Implementing Instructions for Executive Order 13693
Planning for Federal Sustainability in the Next Decade

The White House Council on Environmental Quality
Office of Federal Sustainability
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Implementing Instructions for E.O. 13693

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(Including References to Corresponding Sections of E.O. 13693)

I. Introduction

Executive Order (E.O.) Section 1:

It is hereby ordered as follows…Federal leadership in energy, environmental water, fleet, buildings, and acquisition management will continue to drive national greenhouse gas reductions and support preparations for the impacts of climate change… Through a combination of more efficient Federal operations such as those outlined in this Executive order…we have the opportunity to reduce agency direct greenhouse gas emissions by at least 40 percent over the next decade while at the same time fostering innovation, reducing spending, and strengthening the communities in which our Federal facilities operate…priority should first be placed on reducing energy use and cost, then on finding renewable or alternative energy solutions… Employing this strategy for the next decade calls for expanded and updated Federal environmental performance goals with a clear overarching objective of reducing greenhouse gas emissions across Federal operations and the Federal supply chain.

A. Purpose

This document provides Federal Executive departments and agencies (agencies) with clarifying instructions regarding implementation of E.O. 13693, *Planning for Federal Sustainability in the Next Decade*. This document revokes and supersedes the *Instructions for Implementing Executive Order 13423* issued by the Council on Environmental Quality (CEQ) on March 29, 2007. CEQ and other agencies have also issued various implementing instructions, and guidance regarding E.O. 13514. The following instructions remain in effect: Sustainable Locations for Federal Facilities of September 15, 2011; Sustainable Practices for Designed Landscapes of October 31, 2011, as supplemented on October 22, 2014; Federal Greenhouse Gas Accounting and Reporting Guidance [Revision 1] of June 4, 2012; and Federal Agency Implementation of Water Efficiency and Management Provisions of Executive Order 13514 of July 10, 2013.

These Implementing Instructions (Instructions) are issued under the authority of section 4(e) of E.O. 13693. These Instructions shall be followed by agencies subject to the implementing requirements, objectives and goals of E.O. 13693 and may be updated or amended periodically by CEQ as appropriate. Agencies may issue supplementary internal instructions or guidance regarding implementation of E.O. 13693 consistent with these Instructions or other guidance documents issued by CEQ or required under E.O. 13693.

E.O. 13693 and these Instructions shall be implemented consistent with applicable law and international obligations, and subject to the availability of appropriations. In this document, "must" is used to describe statutory or regulatory requirements; "shall" is used to provide direction to agencies in implementing the E.O. requirements; and "should" or "may" are used to describe best practices. These Instructions provide guidance regarding compliance with E.O. 13693, but do not supersede or invalidate for any existing laws, regulations or other legal requirements. If there is any conflict between these Instructions and a statute, regulation, or executive order, the statute, regulation, or executive order governs. 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.

B. Overarching Policy and Directives

In implementing E.O. 13693, each agency and its staff shall apply the following overarching policies and directives:

- **Leading by Example**. Each agency is responsible for contributing to the Government's position as a leader in pursuing the goals and applying the concepts of sustainability to Federal operations, policies and programs.
- **Accountability**. Agencies shall ensure that agency staff, managers, and senior leadership are fully aware of, and supported in their role in, implementing agency environmental and energy plans and achieving planned goals. Agencies shall also ensure that these individuals are both empowered and held accountable for their contribution towards success of agency plans.
- **Planning**. Agencies shall plan for and integrate sustainability improvement requirements into their overall budget processes.
- **Mission Enabling**. Agencies shall recognize and acknowledge that sustainability and climate resilience and preparedness contribute to the success and effectiveness of the overall mission of the Federal government and serve to support and enhance each agency's primary mission.
- **Community**. Federal facilities and personnel shall be good neighbors to the citizens they serve and in the communities where they are located and operate.
- **Continual improvement**. Agencies shall strive to continually identify and pursue new opportunities to improve the sustainability of Federal operations and shall review ongoing actions for effectiveness.
- **Life-Cycle Cost Effective**. Agencies shall consider full life-cycle costs and savings in planning and implementing projects and making cost-effectiveness determinations about investments in capital assets and services. Where projects have net benefits, agencies shall consider maintaining or expanding those projects while agencies shall consider reassessing, altering, or discontinuing unsuccessful or under-performing projects. In some cases, evaluation of life-cycle costs may result in a higher up-front cost with significantly lower maintenance costs, or longer life.
- **Transparency**. Agencies shall ensure that information about their environmental and energy programs, including progress towards agency goals, is readily available to the public.
- **Conserve and Reduce First**. Agency use of water, energy, and material resources shall be minimized to limit the impacts of their use. Likewise operational elements such as travel and fleet size shall be managed to optimize agency benefit while limiting associated negative impacts.
- **Greenhouse Gas Assessment**. Federal sustainability goals are well served when agencies consider how planned actions will affect greenhouse gas reduction efforts.

