reduction in EUI from a FY 2019 baseline. An agency may count a deep energy retrofit project toward the goal when it has completed the design phase, or, for performance contracts, at the close of the Investment Grade Audit phase.

Agencies should follow the same methodology used to calculate the EUI goals to calculate deep energy retrofit EUI reductions, including process load and national security exemptions. CEQ will provide additional guidance on exceptions for separately metered process loads as well as renewable energy allowances in the EUI Target Setting Tool instructions. For instance, agencies

[42] Covered facilities are defined in section 432 of EISA. 42 U.S.C. 8253(f)(2).
[43] FY 2019 represents the most recent year of pre-pandemic levels of facility operations.

may include a deduction for on-site renewable energy in calculating the EUI. However, agencies cannot include CFE and EAC purchases as part of the EUI calculation.

Bundling energy conservation measures: A deep energy retrofit can combine multiple individual measures, "bundling" the implementation costs and expected returns in a life-cycle cost-effective approach to increase project impact. For example, equipment electrification bundled with envelope improvements (e.g., adding wall or roof insulation or upgrading windows) can allow for smaller sized and less expensive equipment, reduced energy, demand, and operating costs, improved occupant comfort, and reduced emissions. Agencies should couple long-term payback measures, such as envelope improvements, with more rapid payback measures, such as lighting and control upgrades, to create a comprehensive, life-cycle cost-effective project that reduces energy use.[44]

Priority strategies: Agencies should integrate measures identified through energy and water audits when planning deep energy retrofits and use performance contracting where feasible. In addition to energy efficiency, agencies should prioritize building electrification and GEB strategies in capital planning and retrofit projects. Agencies should incorporate on-site CFE, on-site energy storage, and building energy management systems to provide data analytics for system diagnostics and to ensure persistence of savings. To further reduce grid energy use and costs, and to provide localized, CFE generation, agencies should install on-site renewable energy to the maximum extent feasible.

4.4.8 Existing Facilities: Leveraging Performance Contracting

Policy:

To reduce scope 1 and 2 greenhouse gas emissions, . . . to achieve net-zero emissions buildings, agencies shall . . . use performance contracting, in accordance with the provisions of section 1002 of the Energy Act of 2020 (Public Law 116-133, division Z), to improve efficiency and resilience of Federal facilities, deploy clean and innovative technologies, and reduce greenhouse gas emissions from building operations. (Sec. 205(c)(iv) of E.O. 14057)

As part of portfolio planning, agencies should seek opportunities to use direct funding, as authorized, in combination with performance contracts to increase project benefits, enable deployment of innovative technologies, and meet the goals and targets established under the E.O. (Sec. I.D.4 of M-22-06)

Overview: Performance contracts are public-private sector partnerships between an agency and either an energy services company (ESCO) or a utility to implement energy and water efficiency improvements in Federal facilities. Performance contracting is an important tool for improving efficiency and resilience of Federal facilities, deploying clean and innovative technologies, and accelerating emissions reductions from building operations. Agencies also can use performance contracts to advance building electrification, which is critical to achieving building emissions reduction goals.

[44] Additional resources on deep energy retrofits, including case studies can be found through GSA's SF Tool. GSA, *Cost-Effective Upgrades Tool*, https://sftool.gov/plan/upgrades/selections.

Progress metrics:

Target:	Agency-specific target for scope 1 and 2 emissions reductions delivered through performance contracting by FY 2030.[45]
Metric:	Annual emissions (MTCO2e) reduction expected as a result of projects awarded during the FY.
Progress Milestone:	Agencies will set interim milestones for FY 2024 and FY 2027.

To meet the goals of E.O. 14057, agencies must develop a performance contracting strategy and integrate it into comprehensive facility portfolio planning and emissions reduction efforts. These strategies reinforce the requirements established in the Energy Act of 2020, which requires each Federal agency to use performance contracting to address at least 50 percent of life-cycle cost-effective energy and water saving measures identified through evaluations.[46]

Under 42 U.S.C. 8253(f)(3), agencies must perform energy and water evaluations of covered facilities every 4 years to identify potential cost-effective energy- and water-saving measures. Energy and water evaluations can be accomplished through performance contracting development activities, such as preliminary assessments, and further refined through investment grade audits.

CEQ, in coordination with OMB, will develop target setting instructions and tracking guidance for agencies to use when establishing GHG emissions reduction delivered through performance contracting. To evaluate GHG impacts of energy-and water-saving measures, eProject Builder (ePB) provides a calculator.[47] GHG calculation methodology must be consistent with CEQ's *Federal Greenhouse Gas Accounting and Reporting Guidance*.[48]

Priority Strategies: Consistent with section 205(c)(iv), which directs agencies to use performance contracting in accordance with the provisions of section 1002 of the Energy Act of 2020, agencies should leverage performance contracting in combination with direct appropriations and bundle projects with varying payback times into a combined project that is life-cycle cost-effective and delivers maximum efficiency and electrification. Agencies should determine cost savings by including direct energy and water cost savings as well as other ancillary savings, such as reduced operations and maintenance costs. Under 42 U.S.C. 8287, agencies also can include, under certain circumstances, installation of EVSE in ESPCs.[49]

[45] The baseline for scope 2 emissions reductions from performance contracts must assume achievement of agency CFE goals.
[46] Energy Act of 2020 § 1002, 42 U.S.C. 8253(f)(4)(B).
[47] *See* DOE, eProjectBuilder, https://eprojectbuilder.lbl.gov/login (providing the ePB template and training).
[48] CEQ, *supra* note 30.
[49] *See* DOE-FEMP, Federal Energy Savings Performance Contracts: Frequently Asked Questions on the Scope of 42 U.S.C. § 8287 et. seq., 13–14 (Jul. 2022), https://www.energy.gov/sites/default/files/2022-07/espc_faq_42-usc-8287-0622.pdf.

Contracting Vehicles: Agencies can use the following Federal contracting vehicles and programs for performance contracting:

- *Energy Savings Performance Contract*: A contract between a Federal agency with an ESCO for a term of up to 25 years that provides energy and water cost savings with guaranteed performance. All Federal agencies may use DOE's ESPC indefinite delivery, indefinite quantity (IDIQ) contract to obtain ESCO services.

- *ESPC ENABLE*: A DOE-FEMP program available through GSA Supply Schedule SIN 334512 that provides a streamlined contracting process to implement small-scale projects with a limited scope in six months or less, focusing on highly cost-effective improvements such as lighting, water, heating, ventilation and air conditioning (HVAC) replacement or controls, solar photovoltaics (PV), and water conservation measures.

- *Utility Energy Service Contract (UESC)*: A limited-source contract between a Federal agency and a serving utility for energy management services, including energy and water efficiency improvements, demand-reduction services, and, potentially, EVSE.

- *Assisting Federal Facilities with Energy Conservation Technologies (AFFECT)*: A DOE-FEMP program that provides grants to agencies that can be combined with a performance contracting project for the development of energy and water efficiency projects, electrification and emissions reductions projects, and EVSE.

4.4.9 Existing Facilities: Cross-Cutting Strategies and Requirements

Project selection: To determine appropriate facilities for efficient electrification and deep energy retrofits, agencies should prioritize facilities with one or more of the following attributes:

- Long-term mission need;

- High operational EUI or WUI;

- High operation and maintenance costs;

- Larger footprint;

- Early in project design;

- In need of a major system replacement or with equipment at the end of its useful life;

- Utility tariffs or programs that could be used to further improve the life-cycle cost effectiveness of upgrades;

- Need for improved resilience;

- Expected space reconfiguration or occupancy change; and

- Older with aging infrastructure systems that are not considered for disposition.

Sustainable Federal facilities: Section 205(c)(iii) of E.O. 14057 requires all modernization and renovation projects at existing Federal facilities to implement CEQ's *Guiding Principles for Sustainable Federal Buildings* (*Guiding Principles*). For further details, refer to section 4.4.15.

EVSE: To facilitate achievement of ZEV goals, agencies should install necessary infrastructure and EVSE to support a fully electric fleet, consistent with agency mission, facility security, and technical feasibility. For further details on EVSE strategies and deployment, refer to section 4.3.5 of these Instructions.

4.4.10 New Construction and Modernization: Net-Zero Emissions

Policy:

To reduce scope 1 and 2 greenhouse gas emissions, . . . to achieve net-zero emissions buildings, agencies shall . . . design new construction and modernization projects greater than 25,000 gross square feet to be net-zero emissions by 2030 . . . . (Sec. 205(c)(ii) of E.O. 14057)

Agencies must ensure all new construction and modernization projects greater than 25,000 gross square feet entering the design phase in fiscal year 2022 and beyond are designed to be net-zero emissions by 2030, and where feasible, net-zero water and waste[50] *buildings.* (Sec. I.D.1 of M-22-06)

Progress metrics:

Target:	All new construction and modernization projects greater than 25,000 GSF must be designed to be a Federal net-zero emission building/facility by FY 2030.
Metric:	Annual percentage and gross floor area of Federal net-zero emissions new construction projects.
Progress Milestone:	Agencies to track progress annually.

As part of a comprehensive GHG emissions reduction strategy, agencies also should seek to apply the goal to projects less than 25,000 GSF, where practicable.

Definitions and Applicability:

- A *Federal net-zero emissions building* is an efficient, all electric building that is designed and operated so scope 1 and scope 2 GHG emissions from all facility energy use equal

[50] DOE, Federal New Buildings Handbook for Net Zero Energy, Water, and Waste (2017), https://www.energy.gov/sites/default/files/2019/12/f70/net_zero_new_buildings.pdf (providing additional information on net-zero energy, water, and waste buildings). Note that net-zero energy is not the same as net-zero emissions.

zero on an annual basis, when connected to on-site renewable energy or a regional grid that provides 100 percent CFE on a net annual basis.