C. Governance, Oversight and Organization

1. Steering Committee *(E.O. 13693, Section 4)*

Federal Interagency Sustainability Steering Committee (Steering Committee) – The Steering Committee established under section 4(a) of E.O. 13693 continues the long-standing practice that recognizes the critical contribution of agency senior leadership to the successful implementation of executive orders. As in the past, the Steering Committee members have a collective responsibility to advise CEQ and Office of Management and Budget (OMB) on the effectiveness of the goals and targets established in E.O. 13693 and to share with other senior managers across the Federal community, successful best practices, as well as challenges addressed and lessons learned in implementing sustainable practices under the E.O. The Steering Committee shall meet at least four times per year: twice to receive and discuss reports reflecting each agency's progress and status towards the goals of

E.O. 13693, and twice to discuss agency suggestions and best practices to promote sustainability across the Federal community.

2. Chief Sustainability Officers *(E.O. 13693, Sections 6 and 9)*

CEQ, OMB and the Federal Chief Sustainability Officer – E.O. 13693 clearly delineates the authorities for organization and oversight responsibilities of CEQ, the OMB, and the Federal Chief Sustainability Officer. Therefore no further instruction regarding those authorities is necessary.

Agency Chief Sustainability Officer (CSO) – The position of agency CSO is similar to the position previously known as the agency Senior Sustainability Officer. E.O. 13693 directs that the head of each agency designate a CSO. Each agency's CSO is accountable for implementing E.O. 13693 within the CSO's agency and shall coordinate with other agency senior leadership such as the agency's Chief Acquisition Officer to ensure agency policies and programs reflect the requirements of the E.O. Agency CSOs are also responsible for ensuring appropriate agency staff are working to implement E.O. 13693.

E.O. 13693 directs each CSO to develop and implement an agency-wide strategic process that coordinates appropriate agency functions and programs to ensure that those functions and programs consider and address the directives and goals of the E.O. As such, CSOs shall identify relevant functions and programs and identify opportunities to strategically leverage resources.

The CSOs for both Principal and Contributing agencies as defined in E.O. 13693 serve as the agency representatives to the Steering Committee and are responsible for providing any specific recommendation regarding implementation of the E.O. to CEQ and OMB. In addition to the responsibility of providing reports, information, and assistance necessary to implement E.O. 13693, agency Chief Sustainability Officers may request that the Chair of CEQ and Director of OMB consider adjusting the baseline for goals and targets established in the E.O. when there is clear evidence that the agency has experienced a change of greater than 5% in the value used to measure the agency baseline for a specific goal due to agency space consolidation or as circumstances otherwise merit.

3. Principal and Contributing Agencies *(E.O. 13693, Sections 3, 7, 8, and 10-15)*

CEQ recognizes that each agency plays a role in achieving the Federal government's goals and targets. Certain agencies are responsible for the majority of operational impacts including elements such as greenhouse gas (GHG) emissions and energy and water use. These agencies also manage the majority of the Federal fleet and also are responsible for a significant portion of the Federal Government's spending on goods and services. Under E.O. 13693, these agencies are named Principal agencies and are formally defined as agencies subject to the Chief Financial Officers Act (CFOA) and the OMB scorecard process under section 5(b) of the E.O. Principal agencies are only those agencies listed in the CFOA and any agencies that are not listed in the CFOA but which are subject to the OMB scorecard.

The duties of Principal agencies under E.O. 13693 reflect their clear and unambiguous role in supporting overall Federal government sustainability. In carrying out this responsibility, the Principal agency CSO is charged with a number of actions under including actions to receive progress reports, address challenges identified by agency components, and support leadership in responsible operating divisions, bureaus, or commands. Principal agency CSOs are also responsible for leading by example in interacting with the community and considering State, local, and tribal priorities and by considering actions that go beyond the specific geographic and operational limitations of the E.O. E.O. 13693 also requires that the Principal agency CSOs take an active role in supporting sustainable agency fleet

management. Finally, E.O. 13693 charges the Principal agency CSO with considering the impact of government leases and contracts on the agency's ability to comply with the goals of the E.O. and supporting continual improvement through appropriate implementation of formal environmental managements systems where those systems have proven effective.

Principal agencies include the scorecard agencies listed below:

Department of Homeland Security (DHS)	Environmental Protection Agency (EPA)
Department of Commerce	General Services Administration (GSA)
Department of Defense (DOD)	Department of Health and Human Services
Department of Energy (DOE)	Department of Housing and Urban Development
Department of Education	National Archives and Records Administration
Department of the Interior	National Aeronautics and Space Administration
Department of Justice	Office of Personnel Management (OPM)
Department of Labor	Smithsonian Institution
Department of State	Social Security Administration
Department of Transportation	Tennessee Valley Authority
Department of the Treasury	U.S. Army Corps of Engineers
Department of Veterans Affairs	U.S. Department of Agriculture

Additionally, the United States Postal Service voluntarily receives an OMB scorecard and functions like a Principal agency.

Contributing agencies are defined as executive agencies that are not subject to the Chief Financial Officers Act and generally include Federal Boards, Commissions, and Committees. Contributing agencies play a significant role in pursuing sustainability across the Federal community and often have programs or policies which impact the sustainability of Federal actions. These agencies generally have a lesser operational presence than Principal agencies and the E.O. does not require the range of actions that are assigned to Principal agency CSOs.

4. Working Groups *(E.O. 13693, Section 4)*

Working Groups – For the purposes of guidance and policy recommendations, these Instructions are applicable to temporary interagency working groups established under section 4(k) of E.O. 13693 to provide recommendations to improve the effectiveness and efficiency of practices to achieve the goals of the E.O. These Instructions are also applicable to all relevant existing (standing) working groups.

Federal interagency working groups not established under E.O. 13693 may also advise CEQ on implementation issues but are not subject to these Instructions. Guidance issued by those working groups shall not be considered formal guidance for the purposes of implementing E.O. 13693.

Working groups should consult and take into consideration efforts of related practice groups as appropriate.

Although not a working group under E.O. 13693, CEQ recognizes the long-standing Interagency Environmental Management System (EMS) Community of Practice as an advisory group to inform agency-wide sustainability coordination and implementation methods.

Standing Working Groups – The following standing sustainable practice working groups established by previous implementing instructions will be maintained in their advisory role to the Steering

Committee and CEQ: the Interagency Sustainability Working Group, Interagency Energy Management Task Force, Interagency Committee on Alternative Fuels and Low Emission Vehicles (INTERFUEL), Federal Sustainable Acquisition and Materials Management Practices Workgroup, Motor Vehicle Executive Council and the Federal Electronics Stewardship Working Group. The previous requirement for the agency chairing each working group to independently issue guidance for E.O. 13423 is hereby revoked although those agencies remain responsible for managing the recommendations of the applicable workgroup. Standing workgroups shall work with CEQ to provide assistance and draft recommendations for implementation instructions or other guidance to be issued by CEQ for the implementation of E.O. 13693. The standing working groups, shown by their sustainable practice area of responsibility, name and lead agency, are identified in the table below.

Table 1 – Standing Working Groups

Name of Working Group	Area of responsibility	Lead Agency or Office
Interagency Sustainability Working Group	Sustainable practices in new and existing building design and construction	Department of Energy – Federal Energy Management Program and General Services Administration, Office of Federal High-Performance Green Buildings
Interagency Energy Management Task Force	Energy and water conservation and efficiency and renewable energy in Federal facilities	Department of Energy – Federal Energy Management Program
INTERFUEL	Fleet – fuels and management	Department of Energy – Federal Energy Management Program
Federal Sustainable Acquisition and Materials Management Practices Workgroup	Acquisition, procurement, pollution preventions, and solid waste and materials management	General Services Administration, Environmental Protection Agency, and Department of Energy
Motor Vehicle Executive Council	Long-term strategic vision for the management of government-wide motor vehicles	General Services Administration
Federal Electronics Stewardship Working Group	Acquisition, management and disposal of electronics	General Services Administration, Environmental Protection Agency, and Department of Energy

Temporary Topical Working Groups – Topical interagency working groups established under section 4(k) of E.O. 13693 help ensure that shared agency expertise and knowledge is harnessed to provide guidance and recommendations to achieve the goals and requirements of the E.O. These working groups focus on, and respond to, unique implementation issues and are charged with responding typically within 120 days of the first meeting of the group. In each case, the agency identified as leading each topical effort is responsible for ensuring a coordinated interagency, Government-wide approach is taken to reviewing and developing recommendations. Other agencies assigned to or otherwise participating in these working groups should support and contribute to the success of the workgroup by representing their agency's position in matters before the working group.

Working Group Accountability and Responsibilities – Working groups are responsible for assisting the Steering Committee, CEQ, and OMB by providing recommendations for policies, guidance, reporting metrics, and other tools to CEQ to improve agency implementation of E.O. 13693. Both the standing workgroups and the temporary topical workgroups also provide a forum for information exchange and coordination of interagency efforts.

It is critical that working groups recognize that the development of Federal recommendations, guidance and, proposed policies is an inherently Governmental action. While working groups may gather information relevant to the development of policies, guidance, and recommendations through the informal exchange of information from entities outside of the Federal community, working groups must avoid any real or potential conflict of interest that might arise from obtaining direct recommendations from entities outside of the Federal community—particularly those groups or individuals that might otherwise benefit from the actions or recommendations of the working group—including Federal contractors.