- *Applicability to campuses and installations*: For the purposes of meeting the net-zero emissions requirement, an agency may consider all buildings within the set boundaries of a campus or installation net-zero emissions buildings if there is on-site renewable energy and grid-provided CFE sufficient to provide an annual balance of zero scope 1 and scope 2 GHG emissions for the campus or installation as a whole.

- *"Modernization project"* has the same meaning as in CEQ's *Guiding Principles* meaning a project that includes the comprehensive replacement or restoration of virtually all major systems, interior finishes (such as ceilings, partitions, doors, and floor finishes), and building features.

- *"Entering the design phase*" has the same meaning as "design for construction." Consistent with 10 CFR 435.2 and 433.2, "design for construction" means the stage when the energy efficiency and sustainability details (such as insulation levels, HVAC systems, water-using systems, etc.) are either explicitly determined or implicitly included in a project cost specification. This is often prior to the conceptual or schematic design phase.

- *Exclusion of fossil-fuel based process loads*: Under 10 CFR 433.2, "Process load" means the energy consumed in support of a manufacturing, industrial, or commercial process. Process loads do not include energy consumed maintaining comfort and amenities for the occupants of the building (including space conditioning for human comfort). Each agency must approve process load exclusions. An agency may not exclude a building in its entirety from the net-zero emissions building requirement; however, an agency may choose and approve to exempt specific process loads that use fossil-fuel if:

    - They are required for mission critical activities or for national security reasons; or

    - Electric and non-fossil alternatives are not available (e.g., backup generation, industrial manufacturing, unique lab research activities); and

    - These loads are separately metered or measured on a regular basis.

Priority strategies: Agencies must design and construct new buildings and modernization projects greater than 25,000 GSF to eliminate scope 1 GHG emissions from fossil fuel consumption through the efficient electrification of all equipment and appliances used for operational end uses,[51] including space conditioning, water heating, and cooking. New buildings and modernization projects must use energy efficiency and electrification paired with on-site renewable or clean energy to minimize demand for purchased electricity and scope 2 GHG emissions. Further, projects must employ GEB design strategies and on-site energy storage to provide demand flexibility in support of reducing costs for 24/7 CFE procurement.

[51] "Operational end uses" encompass lighting, space conditioning (heating/cooling), hot water generation/storage, cooking, and on-site (non-emergency/backup) energy generation.

4.4.11 New Construction and Modernization: Sustainable and Equitable Siting

Policy:

[T]he Chair of CEQ, in consultation with the Director of OMB, shall . . . consider issuing guidance for agencies to promote sustainable locations for Federal facilities and strengthen the vitality and livability of the communities in which Federal facilities are located. (Sec. 510(b)(iii) of E.O. 14057)

Consistent with E.O. 14057, M-22-06, and sections 201 and 219 of E.O. 14008, it is the policy of the Federal Government to promote sustainable locations for Federal workplaces and strengthen the vitality and livability of the communities in which they are located. When making siting decisions for Federal workplaces, agencies should advance:

- Sustainable land use that promotes conservation of natural resources, reduced GHG emissions, and increased resilience to the impacts of climate change
- Efficient use of and integration with existing local infrastructure;
- Expanded use of and broad access to public transportation;
- Equitable development that promotes environmental justice and spurs economic opportunity for disadvantaged communities that historically have been marginalized and overburdened by pollution and underinvestment; and
- Coordination and alignment with the development plans of Tribal, State, and local governments that advance these and related goals.

GSA, in consultation with EPA, DOT, HUD, DOE, and other appropriate agencies, must make recommendations to CEQ, identifying best practices in Federal facility siting to achieve these policy objectives. CEQ will consider issuing guidance on sustainable and equitable siting of Federal facilities.

Agencies should incorporate CEQ guidance into relevant agency-specific policies, procedures, and acquisition techniques to promote equity and sustainability in Federal facility siting.

4.4.12 New Construction and Modernization: Cross Cutting Strategies and Requirements

Sustainable Federal facilities: Under section 205(c)(iii) of E.O. 14057 and consistent with section 4.4.15 of these Instructions, agencies must ensure all new construction and modernization projects over 25,000 GSF are designed, constructed, and maintained to meet and, wherever practicable, exceed Federal sustainable design and operations principles for new construction and modernization projects in accordance with CEQ's *Guiding Principles*. Energy efficiency, electrification, on-site renewable energy, and on-site energy storage can support agency efforts to achieve both sustainable Federal building requirements and net-zero emissions goals.

Materials considerations: New construction and modernization projects should use sustainable materials and low embodied carbon materials, as determined by whole building life-cycle

assessments. Consistent with section 303 of E.O. 14057 and section II.3 of M-22-06, CEQ will issue a Buy Clean policy that identifies low-embodied carbon construction materials and criteria for Federal procurement.

Waste management: New construction and modernization projects must include requirements to reduce and divert construction and demolition debris from treatment and disposal facilities, landfill, combustion and incineration, and track diversion in accordance with section 4.5 of these Instructions.

EVSE: To facilitate achievement of ZEV goals, new construction and modernization projects should include installation of necessary infrastructure and EVSE to support a fully electric fleet, consistent with agency mission, facility security, and technical feasibility. For further details on EVSE strategies and deployment, refer to section 4.3.5 of these Instructions.

4.4.13 Leased Space: Green Leasing and Leasing in Net-Zero Emissions Buildings

Policy:

Each agency must ensure that all new (including new-replacing, succeeding, and superseding) leases entered into after September 30, 2023, for at least 25,000 rentable square feet in a building where the Federal Government leases at least 75 percent of the total building square footage are green leases. . . . New leases greater than 25,000 rentable square feet entered into after September 30, 2030, must be in net-zero emissions buildings. (Sec. I.F.2 of M-22-06)

Progress metrics:

Target:	All new lease solicitations issued after September 30, 2023 for at least 25,000 rentable square feet (RSF) where the Federal Government occupies at least 75 percent of a building are to be green leases.
Metric:	Percentage of new lease solicitations issued in the fiscal year that are green leases.
Progress Milestone:	Agencies to track compliance annually, starting with FY 2024.

Applicability: These requirements apply to both fully serviced leases and net leases, where the government leases space in a privately owned, commercial building. The net-zero lease requirement applies to leases for at least 25,000 RSF where the Federal Government leases at least 75 percent of the total building square footage, consistent with the green lease requirement. Meeting the green leasing target is the responsibility of the agency party to the commercial lease, which may be GSA for leases occupied by other Federal tenants under occupancy agreements.

Green Lease Definition: A green lease is a lease for space in a privately owned, commercial building that includes environmental and sustainability criteria for the building and operations to:

- Reduce energy, water, material resource use, and emissions;

- Improve indoor environmental quality;
- Reduce negative impacts on the environment;
- Increase the use of sustainable products and services;
- Increase reuse and recycling opportunities;
- Reduce impacts of transportation through building location;
- Consider the effects of the building on human health and the environment; and
- Track impacts of emissions, energy, water and waste.

Development of Leasing Guidelines

- *Green Leases:* GSA must issue green lease standards and guidelines to be applied to Federal leases, including provisions that promote a standard framework for lessor reporting of emissions, energy, water, and waste associated with the leased space. Agencies with independent leasing authority must incorporate the guidelines and language into agency-specific leasing policies and procedures.
- *Net-Zero Emissions Leases:* No later than the end of FY 2024, GSA, in consultation with CEQ, must develop standards and guidelines for net-zero emissions building leases, taking into account the qualities of a net-zero building as defined in these instructions. Agencies should seek to lease space in net-zero emissions buildings prior to the 2030 requirement to spur market development and innovation in the private sector.

4.4.14 Leased Space: Cross-Cutting Strategies and Requirements

Space utilization and consolidation: Agencies should optimize space usage to avoid unnecessary real property expenditures and reduce emissions, energy and water usage, and waste. Space planning should be consistent with the President's Management Agenda,[52] the Federal Property Management Reform Act,[53] OMB M-20-10,[54] and the National Strategy for the Efficient Use of Real Property,[55] which all aim to improve the use of federally owned buildings and the cost-effectiveness and efficiency of the government-wide portfolio.

Waste management: Under section I.F.2 of M-22-06, and consistent with section 207 of E.O. 14057, agencies must track municipal solid waste (MSW) generated from operations in

[52] OMB, *supra* note 33, at 20–22.
[53] Federal Real Property Management Reform Act of 2016, Pub. L. No. 114–318, 130 Stat. 1612 (Dec. 16, 2016).
[54] OMB Circular M-20-10, *Issuance of an Addendum to the National Strategy for the Efficient Use of Real Property* (Mar. 6, 2020), https://www.whitehouse.gov/wp-content/uploads/2020/03/M-20-10.pdf.
[55] OMB, National Strategy for the Efficient Use of Real Property 2015–2020 (Mar., 25, 2015), https://obamawhitehouse.archives.gov/sites/default/files/omb/financial/national-strategy-efficient-use-real-property.pdf.

leased spaces and construction and demolition (C&D) debris generated during tenant improvement.

Equitable siting: In selecting locations for leased space, agencies should apply the principles of sustainable and equitable siting set forth in section 4.4.11 of these Instructions.

EVSE: To facilitate achievement of ZEV goals, where applicable, leases should include necessary infrastructure and EVSE to support a fully electric fleet, consistent with agency mission, facility security, and technical feasibility. For further details on EVSE strategies and deployment, see section 4.3.5 of these Instructions.