Working groups shall ensure that their actions and recommendations regarding responsibilities under E.O. 13693 are impartial and independent from entities outside of the Federal community (including Federal contractors) and they must not imply endorsement, recommendation, or favor by the Federal Government with regard to such entity. Working groups may arrange for presentations from non-governmental entities to provide non-routine background listening sessions for relevant topics when the intent is to obtain information or viewpoints from individual attendees as opposed to advice, opinions, or recommendations from the entities acting in a collective mode. Working groups, however, should use care to avoid relying too heavily on other outside groups or entities when their missions and interests are not aligned with the Federal Government for purposes of obtaining advice and recommendations relevant to their responsibilities.

5. Regional Coordination *(E.O. 13693, Section 10)*

E.O. section 10: *Regional Coordination.*

Within 180 days of the date of this order, each EPA and GSA Regional office shall in coordination with Federal Executive Boards established by the Presidential Memorandum of November 10, 1961 (The Need for Greater Coordination of Regional and Field Activities of the Government), DOD and other agencies as appropriate, convene regional interagency workgroups to identify and address: (a) sustainable operations of Federal fleet vehicles, including identification and implementation of opportunities to use and share fueling infrastructure and logistical resources to support the adoption and use of alternative fuel vehicles, including E-85 compatible vehicles, zero emission and plug-in hybrid vehicles, and compressed natural gas powered vehicles; (b) water resource management and drought response opportunities; (c) climate change preparedness and resilience planning in coordination with State, local, and tribal communities; and (d) opportunities for collective procurement of clean energy to satisfy energy demand for multiple agency buildings.

E.O. 13693 requires that EPA and GSA regional offices coordinate efforts to establish interagency working groups with other regionally-based agencies to support implementation of the E.O. at the regional and local level. The Federal operational portfolio (buildings and fleet) is found across the Nation, and agencies should pursue regional coordination where there is a concentration of Federal offices and activities to leverage the resources of the Federal community to support E.O. implementation across a broad range of agencies in both size and responsibility. E.O. 13693 references specific activities including regional development of fueling infrastructure for alternative fuel vehicles including electric vehicles and collective procurement of clean energy to satisfy energy demand for multiple Federal buildings. E.O. 13693 also directs regional agencies to combine and coordinate planning efforts to address water resource management and drought response opportunities and climate change preparedness and resilience planning. Where appropriate, the Department of Defense and Federal Executive Boards should also play active roles in these working groups, and Federal actions should be coordinated with state, local, and tribal communities. E.O. 13693 section 10 establishes a 180-day timeframe for creation of the regional working groups.

6. Employee Education and Training *(E.O. 13693, Section 11)*

E.O. section 11: *Employee Education and Training.*

Within 180 days of the date of this order, the Office of Personnel Management, in coordination with DOE, GSA, EPA, and other agencies as appropriate, shall: (a) consider the establishment of a dedicated Federal occupational series for sustainability professionals and relevant positions that directly impact the achievement of Federal sustainability goals and if appropriate, prepare and issue such occupational series; and (b) initiate the inclusion of environmental sustainability and climate preparedness and resilience into Federal leadership and educational programs in courses and training, delivered through electronic learning, in classroom settings, and residential centers, particularly developmental training for Senior Executive Service and GS-15 personnel.

Within 180 days, the Office of Personnel Management (OPM) shall consider, and if appropriate, prepare and issue, a dedicated occupational series to enhance the Federal government's ability to recruit and hire professionals with relevant training and experience in areas such as environmental sustainability, greenhouse gas management, and climate preparedness and adaptation. In addition, OPM should consider applicability to roles that directly impact achievement of Federal sustainability goals, such as energy managers, federal facility managers, building operations professionals, and specialized program managers.

Within 180 days, OPM shall also initiate inclusion of environmental sustainability and climate preparedness and resilience into leadership and educational programs for Federal personnel, particularly Senior Executive Service and GS-15 personnel. In doing so, OPM should incorporate relevant topics and subject matter into its existing courses and training programs, delivered through electronic learning, in classroom settings, and residential centers, and in addition, consider potential for new offerings that will expand the availability of such training to Federal employees whose professional responsibilities might include planning, program implementation, management decisions, or other activities that impact achievement of E.O. goals.

DOE, GSA, EPA, and other agencies, as appropriate, should provide support to OPM and ensure that their own educational and training programs for the Federal workforce complement these efforts.

7. Revocations and Conforming Provisions; Limitations; Exemption Authority; and Definitions *(E.O. 13693, Sections 16-20)*

Sections 16 through 20 of E.O. 13693 are self-explanatory and no further instruction regarding those sections is necessary.