4.4.15 Cross-cutting: Sustainable Federal Building Goals and Requirements

Policy:

To reduce scope 1 and 2 greenhouse gas emissions, . . . to achieve net-zero emissions buildings, agencies shall . . . implement CEQ's Guiding Principles for Sustainable Federal Buildings in building design, construction, and operation of all new Federal buildings and renovated existing buildings. . . . (Sec. 205(c)(iii) of E.O. 14057)

Each agency must ensure that all new construction and modernization projects greater than 25,000 square feet and entering the planning stage after January 31, 2022, are designed, constructed, and maintained to meet and, wherever practicable, exceed Federal sustainable design and operations principles for new construction and modernization projects in accordance with CEQ's Guiding Principles for Sustainable Federal Buildings (Guiding Principles). *All renovation projects of existing Federal buildings must use, to the greatest extent technically feasible and practicable, Federal sustainable design and operations principles for existing buildings in accordance with the* Guiding Principles. (Sec. I.F.1 of M-22-06)

Progress metrics:

Target:	All new construction and modernization projects greater than 25,000 GSF must apply the *Guiding Principles*. All renovation projects must apply the *Guiding Principles*, to the greatest extent technically feasible.
Metric:	Percentage of buildings (new and existing); and Percentage of GSF that qualifies as a Sustainable Federal building.
Progress Milestone:	Agencies will track compliance annually.

Guiding Principles for Sustainable Federal Buildings: Federal sustainable buildings policy builds upon statutory provisions to promote energy and water conservation and emissions reductions strategies as well as sustainable siting, indoor environmental quality, and sustainable materials throughout an agency's portfolio. These policies and strategies are reflected in the six Guiding Principles, which guide agencies in designing, locating, constructing, maintaining, and operating Federal buildings in a sustainable manner. The goal is to increase efficiency, optimize performance, reduce emissions, encourage responsible use of materials and resources, ensure the health of occupants, reduce waste, and increase agency resiliency and adaptation to climate risks.

Applicability: While agencies apply and track sustainable buildings on an individual building basis, agencies should use portfolio-wide sustainable policies and practices to meet relevant *Guiding Principles* criteria, supporting a consistent and uniform approach to sustainable Federal buildings across their portfolios.

Qualification of a sustainable Federal building: Agencies may qualify sustainable Federal buildings, including existing buildings, new construction, and major renovations, using one of the following, provided in the *Guiding Principles*:

1. *Guiding Principles* criteria, checklists in Appendix A or B; or

2. Third-party building certification systems or standards identified by GSA's Office of Federal High-Performance Green Buildings. Agencies that choose to use a third-party building certification system must continue to ensure relevant statutory and regulatory requirements are met.[56]

CEQ, with and through support from GSA, will provide technical support and training on the *Guiding Principles*.

4.4.16 Cross-cutting: Facilities Planning, Reporting, and Target Settings

Annual Buildings Strategic Plan:

Beginning in FY 2023, each principal agency that owns or operates its facilities must develop and submit to CEQ and OMB an annual Buildings Strategic Plan**,** which will review progress toward meeting annual targets across building-related goals as outlined in the Instructions. CEQ, in coordination with the White House Climate Policy Office, OMB, DOE-FEMP, and GSA, will issue annual instructions and a template containing prepopulated facility data to assist agencies in preparing the Buildings Strategic Plan.

Consistent with forthcoming guidance issued by CEQ, in coordination with OMB, agencies will propose 2030 targets and annual progress targets. CEQ and OMB will review and approve targets, which will become part of the annual planning process beginning in FY 2023.

Reporting: Agencies must report on building goals beginning on the timelines indicated below. DOE-FEMP and GSA, in consultation with CEQ and OMB, must update agency reporting

[56] This includes 42 U.S.C. 6834, 10 CFR part 433, subpart C (commercial buildings) and 10 CFR part 435 (residential buildings).

systems, templates, and instructions to capture the data necessary to report on building goals and metrics as indicated in the Instructions. CEQ and OMB may revise the reporting instructions below, if reporting tools and systems change or develop.

Goal	**Reporting Vehicle**	**Beginning**
Reducing Facilities Scope 1 and 2 Emissions	Annual Energy Report to FEMP	Ongoing
Energy and Water Use Intensity	Annual Energy Report to FEMP	Ongoing
Federal Building Performance Standard	EISA Compliance Tracking System	FY 2024
Deep Energy Retrofits	EISA Compliance Tracking System	FY 2023
Performance Contracting GHG Reductions	Annual Energy Report to FEMP	FY 2023
Net-Zero Emissions New Construction	Annual Energy Report to FEMP	FY 2023
Green Leasing	FRPP-MS	FY 2024
Sustainable Federal Buildings	FRPP-MS	Ongoing

4.5 Waste Management

4.5.1 Policy

Each agency shall minimize waste, including the generation of wastes requiring treatment and disposal; advance pollution prevention; support markets for recycled products; and promote a transition to a circular economy . . . by annually diverting from landfills at least 50 percent of non-hazardous solid waste, including food and compostable material, and construction and demolition waste and debris by fiscal year 2025; and 75 percent by fiscal year 2030. (Sec. 207 of E.O. 14057)

4.5.2 Overview

Waste management, which encompasses reduction and diversion, is critical not only to prevent pollution, but also to reduce GHG emissions.[57] Reduction and diversion of organic waste (e.g., food waste) is particularly important because the anaerobic decomposition of organic materials in municipal solid waste landfills produce significant quantities of methane, which has a global warming potential (GWP) 25 times greater than carbon dioxide.[58]

Agencies can significantly reduce environmental impacts, along with waste management costs and disposal fees, through well-established and low-tech waste management best practices that drive waste reduction and diversion. These strategies, which include reuse, recycling, and composting of materials that would otherwise be sent to a landfill or combustion facility,[59] are applicable to both categories of waste covered by the goals of E.O. 14057—municipal solid waste[60] and construction and demolition debris.

4.5.3 Progress Metrics

Target:	50 percent diversion of non-hazardous municipal solid waste (MSW) by FY 2025, 75 percent diversion by FY 2030. 50 percent diversion of non-hazardous construction and demolition (C&D) debris by FY 2025, 75 percent diversion by FY 2030.
Metric:	Percentage MSW and C&D diverted.
Progress Milestone:	Agencies will track progress annually for MSW and C&D diversion.

[57] *See* EPA, *Advancing Sustainable Materials Management: 2018 Fact Sheet* (Dec. 2020), https://www.epa.gov/sites/default/files/2021-01/documents/2018_ff_fact_sheet_dec_2020_fnl_508.pdf.
[58] EPA, *Basic Information About Landfill Gas* (Apr. 21, 2022), https://www.epa.gov/lmop/basic-information-about-landfill-gas.
[59] Diversion does not include alternative daily cover.
[60] Solid waste, as defined in 42 U.S.C. 6903(27).

4.5.4 Requirements and Priority Strategies

Priorities for waste management: Agencies should first strive to reduce all types of waste generated and then pursue strategies that divert waste from treatment and disposal facilities. Agencies should follow EPA's Waste Management Hierarchy,[61] which prioritizes waste management approaches, from most to least environmentally preferred, as follows:

- Source reduction;
- Reuse;[62]
- Recycling and composting;[63]
- Energy recovery (e.g., waste-to-energy combustion facilities);
- Treatment; and
- Disposal, such as landfill.

For the purposes of reporting progress toward E.O. 14057 waste diversion goals, agencies may not count waste disposed of through waste-to-energy processes.

Categories of waste: Agencies must manage, divert, and report non-hazardous waste from two main sources including:

MSW: MSW is waste from standard facility operations, typically including food, compostable and organic materials, and everyday items such as product packaging, paper products, yard trimmings, clothing, bottles and cans, newspapers, and certain batteries. Agencies must achieve at least 50 percent diversion of MSW by FY 2025 and 75 percent by FY 2030.

To reduce MSW and support achievement of waste management goals, agencies should provide for the collection and storage of recyclable materials, including compostable materials. Agencies must establish and maintain waste reduction, reuse, recycling and composting programs, and maximize all methods of waste diversion. Where feasible, building service and waste hauling contracts should include provisions for waste minimization and diversion and require that

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[61] *See* EPA, *Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy* (July 5, 2022), https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy; and EPA, *Learn About Pollution Prevention* (Apr. 7, 2022), https://www.epa.gov/p2/learn-about-pollution-prevention.

[62] Reuse could include salvage of existing materials on-site, reclamation of products by manufacturers and return of packaging materials to the manufacturer, shipper or other packaging reuse sources.

[63] Best practices for preventing and managing organic waste include conducting food waste audits to identify opportunities to prevent food from going to waste through practices like food purchasing, staff training, portion options and food donation. *See* EPA, A Guide to Conducting and Analyzing a Food Waste Assessment (Mar. 2014), https://www.epa.gov/sites/default/files/2015-08/documents/r5_fd_wste_guidebk_020615.pdf; EPA, From Farm to Kitchen: The Environmental Impacts of U.S. Food Waste (Nov. 2021), https://www.epa.gov/system/files/documents/2021-11/from-farm-to-kitchen-the-environmental-impacts-of-u.s.-food-waste_508-tagged.pdf. Other best practices include providing separate collection bins for organic waste and contracting an organics collection service for composting.

vendors report waste data to the agency to facilitate tracking of MSW waste reduction and diversion rates.

Under 42 U.S.C. 6961, agencies also must comply with state, interstate, and local requirements for management and disposal of non-hazardous solid waste and hazardous waste.

C&D debris: C&D debris is waste from new construction, modernization, demolition, deconstruction and, beginning in FY 2024, tenant improvement projects for leases subject to green leasing requirements. Agencies should exclude land clearing debris from C&D debris calculations. Agencies must achieve at least 50 percent diversion of C&D debris by FY 2025 and 75 percent by FY 2030. Agencies should track C&D waste from tenant improvement projects in leases where green leasing requirements apply.