D. Planning *(E.O. 13693, Sections 5 and 14)*

Pursuant to section 14 of E.O. 13693, agencies are required to develop, implement, and annually update an annual agency Strategic Sustainability Performance Plan (SSPP). This requirement is similar to the Strategic Planning requirement that was in section 8 of E.O. 13514. Each agency SSPP is due annually to CEQ and OMB through the OMB MAX Collect process at the end of June, and the SSPP is based on guidance and a template issued by CEQ. Each annual SSPP shall include:

- a policy statement committing the agency to compliance with environmental and energy statutes, regulations, and executive orders;
- agency size and scope;

- specific agency strategies to accomplish each of the various E.O. goals, as applicable, including approaches for achieving the goals, milestones and quantifiable metrics for agency implementation;
- consideration of the effects of climate change on the agency's operations and programs; and
- evaluation of past performance and identification of opportunities for improvement to extend or expand projects that are life-cycle cost effective and reassess, alter, or discontinue under-performing projects.

Agency SSPPs are also expected to include as appendices the agency's most recent annual Vehicle Allocation Methodology (VAM) report and Fleet Management Plan (FMP), Multimodal Access Plan (MAP), and where necessary other unique plans that are likely to be prepared less frequently than annually. Additionally, as required by E.O. 13653, agencies shall report on progress made or provide updates to their Climate Adaptation Plans as an appendix to their annual SSPP.

In accordance with E.O. 13693, Principal agencies shall complete all elements of the SSPP template, while Contributing agencies are only required to submit an Executive Summary. Although not required to do so, contributing agencies may elect to prepare a more detailed SSPP. Each annual SSPP is subject to the review of CEQ, and the review and approval of OMB. Each Principal agency shall provide its SSPP and updates to the Chair of CEQ and Director of OMB through the OMB MAX Collect process. Each Principal agency shall make the SSPP publicly available on its website once approved.

II. Agency Greenhouse Gas Emissions Reductions

E.O. section 2: *Agency Greenhouse Gas Emission Reductions. The head of each agency shall…propose percentage reduction targets for agency-wide reductions of scope 1 and 2 and scope 3 greenhouse gas emissions in absolute terms by the end of the fiscal year 2025 relative to a fiscal year 2008 baseline.*

A. Scope 1 and 2 Greenhouse Gas Emissions

1. Setting Reduction Targets

In fiscal year (FY) 2010, under E.O. 13514, agencies were asked to set combined scope 1 and 2 GHG emission reduction targets for FY 2020; successful achievement of individual agency goals taken together would result in a Federal Government commitment to a GHG scope 1 and 2 emissions reduction of approximately 28% by FY 2020 from a FY 2008 baseline.

E.O. 13693 recognizes the opportunity for the Federal Government to reduce targeted scope 1 and scope 2 GHG emissions by at least 40% by FY 2025 from a FY 2008 baseline. Section 2 of E.O. 13693 directs individual agencies to set scope 1 and 2 GHG emission reduction targets for FY 2025 from a FY 2008 baseline. When these new targets are approved by CEQ and OMB they will replace the existing 2020 targets.[1]

Agencies that previously set FY 2020 GHG scope 1 and 2 emissions reduction goals under E.O. 13514 are required to submit their FY 2025 GHG emissions reduction commitment on or before June 17, 2015. The commitments should be signed by the head of each agency and addressed to Shaun Donovan, Director, Office of Management and Budget, and Christina Goldfuss, Managing Director, Council on Environmental Quality. The signed agency commitment should be transmitted electronically to Ali Zaidi, OMB, and Kate Brandt, Federal Chief Sustainability Officer on or before June 17, 2015. The

[1] Agencies may use the Determining Agency Reduction Targets (DART) tool, developed by the DOE's FEMP to set their GHG emission reduction targets.

commitment should be in letter form, no longer than one page, and indicate the agency's total current FY 2008 baseline for scope 1 and 2 emissions and its reduction targets for FY 2025. If an agency feels it is necessary, it can add a one page addendum to its commitment letter to clarify the rationale for its emissions reduction target. CEQ and OMB will contact that agency if further discussions are appropriate.

To assist agencies in determining their FY 2025 GHG scope 1 and 2 targets, DOE's Federal Energy Management Program (FEMP) has made available to agencies a new version of the Determining Agency Reduction Targets (DART) tool, DART 2. The tool is pre-populated with FY 2014 agency data and forecasts each agency's GHG scope 1 and 2 emissions in FY 2025 based on the energy efficiency and clean energy targets set forth in E.O. 13693. DART 2 can be used to analyze "what if" scenarios and highlight the impact of various strategies for meeting E.O. 13693 GHG emissions reductions goals. In DART 2, share of "renewable electric energy," share of "alternative energy" by type, and agency operational changes, such as changes in facility footprint, can all be evaluated.

Agencies should review E.O. 13693 requirements for clean energy, renewable electricity, and alternative energy when developing their GHG emission reduction targets. The definitions of "clean energy," "renewable electric energy," and "alternative energy" are provided in E.O. 13693, sections 19(c), 19(e), and 19(v), respectively. These definitions, along with these Instructions, provide more detail of agency responsibilities under E.O. 13693, sections 3(b), 3(c), 3(d), and 3(e).

As stated in section 18 of E.O. 13693, where appropriate, the target shall exclude direct emissions from excluded vehicles and equipment and from electric power produced and sold commercially to other parties as the primary business of the agency. Other exclusions for national security purposes and certain overseas facilities as well as accounting for biogenic emissions remain in place per *Federal Greenhouse Gas Accounting and Reporting Guidance (Revision 1), June 4, 2012.*

2. Reporting Nitrogen Trifluoride (NF_3)

In section 16(e) of E.O. 13693, nitrogen trifluoride (NF_3) was added to the list of heat-trapping gases in the definition of GHG to be reported by agencies. This is in addition to reporting requirements for carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride under previous executive orders and Federal GHG accounting guidance.

NF_3 is a potent greenhouse gas (GHG) that is predominantly used in the cleaning of equipment that manufactures liquid-crystal displays and silicon-based thin-film solar cells. During the manufacturing process, most of the NF_3 breaks down into compounds that are not GHGs; however, a small percentage of the NF_3 survives and a small percentage is converted into another potent greenhouse gas, perfluoromethane (CF_4). Unless post manufacturing exhaust streams are adequately treated, both of these GHGs are released into the atmosphere. NF_3 is also used in hydrogen fluoride and deuterium fluoride lasers, which are types of chemical lasers. NF_3 has a global warming potential (GWP) 17,200 times greater than that of CO_2 when compared over a 100 year period. Its use in the electronics industry has increased rapidly, and is expected to continue to increase.

In January 2017, agencies shall report their FY 2016 emissions of NF_3, based on their use of the chemical and estimated GHG emissions therefrom, per future technical updates to the existing Federal Greenhouse Gas Accounting and Reporting Guidance. An FY 2008 baseline for NF_3 emissions will not be established until such time as agency reporting data provides a reasonable basis to do so.

NF_3 emissions do not have to be considered when agencies develop their FY 2025 reduction targets for GHG scope 1 and 2 emissions, which are due June 17, 2015.

B. Scope 3 Greenhouse Gas Emissions

1. Setting Reduction Targets for Existing Reporting Categories

In FY 2010, E.O. 13514 directed agencies to set reduction targets for FY 2020 from a FY 2008 baseline for six categories of indirect scope 3 GHG emissions; individual agency goals taken together resulted in a Federal government commitment of approximately 13% reduction by FY 2020 from a FY 2008 baseline. E.O. 13693 commits the Federal Government to continue progress in scope 3 emission reductions and asks agencies to set scope 3 emissions reduction targets for FY 2025 from a FY 2008 baseline.

Agencies currently report on six categories of scope 3 emissions: employee commuting, business air travel, business ground travel, transmission, and distribution losses from purchased electricity use, contracted solid waste disposal and contracted waste water treatment. Emissions from these six categories shall be combined to make up the total goal subject scope 3 emissions.

To calculate a FY 2025 scope 3 emissions reduction target, each agency should consider their FY 2008 baseline emissions for these existing scope 3 emissions categories, assess progress to date in reducing emissions in each category, and reassess their FY 2020 reduction commitment. Each agency shall also consider E.O. 13693 section 7(f) provisions about "sustainable commuting" and should follow section III.C.9. of these Instructions (which cover the development of a Multimodal Access Plan (MAP) for commuters) when considering their FY 2025 commuter emissions reduction targets.

Each principal agency plus agencies that previously set goals in 2010 should submit a single scope 3 emissions reduction target for 2025, expressed as a percentage.

The commitments should be signed by the head of each agency and addressed to Shaun Donovan, Director, Office of Management and Budget, and Christina Goldfuss, Managing Director, Council on Environmental Quality. The signed agency commitments should be transmitted electronically to Ali Zaidi, OMB, and Kate Brandt, Federal Chief Sustainability Officer on or before June 17, 2015.

GSA's Carbon Footprint Tool can aggregate energy use and operational data across agencies, calculate GHG emissions, and transcribe the data into FEMP's Annual Greenhouse Gas and Sustainability Data Report workbook. See the GSA's Carbon Footprint Tool for assistance: https://www.carbonfootprint.gsa.gov/.