To reduce and divert C&D waste, agencies should require project teams to create a construction and demolition waste management plan for new construction, modernization, renovation, and, beginning in FY 2024, tenant improvement projects for leases subject to green leasing requirements. C&D waste management plans should include target diversion rates to be met or exceeded; anticipated waste by type and quantity of materials; minimization and diversion strategies; comingled and source separation strategies; jobsite conditions and practices to ensure materials are kept in shape conducive to their reuse; diversion service providers and facilities; quality assurance requirements; and submittal requirements to document and report on the waste reduction and diversion effort.[64] Contracts should require vendors to report waste data to the agency, and, where feasible, to facilitate tracking of C&D waste reduction and diversion rates.

4.5.5 Agency Planning and Reporting

Waste data reporting*:* CEQ will provide guidance to agencies for reporting agency-level data on waste generated and diverted. Agencies must track and report C&D waste and MSW from facilities 25,000 GSF or greater. For MSW, agencies must report waste where the agency is directly responsible for disposal services for the building (e.g., through a waste management service contract). For C&D, the agency that pays for the construction or renovation is responsible for tracking and reporting. Agencies should strive to track waste from smaller facilities and other mission and non-mission-related activities (e.g., waste not associated with buildings or facilities, such as campgrounds, illegal dumping, storm debris, wildfire camps, etc.) Agencies should not include tracking of these types of wastes in the reporting metric, but tracking will help agencies to incorporate waste minimization strategies in all types of operations.

Use of EPA Portfolio Manager: To promote consistency across agency reporting, agencies should use EPA Portfolio Manager to track waste at the facility level. Agencies that choose to use agency-specific waste tracking systems must ensure that waste is categorized and reported in

[64] *See* EPA, Construction Waste Management Section 01 74 19 (2007), https://www.epa.gov/sites/default/files/2014-03/documents/017419.pdf (providing additional information on C&D Waste management plans).

alignment with the EPA Portfolio Manager definitions and methodologies.[65] The EPA resources listed below provide methodologies estimating waste quantities[66] if actual data is not available.

Leased spaces: Consistent with section 4.4.13, lessors subject to green leasing requirements must report MSW from operations and C&D waste generated during tenant improvement starting by the end of FY 2024. The lessor should track and report MSW and C&D waste generation and diversion using EPA Portfolio Manager in accordance with the reporting requirements identified below.

4.5.6 Guidance and Resources

General waste resources:

- GSA's SF Tool[67] includes resources for solid waste management, guidance for contracts and plans, details system-level strategies for waste reduction/reuse, recycling, recovery, and removal.

- EPA's Sustainable Materials Management (SMM)[68] provides accessible information on materials life cycles, organizational strategies, and tools.

Construction and demolition resources:

- EPA's SSM website provides Best Practices for Reducing, Reusing, and Recycling Construction and Demolition Materials[69] and lists trade associations, research and education organizations supporting C&D.

- EPA's Deconstruction Rapid Assessment Tool[70] is a manual guide for assessing opportunities to deconstruct, rather than demolish, facilities to materials support reuse and recycling.

- EPA's list on Organizations Working to Reduce the Disposal of Construction and Demolition (C&D) Materials.[71]

[65] Portfolio Manager tracks 29 types of waste and materials, including an "other" category for anything that does not fit into one of the other 28 categories. ENERGY STAR, *What Types of Waste and Materials are Tracked in Portfolio Manager* (Sept. 17, 2020), https://energystar-mesa.force.com/PortfolioManager/s/article/What-types-of-waste-and-materials-are-tracked-in-Portfolio-Manager-1600088531978.
[66] Waste data should be collected by weight. Waste data collected by volume should be converted to weight using volume-to-weight conversion factors. *See* EPA, Volume-to-Weight Conversion Factors (Apr. 2016), https://www.epa.gov/sites/default/files/2016-04/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fnl.pdf.
[67] https://sftool.gov/explore/green-building/section/57/solid-waste/system-overview.
[68] https://www.epa.gov/smm.
[69] https://www.epa.gov/smm/best-practices-reducing-reusing-and-recycling-construction-and-demolition-materials.
[70] https://www.epa.gov/large-scale-residential-demolition/deconstruction-rapid-assessment-tool.
[71] https://www.epa.gov/smm/organizations-working-reduce-disposal-construction-and-demolition-cd-materials.

- EPA's Disaster Debris Recovery Tool[72] provides information, mapping ability, and locations of over 20,000 facilities capable of managing different materials found in debris from disasters or other settings.

MSW resources:

- EPA's Guide for Managing and Reducing Wastes in Commercial Buildings[73] highlights techniques to sustainably address waste through tracking, goalsetting, waste assessments, and prevention/recycling, along with an additional set of external toolkits.

- EPA's Guide for Transforming Waste Streams in Communities[74] gives contracts, franchise agreements, and case studies of government strategies with waste haulers to move towards zero waste.

- ENERGY STAR's Waste Tracking and Management in Commercial Buildings,[75] which details methods for tracking waste in Portfolio Manager, with subsequent strategies for reduction and recycling.

[72] https://www.epa.gov/large-scale-residential-demolition/disaster-debris-recovery-tool.
[73] https://www.epa.gov/smm/managing-and-reducing-wastes-guide-commercial-buildings.
[74] https://www.epa.gov/transforming-waste-tool/contracts-and-franchise-agreements-waste-haulers-transforming-waste-streams.
[75] https://www.energystar.gov/buildings/waste_tracking.

4.6 Net-Zero Emissions Procurement

4.6.1 Policy

Through a coordinated whole-of-government approach, the Federal Government shall use its scale and procurement power to achieve . . . net-zero emissions from Federal procurement . . . . (Sec.102(a)(v) of E.O. 14057)

Agencies shall reduce emissions, promote environmental stewardship, support resilient supply chains, drive innovation, and incentivize markets for sustainable products and services . . . . (Sec. 208(a) of E.O. 14057)

[A]gencies shall pursue procurement strategies to reduce contractor emissions and embodied emissions in products acquired or used in Federal projects. (Sec. 301 of E.O. 14057)

4.6.2 Overview

The Federal Government's supply chain is a major source of GHG emissions from Federal operations. GSA has estimated that in 2019, contractors and subcontractors emitted a total of 150 million metric tons CO_2e associated with Federal contracts, more than twice the Federal Government's own scope 1 and scope 2 emissions combined. Using a whole-of-government approach, E.O. 14057 requires the Federal Government to use its scale and procurement power to achieve net-zero emissions, and requires each agency to use procurement to promote environmental stewardship, and drive emissions reductions by Federal suppliers.

E.O. 14057 establishes three major areas of procurement policy: (1) achieving emissions reduction goals and greater sustainability across Federal operations by procuring sustainable products and services (sec. 302); (2) pursuing procurement strategies that facilitate climate resilience and reduce GHG emissions, including contractor emissions and embodied emissions (sec. 301); and (3) developing a Federal Buy Clean policy and procedures to reduce embodied carbon in construction materials used for federally funded projects (sec. 303).

4.6.3 Requirements and Priority Strategies

Reducing emissions through agency procurements: Section 5(b) of E.O. 14030, *Climate-Related Financial Risk*, directs the Federal Acquisition Regulatory Council, in consultation with the Chair of CEQ and the heads of other appropriate agencies, to consider amending the Federal Acquisition Regulation (FAR) to require major Federal suppliers to publicly disclose GHG emissions and climate-related financial risk and to set science-based reduction targets, and ensure that major Federal agency procurements minimize the risk of climate change.

Buy Clean Policy: Under section 303 of E.O. 14057, the Buy Clean Task Force will provide recommendations to CEQ and OMB on policies and procedures to expand consideration of embodied emissions and pollutants of construction materials, such as concrete and steel, in Federal procurement and federally funded projects to reduce embodied emissions.

Agency actions: Pending updates to the FAR and issuance of government-wide policy or guidance on reducing supply chain emissions, agencies should consider and pursue procurement

vehicles, including pilot projects, that aim to reduce contractor emissions or embodied emissions from the purchase of products and services. In developing strategies, agencies should consider and prioritize pilot projects that target categories of significant agency spending or have the greatest potential to impact emissions or climate risk. For example, agencies may seek information on life-cycle carbon emissions and related economic costs, including the social cost of greenhouse gases (SC-GHG), of procured products and services. Agencies also may establish agency-specific standards, policies, and programs for sustainable acquisition that incentivize contractors to account for and reduce emissions and climate risks. In designing and implementing new and innovative strategies and pilot projects, agencies should consult with CEQ to ensure alignment with best practices and policy direction for addressing supply chain emissions under E.O. 14057.

Tracking and reporting of supply chain emissions: Consistent with section 302 of E.O. 14057, CEQ will coordinate with GSA to develop systems and methodologies to track supplier emissions. Agencies need not track procurement-related emissions or related contractor practices at the agency level but may choose to track data for individual procurements or pilot projects, as noted in section 4.4.15. Section 4.1.5 of the Instructions addresses agency reporting of supply chain emissions as part of scope 3 emissions tracking, and agencies must coordinate with CEQ and OMB on the development of any scope 3 methodologies to ensure consistent government-wide GHG tracking and reporting.

Sustainable products and services: In achieving the sustainable procurement goals of E.O. 14057 and M-22-06, agencies must ensure compliance with applicable statutory mandates for purchasing preferences and then ensure procurement of products and services identified by the required EPA programs indicated below in all contract actions and purchases. Agencies must prioritize multi-attribute products and services that meet at least one statutory mandate and one or more of the applicable requirements or EPA recommendations indicated below.

Applicability: Sustainable product and service acquisition policies apply to all new contracts actions,[76] including IDIQ contracts, task and delivery orders against existing contracts, and goods or services acquired through purchase cards. GSA's Green Procurement Compilation[77] is a resource to help the Federal acquisition workforce identify applicable sustainable acquisition requirements, providing information on sustainable acquisition by product and service category. Additional resources for identifying sustainable products and services are listed below.

Statutory Requirements for purchasing preference include:

- Recovered content products identified by EPA's Comprehensive Procurement Guideline (CPG) Program;

- Biobased products in categories designated by USDA's BioPreferred Program;

[76] "Contract action means any oral or written action that results in the purchase, rent, or lease of supplies or equipment, services, or construction using appropriated dollars, including purchases below the micro-purchase threshold." 48 CFR 23.101.
[77] https://sftool.gov/greenprocurement.

- Energy efficient products certified by ENERGY STAR and energy and water efficient products designated by DOE-FEMP; and

- Products made with or containing acceptable alternatives to ozone-depleting substances listed by EPA's Significant New Alternatives Policy (SNAP) program.

Required EPA programs that identify sustainable products and services include:

- WaterSense;

- Safer Choice;

- SmartWay Transport partners and SmartWay products; and

- EPA Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing ("EPA Recommendations for Federal Purchasing").

Other Priority Procurement Policies:

PFAS: Consistent with sections 208 of E.O. 14057 and section I.G of M-22-06, agencies should prioritize substitutes for products that contain perfluoroalkyl or polyfluoroalkyl substances (PFAS)[78] and to the maximum extent practicable and consistent with statutory mandates, agencies should avoid the procurement of any PFAS-containing covered items (covered items containing perfluorooctane sulfonate (PFOS) or perfluorooctanoic acid (PFOA)), as defined in section 333 of Public Law 116–283, as amended. EPA will identify options to incorporate PFAS criteria into the EPA Recommendations for Federal Purchasing. Agencies may avoid PFAS in agency procurements by establishing agency-specific specifications and requirements, in coordination with the Interagency Policy Committee on PFAS (IPCoP).

Single-use plastics: Consistent with section 207 of E.O. 14057 and to minimize waste, advance pollution prevention, and promote a transition to circular economy approaches, agencies should take actions to reduce and phase out procurement of single-use plastic products, to the maximum extent practicable. Agencies also may establish agency-specific guidance to reduce or otherwise address single-use plastics in acquisition plans, including use of alternatives identified by the USDA BioPreferred Program.

Exceptions to acquisition requirements: Section 208 of the E.O. establishes that agencies must procure sustainable products and services to the maximum extent practicable. Sustainable acquisition requirements are practicable unless:

- For recovered content and biobased products;[79]

    1. The agency cannot acquire competitively a product or service within a reasonable performance schedule;

[78] *See* EPA, *PFAS Explained* (Apr. 28, 2022), https://www.epa.gov/pfas/pfas-explained.
[79] 42 U.S.C. 6962; 7 CFR part 3201.

2. The agency cannot acquire a product or service that meets reasonable performance requirements; or

3. The agency cannot acquire a product or service at a reasonable price; or

- For energy efficient -related products[80];

1. An Energy Star product or FEMP-designated product is not cost-effective over the life of the product taking energy cost savings into account; or

2. No Energy Star product or FEMP-designated product is reasonably available that meets the functional requirements of the agency.

If the agency determines that it is not practicable to meet the sustainable acquisition requirements for one or more of the reasons above, the contracting officer should document the exception being used and rationale within the contract file.

Best value and price considerations: Agencies should procure products and services in a cost-effective manner that advances energy, sustainability, and climate adaptation goals, and should base "best value" determinations on full life-cycle costs, including measurable costs of environmental impacts in all phases of the product or service life-cycle, where possible.

Agencies must consider a price unreasonable only when the total life-cycle costs, including measurable costs of any associated environmental impacts, are significantly higher for the sustainable product or service than for the non-sustainable product or service.

Use of government-wide and shared acquisition vehicles: OMB's OFPP is leading a government-wide Category Management initiative.[81] To achieve and retain best-in-class (BIC) status, Category Management solutions must include relevant and updated sustainability requirements in support of existing BIC criteria. Agencies must use Category Management solutions, to the maximum extent practicable, to meet sustainability goals and better leverage the government's buying power. Use of government-wide or other shared acquisition vehicles that already include sustainability requirements, such as government-wide acquisition contracts (GWACs), Commercial Platforms, IDIQ contracts, Multiple Award Schedule contracts, and BPAs, can support agencies' acquisition of environmentally preferable products and services and sustainable acquisition goals. Contracting officers using these vehicles remain responsible for ensuring that all sustainable acquisition requirements are met when placing orders against them.

Incorporation into Agency Policy and Procedures: Agencies must establish, update, and maintain policies, guidance, procedures, and training requirements to promote achievement of E.O. goals and ensure compliance with the sustainable procurement policies and requirements identified in the Instructions. Following issuance of any further policy, guidance, or updates to the FAR, agencies must update internal policies and procedures, including agency-specific regulations, to align with government-wide policy and established procurement regulations and requirements.

[80] 42 U.S.C. 8259b(b)(2).
[81] https://www.gsa.gov/buying-selling/category-management.

Agencies may establish agency-specific standards, policies, programs, and incentives for sustainable acquisition as long as they meet or exceed the requirements in these Instructions. Agencies should ensure that contracting officers and other relevant staff receive training on sustainable acquisition policy, practices, and reporting requirements.

4.6.4 Existing Guidance and Resources

- GSA's Federal Contractor Climate Action Scorecard[82] summarizes public disclosure of climate risk and GHG management practices by major Federal suppliers.

- EPA's Sustainable Marketplace: Greener Products and Services[83] website includes EPA's Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing,[84] which identify environmentally preferable products and services, including electronics. Agencies must purchase these EPA-recommended products and services to the maximum extent practicable.

- GSA's Green Procurement Compilation (GPC)[85] is a comprehensive green purchasing resource designed for Federal contracting personnel and program managers. The GPC makes it easier to identify applicable green purchasing requirements for products and services by consolidating information from Federal environmental programs in one place.

- GSA's Sustainable Facilities Tool Product Search[86] streamlines sustainable product procurement for buyers, specifiers and vendors, making it easier for project teams to buy, specify and document environmentally preferable products.

- GSA's Commercial Platforms[87] provide access to e-marketplace platforms that have the ability to promote the purchase of sustainable and green products.

- EPA's Significant New Alternatives Policy (SNAP) Program[88] identifies and evaluates substitutes for ozone-depleting substances. The program looks at overall risks to human health and the environment of existing and new substitutes, publishes lists and promotes the use of acceptable substances, and provides the public with information.

- EPA's Comprehensive Procurement Guideline (CPG) Program[89] provides information on minimum recovered content for Federal purchasing.

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[82] https://d2d.gsa.gov/report/gsa-federal-contractor-climate-action-scorecard.
[83] https://www.epa.gov/greenerproducts.
[84] https://www.epa.gov/greenerproducts/recommendations-specifications-standards-and-ecolabels-federal-purchasing.
[85] https://sftool.gov/greenprocurement.
[86] https://sftool.gov/learn/about/551/sftool-product-search.
[87] https://www.gsa.gov/buying-selling/purchasing-programs/commercial-platforms.
[88] https://www.epa.gov/snap.
[89] https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program.

- USDA's BioPreferred[90] website provides information on minimum biobased content requirements and related reporting and acquisition tools,[91] including recommended methodologies for agencies to set biobased purchasing targets.

- EPA's ENERGY STAR[92] website and DOE-FEMP's Energy-Efficient Products[93] provide information and resources for purchasing energy-efficient products and equipment.

4.6.5 Implementation Actions

- In coordination with CEQ, OMB, and other appropriate agencies, EPA should consider expanding its Recommendations of Specifications, Standards, and Ecolabels for Federal Procurement to facilitate net-zero emissions procurement and other goals of E.O. 14057, including identification of products that do not contain PFAS.

- GSA should update regularly its Green Procurement Compilation to incorporate sustainability requirements established under E.O. 14057. Other agencies operating Federal e-procurement systems also must incorporate these requirements to promote compliance with E.O. requirements.

- Following issuance of the Instructions and following any relevant updates to the FAR, agencies that provide Federal procurement trainings should update those trainings to reflect the policy and requirements of E.O. 14057, M-22-06, and the Instructions.

- GSA, in coordination with CEQ and OFPP, should consider necessary updates to FPDS to facilitate tracking of sustainable procurement policy under E.O. 14057, including agency procurements that avoid products containing PFAS.

- Within 180 days of these instructions, USDA should identify means to track agency compliance with the requirements for biobased-only contracting targets and reporting on biobased purchasing under section 9002 of the Farm Security and Rural Investment Act of 2002 (Pub. L. No. 107-171), as amended.

[90] https://www.biopreferred.gov/BioPreferred.
[91] https://www.biopreferred.gov/BioPreferred/faces/pages/AcquisitionTools.xhtml.
[92] https://www.energystar.gov.
[93] https://www.energy.gov/eere/femp/search-energy-efficient-products.

4.7 Climate Resilient Infrastructure and Operations

4.7.1 Policy

[P]romote climate resilient investment that advances adaptation to climate change and protects public health and the environment; conduct climate adaptation analysis and planning for climate-informed financial and management decisions and program implementation; reform agency policies and funding programs that are maladaptive to climate change . . .; and develop and enhance tools that assess climate change impacts and support climate adaptation planning and implementation. (Sec. 209 of E.O. 14057)

Meeting the challenges of climate change and achieving the goals of [E.O. 14057] requires an investment in the Federal Government's employees and a workforce with the knowledge and skills to effectively apply sustainability, climate adaptation, and environmental stewardship across disciplines and functions. (Sec. 401 of E.O. 14057)

[I]t is critical that the Federal Government incorporate environmental justice considerations into sustainability and climate adaptation planning, programs, and operations. (Sec. 402 of E.O. 14057)

The heads of principal agencies shall develop, implement, and update Climate Adaptation and Resilience Plans . . . . (Sec. 503(b) of E.O. 14057)

4.7.2 Overview

Impacts from climate change related-hazards are a threat to Federal agency missions, facilities, and operations, and require a whole-of-government response. Through climate adaptation and resilience planning, Federal agencies identify aspects of climate change that affect or are expected to affect their ability to achieve statutory missions or sustain operations, and develop strategies to respond and mitigate those impacts. Implementation of these plans helps agencies reduce both existing and future cumulative effects of climate change, and integration of climate adaptation into the policies, programs, processes, activities and operations of the Federal Government will help ensure that Federal investments are equitable and responsible. Climate Adaptation and Resilience Plans (CAPs) are by design "living documents" and require routine updates and improvements to reflect the latest climate science, new agency information, ongoing agency progress toward existing goals and targets from implementation, and emerging strategic priorities.