Agencies can use the workbooks available on DOE's FEMP website to test "what if" scenarios on these scope 3 emissions for FY 2025. See the DOE's FEMP Annual Greenhouse Gas and Sustainability Data Report website: http://energy.gov/eere/femp/downloads/annual-greenhouse-gas-and-sustainability-data-report.

2. Reporting on Energy Use and GHG Emissions in Leases

E.O. section 3(h)(iv)(B): *Sustainability Goals for Agencies, improve building efficiency, performance and management by including in all new agency lease solicitations over 10,000 rentable square feet...requirements for building lessor disclosure of carbon emission or energy consumption data for that potion of the building occupied by the agency that may be provided by the lessor through sub-metering or estimation from prorated occupancy data, whichever is more cost effective*

Section 3(h)(iv)(B) and section 3(h)(v) of E.O. 13693 initiate energy reporting and GHG emissions reporting for fully-serviced building leases. Beginning in FY 2016, all new agency lease solicitations for fully-serviced building leases over 10,000 rentable square feet (RFS) shall include requirements for lessors to disclose energy consumption and carbon emissions data.

The term "fully-serviced lease" refers to a lease in which the monthly rent includes the cost of certain types of services, which generally include utility costs, janitorial services, trash collection, water and sewer charges, property taxes, etc. Space assignments in GSA owned buildings are also generally "fully-serviced."

The energy and associated emissions data provided by landlords shall be sufficient to accurately and consistently account for fully-serviced leased space GHG emissions per Federal GHG gas reporting protocols. Because there are various GHG emissions reporting protocols and differences in interpreting those protocols, obtaining energy and other primary data from building owners may be a more efficient method of calculating and reporting emissions from fully-serviced leased buildings and insure more consistent Federal GHG emissions reporting.

For buildings only partially occupied by an agency, agencies should use data obtained through sub-metering or a pro-rated share of occupancy, whichever is more cost effective. Where sub-metering includes only agency space and not building common space, a pro-rata share of common space carbon emission/energy consumption data should be allocated to the tenant agency.

Under section 3(h)(iv)(B) and section 3(h)(v), for space acquired by GSA from private landlords, GSA will provide energy consumption and carbon emissions data to tenant agencies. GSA will also provide energy consumption/carbon emissions data to tenant agencies in GSA owned and managed buildings where tenant agencies occupy GSA space through new "fully-serviced" Occupancy Agreements.

Agencies that initiate their own leases shall do their own reporting under this goal. Generally, agencies occupying GSA owned and leased space subject to the requirements of section (3)(h)(iv)(B) and section (3)(h)(v) will report their pro-rata share of energy consumption and emissions from these buildings as scope 3 emissions. GSA will also be reporting emissions from those same buildings as scope 1 and 2 emissions. This does not represent double counting of emissions; rather, it conforms with the general principle that a part of any supplier's (including leased space providers) scope 1 and 2 emissions are also a part of the procurer's/user's scope 3 emissions.

In some instances, agencies may have established different organization boundaries for their GHG inventories that deviate slightly from common practice. Federal GHG accounting guidance allows this deviation. These Instructions, particularly the reporting protocols discussed in the previous paragraph, are not meant to change the GHG inventory management approaches currently used by an agency nor require a rigid scope classification for fully-serviced leased buildings.

GSA will collect and provide energy and emissions data to tenant agencies it services for spaces covered by E.O. 13693, sections 3(h)(iv)(B) and 3(h)(v). GSA will not collect nor provide energy/emissions data for space where tenant agencies that have received a delegation of authority from GSA to manage the buildings, including the direct payment of utilities, they occupy. The tenant agency is responsible for tracking and reporting that energy consumption and greenhouse gas emissions data.

Exercising an option within an existing lease to extend the term is not subject to the terms and conditions of E.O. 13693, section 3(h)(iv)(B) or 3(h)(v). However, any action that goes beyond simply exercising an option to extend the term of occupancy, or involves substantial changes in the operation conditions or tenant fit out, or requires more than a simple contract amendment document, shall comply with E.O. 13693, sections 3(h)(iv)(B) and 3(h)(v).

GHG emissions reporting (and energy data reporting) for fully-serviced leased space will necessarily be an evolutionary process. Agencies should expect process and procedural changes over time as the Federal Government gains familiarity with this reporting class, data collection and best practices improve, tool and protocols to estimate and report fully-serviced leased space emissions are developed and the portion of primary data versus estimated emissions data increases.

Additional information on energy and emissions reporting requirements in new leases can be found in these Instructions in section III.D.5. entitled, *Buildings: Energy Efficiency Requirements and Energy and Emissions Reporting for Lease Solicitations*.

Target: Beginning in FY 2016, all new lease solicitations over 10,000 RSF shall include language that requires the landlord to at least annually report energy and other data sufficient to calculate GHG emissions associated with the occupied space.