E.O. 14008 requires agencies to develop climate action plans that describe steps to bolster adaptation and increase resilience for agency facilities and operations. These plans must address five priority adaptation action areas, as well as climate adaptation capacity building, an updated climate vulnerability assessment, and adaptation criteria in the management of real property, goods, and services. Agencies issued these plans in October 2021.

E.O. 14057 builds upon E.O. 14008, and emphasizes the importance of the Federal Government's strategic planning, governance, financial management, and procurement to ensuring climate resilient operations. Section 503(b) of E.O. 14057 establishes a continuing

requirement to develop CAPs, and section 211(c) of E.O. 14008 requires annual CAP progress reports. Both the CAPs and the annual CAP progress reports communicate agency action to bolster climate adaptation and resilience and make the Federal Government more climate-ready.

4.7.3 Agency Planning and Reporting

Climate adaptation and resilience plans: Agencies that submitted plans under E.O. 14008, including principal agencies, must update their CAPs by September 30, 2023. CEQ will provide guidance on further updates, incorporating feedback and lessons learned from the 2021 CAP and 2022 CAP progress reports.

Annual progress reports: Based on CEQ guidance, agencies must submit annual CAP progress reports on implementation of their CAPs by June 30 of each year or as directed in CEQ's annual planning/progress report guidance.

Plan contents: CAPs and annual CAP progress reports must address the status of agency implementation of prior plan submissions and agency action in priority areas, including:

- Expanding climate literacy in the agency's workforce;
- Addressing environmental justice; and
- Tribal consultation.

Plan review and approval: CEQ and OMB will review and CAPs and annual CAP progress reports, which will be posted publicly at sustainability.gov/adaptation.

4.7.4 Further Guidance and Resources

Information and Tools: In addition to prior agency Climate Adaptation Plans and vulnerability assessments, resources are available at the U.S. Global Change Research Program (USGCRP)[94] website including:

- Fourth National Climate Assessment (NCA4);[95]
- U.S. Climate Resilience Toolkit;[96] and
- Climate Explorer Tool.[97]

For supply chain tools, see GSA's Supply Chain Climate Risk Management Framework.[98]

[94] https://www.globalchange.gov.
[95] https://www.globalchange.gov/nca4.
[96] https://toolkit.climate.gov.
[97] https://crt-climate-explorer.nemac.org.
[98] https://sftool.gov/plan/556/supply-chain-climate-risk-management-framework.

For climate preparedness tools, see the Public Tools Developed by the U.S. Army Corps of Engineers.[99]

[99] https://www.usace.army.mil/corpsclimate/Public_Tools_Dev_by_USACE.

4.8 Electronics Stewardship

4.8.1 Overview

Electronics stewardship is a cross-cutting environmental issue directly linked to achievement of the E.O. 14057 goals for GHG reductions, energy efficiency, sustainable acquisition, and waste management. Sustainable life-cycle management of electronics is driven by a range of statutory requirements, including, most recently, the Energy Act of 2020,[100] which requires agencies to coordinate with OMB, DOE, and EPA on strategies for the maintenance, purchase, and use of energy-efficient and energy-saving information technologies at or for their facilities. In addition to the statutory and E.O. 14057 goals and requirements, the FAR and FMR outline requirements to guide agency electronics stewardship practices.[101]

4.8.2 Requirements and Priority Strategies

Electronics Acquisition and Procurement: With respect to purchases and leases of information technology (IT) products and related services (including wireless, cloud, print management, and seat management services), agencies must:

- Acquire ENERGY STAR certified[102] and FEMP Low Standby Power Products[103] electronic products;
- Acquire IT products and services that meet EPA's Recommended Standards, Specifications, and Ecolabels for Federal purchasing; and
- Procure related supplies, such as print and copy paper and ink and toner cartridges, consistent with statutory requirements for recovered content products (see the CPG) and then biobased requirements.

EPA's Recommended Standards, Specifications, and Ecolabels currently recommend Electronic Product Environmental Assessment Tool (EPEAT)-registered products as the only as the only applicable third-party standard for sustainable electronics for Federal purchase. Consistent with section 4.6.3 of the Instructions, agencies must procure EPEAT-compliant products, where applicable, unless EPA recommends other standards that meet or exceed EPEAT standards for environmental performance, in accordance with the National Technology Transfer and Advancement Act of 1995 and OMB Circular A-119.

Operations and Maintenance:

Power Management: Power management refers to tools and equipment features to reduce power consumption of electronics, such as placing computers or displays into sleep mode after a set

[100] Energy Act of 2020, Pub. L. No. 116–260, § 1002, 42 U.S.C. 8253(f)(4)(B).
[101] Federal Acquisition Regulation, 48 CFR 23.203; Federal Management Regulation, 41 CFR 102–40.170.
[102] https://www.energystar.gov.
[103] https://www.energy.gov/eere/femp/low-standby-power-product-purchasing-requirements-and-compliance-resources.

period of inactivity. For example, ENERGY STAR certified electronics have pre-installed power management features to reduce energy consumption.

Agencies must enable power management features on computers and displays that are running or connected to a computer running an operating system capable of power management (including Windows, Mac and Linux operating systems), unless the equipment is mission critical (e.g., facility security monitoring, air traffic control, uninterruptable laboratory experiments, and medical equipment), or incapable of being power managed due to make or model.[104] Agencies should use active power management systems that can monitor the energy consumption and power settings of network-enabled IT equipment and apply power management protocols to optimize energy efficiency. EPA's ENERGY STAR program offers free technical assistance in implementing power management.

Printing: Agencies should ensure double-sided printing is enabled and set to "default" on software and printing devices.

End-of-Life Management: When disposing of excess and surplus electronics or when returning leased electronics, agencies must follow the guidelines in GSA Bulletin FMR B-34, *Disposal of Federal Electronic Assets*. Acceptable methods of disposal for electronic assets, in order of preference, are:

- Reuse within an agency or through transfers, donations, and sales, including through exchange/sale authority;
- Donate through federally approved programs such as Computers for Learning; and
- Recycle through certified recyclers[105] and manufacturer take-back programs using certified recyclers.

Per, GSA Bulletin FMR B-34, agencies should not dispose of excess and surplus electronics in building waste streams destined for landfills or incinerators. In addition, agencies are directed to follow the recommendations of National Institute of Standards and Technology (NIST) 800-88, *Guidelines for Media Sanitization*[106] and develop consistent agency practices to clean hard drives and other storage devices in order to protect sensitive data and maximize reuse potential by using the least destructive sanitization procedures wherever appropriate.

[104] Virus patching or scanning are not reasons to disable or exempt equipment from power management requirements.
[105] Federal programs offering certified recycling include UNICOR, https://unicor.gov/Recycling.aspx?msclkid=54a3b99db69611ecadf2a59383d82003, and the U.S. Postal Service BlueEarth, https://about.usps.com/what/corporate-social-responsibility/sustainability/greening-business/. EPA's Recommendations of Specifications, Standards, and Ecolabels also identifies third-party certified recyclers and refurbishers, https://www.epa.gov/greenerproducts/recommendations-specifications-standards-and-ecolabels-federal-purchasing.
[106] https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-88r1.pdf.

4.9 Incorporating Environmental Justice

4.9.1 Policy

Agencies shall address actions taken to advance environmental justice as part of sustainable operations within the annual Sustainability Plans and Climate Adaptation and Resilience Plans . . . . (Sec. 402 of E.O. 14057)

4.9.2 Overview

Environmental justice cuts across E.O. 14057 goals, in particular for Federal facilities, fleets, and operations. Consistent with the Administration's ongoing commitment to advance environmental justice and equity within the Federal Government, E.O. 14057 requires that agencies incorporate environmental justice into sustainability and climate adaptation planning, decision making, and implementation.

E.O. 14008 requires Federal agencies to make achieving environmental justice part of their missions "by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts." E.O. 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*,[107] as amended, further requires Federal agencies to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Successful implementation of E.O. 14057 requires agencies to integrate environmental justice considerations across their portfolios and into their day-to-day operations.

4.9.3 Requirements and Priority Strategies

Operational planning: Agencies must incorporate environmental justice considerations into operational planning and decision making regarding Federal facilities, fleets, and operations. Where possible, agencies should assess whether implementation of E.O. 14057 might create or exacerbate environmental justice concerns, or conversely, whether actions can address existing disproportionate environmental, climate, and human health burdens. In conducting these assessments, agencies should use existing agency resources on environmental justice, including any created under E.O. 14008 or E.O. 12898. For example, agencies should recognize that different options for achieving comparable GHG emissions reductions could have different consequences for advancing environmental justice and delivering other important co-benefits. In addition to costs and other relevant factors, agencies should consider environmental justice and other co-benefits in prioritizing the implementation of different actions to achieve their E.O. 14057 goals for their facilities, fleets, and operations. For example, upgrading vehicles that will be driven in more populated areas may have different co-benefits than upgrading vehicles that would be driven in less populated areas. Agencies also should consider the environmental justice impacts of their supply chains such as determining whether materials are being created, sourced, or procured in a manner that disproportionately and adversely affects communities of color and

[107] 59 Fed. Reg. 7,629 (Feb. 16, 1994), https://www.federalregister.gov/documents/1994/02/16/94-3685/federal-actions-to-address-environmental-justice-in-minority-populations-and-low-income-populations.

low-income populations. Agencies also should provide communities of color and low-income communities with opportunities for meaningful involvement in any operational planning or decision making that may lead to disproportionate and adverse human health or environmental effects on those communities. Additional information on environmental justice can be found at White House Environmental Justice Interagency Council.[108]

Agencies also should be aware that operational planning and decision making regarding Federal facilities, fleets, and operations may result in investments that are covered by the Justice40 Initiative established under E.O. 14008, which, seeks to provide 40 percent of the overall benefits of certain Federal investments in 7 key areas to disadvantaged communities. These seven areas are climate change; clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of critical clean water infrastructure. E.O. 14008 also directed CEQ to develop a Climate and Economic Screening Tool (CEJST)[109] to help identify disadvantaged communities that are marginalized, underserved, and overburdened by pollution.[110] For further information, agencies should consult OMB Memorandum M-21-28, Interim Implementation Guidance for the Justice40 Initiative,[111] issued by OMB, CEQ and CPO in July 2021, and any subsequent guidance that will be issued. Agencies are encouraged to review more about Justice40 covered programs.[112]Agencies also should review the first set of recommendations provided by the White House Environmental Justice Advisory Council in its May 2021 report.[113]

Equitable Federal procurement: Consistent with E.O. 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*,[114] and OMB Memorandum M-22-03, *Advancing Equity in Federal Procurement*,[115] agencies must ensure that Government contracting and procurement opportunities for Federal fleet, buildings, and operations are equitable.

Environmental justice and equity training: Consistent with section 401 of E.O. 14057, agencies must incorporate, where practicable, environmental justice and equity topics in sustainability and climate literacy training, taking into consideration the strategies identified in the Office of Personnel Management's (OPM's) forthcoming report, *Climate Adaptation, Sustainability and the Federal Workforce: Analysis of Agency Engagement, Training and Leader Capabilitie*s, developed under section 401 of E.O. 14057.

[108] https://www.whitehouse.gov/environmentaljustice.
[109] https://screeningtool.geoplatform.gov.
[110] CEQ released the CEJST in a beta form on February 18, 2022 in order to solicit feedback from the public, Tribal Nations, and Federal agencies.
[111] https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf.
[112] https://www.whitehouse.gov/environmentaljustice/justice40/.
[113] https://www.epa.gov/sites/default/files/2021-05/documents/whiteh2.pdf.
[114] 86 Fed. Reg. 7,009 (Jan. 25, 2021), https://www.federalregister.gov/documents/2021/01/25/2021-01753/advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government.
[115] https://www.whitehouse.gov/wp-content/uploads/2021/12/M-22-03.pdf.

4.10 Climate- and Sustainability-Focused Workforce

4.10.1 Policy

Meeting the challenges of climate change and achieving the goals of [E.O. 14057] requires an investment in the Federal Government's employees and a workforce with the knowledge and skills to effectively apply sustainability, climate adaptation, and environmental stewardship across disciplines and functions. Agencies shall foster a culture of sustainability and climate action; build employees' skills and knowledge through engagement, education, and training; and incorporate environmental stewardship values and, where appropriate, sustainability goals and objectives into performance plans of executives, managers, and staff. (Sec. 401 of E.O. 14057)

4.10.2 Overview

In order to meet E.O. 14057's mandate to engage, educate, and train the Federal workforce, individual agencies and the Federal Government as a whole must develop new resources, trainings, and systems to equip and inspire the Federal workforce.

4.10.3 Progress Metrics

CEQ, in coordination with OMB and OPM, will consider metrics for tracking progress toward a climate- and sustainability-focused workforce no later than FY 2023, taking into consideration the forthcoming Office of Personnel Management report, *Climate Adaptation, Sustainability and the Federal Workforce: Analysis of Agency Engagement, Training and Leader Capabilitie*s, (OPM report) developed under section 401 of E.O. 14057.

4.10.4 Requirements and Priority Strategies

Agencies must develop, conduct, support, and promote training, education, and engagement activities that equip their workforce with the skills and tools necessary to achieve the sustainability objectives of the E.O.

Employee education and training: Agencies must incorporate content on climate change, adaptation, and sustainability into relevant trainings offered for agency staff, or, where applicable, the greater Federal workforce. In identifying opportunities and best practices for enhancing such trainings, agencies should take into consideration strategies from the OPM report on Federal training, leadership and employee engagement. Where relevant, training must include information on advancing environmental justice and equity as part of climate resilient and sustainable operations.

Employee engagement: Engagement encompasses efforts to equip the Federal workforce with information, knowledge and skills to promote climate action, enhance climate adaptation awareness, incorporate sustainability goals and objectives relevant to their roles and responsibilities, and enable a sustainability-informed workforce. Agencies must develop strategies and relevant programs to bolster Federal employee understanding of and connection to agency climate and sustainability priorities. Examples of employee engagement activities include informational seminars, climate and sustainability teams or working groups, employee

involvement in developing and advancing climate and sustainability goals, and employee recognition programs.

Employee performance plans: Agencies must incorporate sustainability and climate action goals into employee performance plans where practicable, taking into account the OPM report's best practices and recommendations for agency implementation.

Human capital planning: Consistent with 5 CFR part 250, Subpart B, and section IV.B.2 of M-22-06, agencies must assess human capital planning strategies, and identify and incorporate the staffing, training, and associated resources necessary to implement and achieve the goals of E.O. 14057.

4.10.5 Agency Planning and Reporting

To facilitate reporting on agency action to achieve a climate- and sustainability-focused workforce, in FY 2022, agencies must establish systems to track strategies and actions to build agency capacity; educate, train, and engage agency staff; and incorporate sustainability and climate related goals and objectives into employee performance plans. This must include data on the number of:

- Sustainability and climate adaptation trainings, educational events, and employee engagements efforts;
- Staff participating in and receiving such training; and
- Employees whose performance plans incorporate environmental stewardship or sustainability and climate goals and objectives.

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Appendix A: Definitions

"24/7 carbon pollution-free electricity" or "24/7 CFE" means carbon pollution-free electricity procured to match actual electricity consumption on an hourly basis and produced within the same regional grid where the energy is consumed. (Sec. 603(a) of E.O. 14057)

"Adaptation" means adjustment in natural or human systems to a new or changing environment that exploits beneficial opportunities or moderates negative effects. (Sec. VII of M-22-06)

"Agency" means an executive agency as defined in section 105 of title 5, United States Code, excluding the Government Accountability Office and independent regulatory agencies, as defined in 44 U.S.C. 3502(5). (Sec. 603(b) of E.O. 14057)

"Battery electric vehicle" or "BEV" means a vehicle that draws motive power solely from a battery with a capacity of at least 4 kilowatt-hours; and can be recharged from an external source of electricity for motive power.

"Buy clean" means a policy to promote purchase of construction materials with lower embodied emissions, taking into account the life-cycle emissions associated with the production of those materials. (Sec. 603(c) of E.O. 14057)

"Carbon pollution-free electricity" or "CFE" means electrical energy produced from resources that generate no carbon emissions, including marine energy, solar, wind, hydrokinetic (including tidal, wave, current, and thermal), geothermal, hydroelectric, nuclear, renewably sourced hydrogen, and electrical energy generation from fossil resources to the extent there is active capture and storage of carbon dioxide emissions that meets EPA requirements. (Sec. 603(d) of E.O. 14057)

"Circular economy" means an economy that uses a systems-focused approach and involves industrial processes and economic activities that are restorative or regenerative by design; enable resources used in such processes and activities to maintain their highest values for as long as possible; and aim for the elimination of waste through the superior design of materials, products, and systems (including business models). (Sec. VII of M-22-06)

"Construction and demolition waste and debris" or "C&D waste and debris" means waste materials and debris generated during construction, renovation, demolition, or dismantling of all structures and buildings and associated infrastructure. (Sec. VII of M-22-06)

"Contributing agencies" means agencies that are not included in the definition of principal agencies, including boards, commissions, and committees. (Sec. VII of M-22-06)

"Diverting" means redirecting materials from disposal in landfills or incinerators to recycling or recovery, excluding diversion to waste-to-energy facilities. (Sec. VII of M-22-06)

"Embodied emissions" means the quantity of emissions, accounting for all stages of production including upstream processing and extraction of fuels and feedstocks, emitted to the

atmosphere due to the production of a product per unit of such product. (Sec. 603(e) of E.O. 14057)

"Energy attribute certificate (EAC)" is an instrument that conveys information (attributes) about a unit of energy, including the resource used to create it, and the emissions associated with its production and use. A renewable energy certificate, or REC, is a type of EAC.

"Equity" means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. (Sec. 2(a) of E.O. 13985)

"Facility" means any building or collection of buildings, grounds, or structure, as well as any fixture or part thereof, that is owned by the United States or any Federal agency or is held by the United States or any Federal agency under a lease-acquisition agreement under which the United States or a Federal agency will receive fee simple title under the terms of such agreement without further negotiation. (Sec. VII of M-22-06)

"Federal Building" means a building (including a complete replacement of an existing building from the foundation up) to be constructed by, or for the use of, any Federal agency, including a building leased by a Federal agency and privatized military housing. (*See* 42 U.S.C. § 6832(6))

"Fleet" means a group of 20 or more light duty motor vehicles, used primarily in a metropolitan statistical area or consolidated metropolitan statistical area, as established by the Bureau of the Census, with a 1980 population of more than 250,000, that are centrally fueled or capable of being centrally fueled and are owned, operated, leased, or otherwise controlled by a governmental entity or other person who owns, operates, leases, or otherwise controls 50 or more such vehicles. (*See* 42 U.S.C. 13211(9))

"Fuel Cell Electric Vehicle or "FCEV" means a vehicle propelled by power derived from one or more stacks of cells that combine oxygen with hydrogen fuel stored on board the vehicle to generate electricity.

"Greenhouse gas" or "GHG" means carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. (Sec. VII of M-22-06)

"Grid region" means the area of the grid within which a balancing authority maintains balance between electric load and resources.

"Heavy-duty vehicle" or "HDV" means a vehicle weighing 16,000 pounds gross vehicle weight rating or more, certified for use on all public roads and highways. (Sec. VII of M-22-06)

"Light-duty vehicle" or "LDV" means a vehicle weighing 8,500 pounds gross vehicle weight rating or less, certified for use on all public roads and highways. (Sec. VII of M-22-06)

"Medium-duty vehicle" or "MDV" means a vehicle between 8,500 pounds and 16,000 pounds gross vehicle weight rating, certified for use on all public roads and highways. (Sec. VII of M-22-06)

"Modernization" means the comprehensive replacement or restoration of virtually all major systems, interior finishes (such as ceilings, partitions, doors, and floor finishes), and building features. (CEQ's *Guiding Principles for Sustainable Federal Buildings and Associated Instructions*, Appendix E, 2020[116])

"National Climate Task Force" or "NCTF" means the National Climate Task Force established pursuant to section 203 of E.O. 14008. (Sec. 603(g) of E.O. 14057)

"Net-zero emissions" means reducing greenhouse gas emissions to as close to zero as possible, and balancing remaining emissions with an equivalent amount of emissions removal, through natural carbon sinks, carbon capture and storage, direct air capture, or other methods. (Sec. VII of M-22-06)

"Net-zero emissions building" means a building that is designed and operated so that, when connected to a regional electrical grid fully serviced by carbon pollution-free electricity (CFE), the scope 1 and 2 GHG emissions from all operational end uses are zero on an annual basis.

"Net-zero waste building" means a building that is operated to reduce, reuse, recycle, compost, or recover solid waste streams (with the exception of hazardous and medical waste) thereby resulting in zero waste disposal. (Sec. VII of M-22-06)

"Net-zero water building" means a building that is designed, constructed, or renovated and operated to greatly reduce total water consumption, use non-potable sources as much as possible, and recycle and reuse water in order to return the equivalent amount of water as was withdrawn from all sources, including municipal supply, without compromising groundwater and surface water quantity or quality. (Sec. VII of M-22-06)

"PFAS" means (a) man-made chemicals of which all of the carbon atoms are fully fluorinated carbon atoms, and (b) man-made chemicals containing a mix of fully fluorinated carbon atoms, partially fluorinated carbon atoms, and non-fluorinated carbon atoms. (Sections 332 of Public Law 116-283). Section 333 of Public Law 116-283, currently defines "PFAS-containing covered items" as covered items containing perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS); however, agencies should consider other PFAS used in commercial products for purposes of government-wide efforts to avoid PFAS in procurement. A common characteristic of concern for PFAS is that many break down very slowly and can accumulate in people, animals, and the environment over time. Products that are fire retardant, water resistant, or stain resistant could include these chemicals. Agencies should continue to review EPA and FDA websites for updates regarding PFAS. (See Our Current Understanding of

[116] https://www.sustainability.gov/pdfs/guiding_principles_for_sustainable_federal_buildings.pdf.

the Human Health and Environmental Risks of PFAS I US EPA[117] and Chemical Contaminants in Food | Per- and Polyfluoroalkyl Substances (PFAS)[118])

"PFAS-containing covered items" means any covered item that contains perfluorooctane sulfonate (PFOS) or perfluorooctanoic acid (PFOA) where the term ''covered item'' means—(1) nonstick cookware or cooking utensils for use in galleys or dining facilities; and (2) upholstered furniture, carpets, and rugs that have been treated with stain-resistant coatings. (Section 333 of Public Law 116–283)

"Principal agencies" mean the Departments of State, the Treasury, Defense (including the U.S. Army Corps of Engineers), Justice, the Interior, Agriculture, Commerce, Labor, Health and Human Services, Housing and Urban Development, Transportation, Energy, Education, Veterans Affairs, and Homeland Security; the Environmental Protection Agency; the Small Business Administration; the Social Security Administration; the National Aeronautics and Space Administration; the Office of Personnel Management; the General Services Administration; and the National Archives and Records Administration. (Sec. 603(h) of E.O. 14057)

"Plug-in Hybrid Electric Vehicles" or "PHEVs" means vehicles that are propelled by both an internal combustion and heat engine and to a significant extent by an electric motor that draws electricity from a battery (with a capacity of at least four kilowatt-hours) that can be recharged from an external source.

"Renewable energy certificate" or "REC" means the technology and environmental (non-energy) attributes that represent proof that 1 megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource, can be sold separately from the underlying generic electricity with which it is associated. (Sec. VII of M-22-06)

"Renewable energy" means marine energy (as defined in [42 U.S.C. 17211]), or electric energy produced from solar, wind, biomass, landfill gas, geothermal, municipal solid waste, or new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project. (42 U.S.C. 15852(b)(2))

"Resilience" means the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions. (Sec. VII of M-22-06)

"Retail Electric Choice Markets" or "deregulated markets" means electricity markets where customers can choose their electric supplier.

"Scope 1" means direct greenhouse gas emissions from sources that are owned or controlled by the agency. (Sec. VII of M-22-06)

"Scope 2" means indirect greenhouse gas emissions resulting from the generation of electricity, heat, or steam purchased by an agency. (Sec. VII of M-22-06)

[117] https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas.
[118] https://www.fda.gov/food/chemical-contaminants-food/and-polyfluoroalkyl-substances-pfas.

"Scope 3" means greenhouse gas emissions from sources not owned or directly controlled by an agency but related to agency activities such as vendor supply chains, delivery and transportation services, and employee travel and commuting. (Sec. VII of M-22-06)

"Siting" means the location decision process leading to the selection of a federally owned or leased Federal workplace.

"United States" means the fifty States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, and the Northern Mariana Islands, and associated territorial waters and airspace. (Sec. VII of M-22-06)

"Vertically Integrated Utility Markets" or "regulated markets" means electricity markets where the serving utility is responsible for generation, transmission, and distribution of electricity.

"Workplace" means real estate secured for Federal agency use and occupancy by Federal workers or contractors, including space secured through Federal ownership or lease contract.

"Zero-emission vehicle" means a vehicle that when operating produces zero tailpipe exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas. (Sec. VII of M-22-06)

Appendix B: List of Acronyms and Abbreviations

BPS	Building Performance Standard
C&D	construction and demolition
CEQ	Council on Environmental Quality
CFE	Carbon pollution-free electricity
CPG	Comprehensive Procurement Guidelines
CSO	Chief Sustainability Officer
CTS	EISA 432 Compliance Tracking System
DLA	Defense Logistics Agency
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOE-FEMP	U.S. Department of Energy Federal Energy Management Program
E.O.	Executive Order
ECM	energy and water conservation measure
EISA	Energy Independence and Security Act of 2007
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act
ESCO	energy service company
ESPC	energy savings performance contract
EUI	energy use intensity
EVSE	electric vehicle supply equipment
FAR	Federal Acquisition Regulation
FAST	Federal Automotive Statistical Tool
FleetDASH	Fleet Sustainability Dashboard
FMIS	Fleet Management Information System
FMR	Federal Management Regulation
FRPP-MS	Federal Real Property Profile – Management System

FPDS	Federal Procurement Data System
FY	fiscal year
GEB	grid-interactive efficient building
GHG	greenhouse gas
GSA	General Services Administration
GSF	gross square foot
HDV	heavy-duty vehicle
HVAC	heating, ventilation, and air conditioning
IDIQ	indefinite delivery, indefinite quantity
IT	information technology
LDV	light-duty vehicle
MDV	medium-duty vehicle
MSW	municipal solid waste
OFPP	Office of Federal Procurement Policy (OMB)
OMB	Office of Management and Budget
RSF	rentable square feet
U.S.	United States
U.S.C.	United States Code
UESC	utility energy service contract
USDA	U.S. Department of Agriculture
WUI	water use intensity

Appendix C: Summary of Planning and Reporting Timeline

CEQ and OMB will obtain agencies' fiscal year data and assess agencies' implementation and progress toward the goals of E.O. 14057 through Federal reports, plans, and data collection systems, some of which will be updated or streamlined to reflect revised data collection needs. CEQ or OMB may identify other data collection and reporting tools, or request supplemental data, as appropriate, and will provide more details on the components of the plans in future instructions and templates.

Report or Data Source(s)	Deadline for Submission or Final Data
Annual Energy Management Data Report[119] (Annual Energy Report)	January 31 annually
Sustainability Plan (updates)	June 30 annually
Climate Adaptation Plan (updates)	June 30 annually
Sustainability Strategic Plan (consolidated CFE, ZEV, Buildings - updates)	June 30 annually
EISA 432 Compliance Tracking System (CTS)[120] Reporting	June 30 annually
Federal Automotive Statistical Tool (FAST)[121] Reporting	December 15 annually
Federal Real Property Profile Management System (FRPP-MS)[122] Reporting	December 15 annually
Federal Procurement Data System (FPDS)[123] Reporting	Ongoing

[119] https://www.energy.gov/eere/femp/downloads/annual-energy-management-data-report.
[120] https://www.eisa-432-cts.eere.energy.gov/EISACTS/Login.aspx.
[121] https://fastweb.inl.gov.
[122] https://www.realpropertyprofile.gov/FRPPMS/FRPP_Login.
[123] https://www.fpds.gov/fpdsng_cms/index.php/en.