Metric: For each fiscal year, percent of new lease solicitations over 10,000 RSF with energy and GHG reporting requirements.

Milestone: Annual reporting of percent of new lease solicitations over 10,000 RSF with energy and GHG reporting requirements.

3. Resources for Estimating Emissions for Leased Buildings

Leased Buildings represent a large source of Federal Government GHG emissions. CEQ, in coordination with GSA, DOD, EPA, and DOE, will develop guidance and tools that can estimate agency emissions from leased space by major property building type and identify emissions reduction potential. CEQ, in coordination with GSA, DOD, EPA, and DOE, will also develop reasonable timelines for establishing baseline estimates of emissions associated with fully leased space. The tools and guidance developed will assist agencies in developing initial emissions estimates for FY 2016, which agencies shall include in their scope 3 emissions reporting due on January 31, 2017. Agencies are not being asked to begin to set scope 3 reduction targets on fully-serviced leased buildings emissions until FY 2016.

Because leased buildings rarely have major energy conservation overhauls during their lease term, a dominant determinant in emissions associated with leased buildings is the total amount of space leased. At the time when agencies are asked to consider emissions reductions in their fully-serviced leased space, they should refer to the *National Strategy for the Efficient Use of Real Property 2015-2020* and the companion Management Procedures Memorandum No. 2015-01, *Implementation of OMB Memorandum M-12-12 Section 3: Reduce the Footprint* ("*Reduce the Footprint*"), released by OMB on March 25, 2015, as they estimate their space inventories through FY 2025. Agencies should also factor in any other known and significant changes in the energy performance of major leased buildings that

will remain in their inventory through FY 2025 when developing FY 2025 reduction targets. For more information on space reductions and the *National Strategy for the Efficient Use of Real Property 2015-2020* and *Reduce the Footprint* effort, see section III.D.6. Buildings: New Buildings and Leases Optimize Space Usage and Consideration of Existing Transportation Infrastructure.

For information on the *National Strategy for the Efficient Use of Real Property 2015 – 2020* and *Reduce the Footprint* see: https://www.whitehouse.gov/blog/2015/03/25/national-strategy-reducing-Federal-government-s-real-estate-footprint and http://www.performance.gov/initiative/manage-property/home.

4. GHG Accounting Guidance

A technical addendum to the *Federal Greenhouse Gas Accounting and Reporting Guidance (Revision 1), June 4, 2012* will be developed to address GHG emissions associated with leased space. This addendum may include guidance on issues such as: whether and how to develop the initial fully-serviced leased space emissions estimates for agencies, when to establish an emissions baseline for fully-serviced leased buildings emissions, conventions for reporting fully-serviced leased space under 10,000 RSF, transition of estimated to actual data, how purchases of green power, green power RECs by tenants and/or lessors should be treated, and GHG scope classification of emissions associated with fully-serviced leased space.

C. Strategies and Tools

For an overview of Federal GHG reporting tools, protocols, and guidance see the Greenhouse Gas section of FedCenter:
https://www.fedcenter.gov/programs/greenhouse/inventoryreporting/fempceqresources/index.cfm.

For a copy of the current Federal GHG reporting protocols see:
http://www.whitehouse.gov/sites/default/files/microsites/ceq/revised_federal_greenhouse_gas_accounting_and_reporting_guidance_060412.pdf.

GSA has developed a Carbon Footprint tool that can gather underlying energy use and efficiency data, calculate GHG emissions, and seamlessly transcribe the data into the workbooks submitted to the DOE Data Portal. See the GSA's Carbon Footprint Tool for assistance:
https://www.carbonfootprint.gsa.gov/.

III. Sustainability Goals for Agencies *(E.O. 13693, Section 3)*

A. Energy *(E.O. Sections 3(a), (b), (c), (d), (e))*

1. Energy Intensity

E.O. section 3(a)(i): *reducing agency building energy intensity measured in British thermal units per gross square foot by 2.5 percent annually through the end of fiscal year 2025, relative to the baseline of the agency's energy use in fiscal year 2015 and taking into account agency progress to date, except where revised pursuant to section 9(f)*

Target: Reduce energy intensity in Federal buildings by 25% by FY 2025 relative to FY 2015 baseline.
Milestones: 2.5% per year reduction in energy intensity relative to FY 2015.
Baseline: FY 2015.

Metric: British thermal units (Btus) of energy used per gross square foot (GSF) of Federal building space (Btu/GSF).

Existing Congressional mandates and Executive policy have directed agencies to reduce their *energy intensity* – the energy consumed (calculated in British thermal units, or Btus) per gross square foot (GSF) of Federal building space (Btu/GSF) – by 3% per year from a FY 2003 baseline through FY 2015. E.O. 13693 extends the *Energy Intensity Target* by directing agencies to reduce Btu/GSF by 2.5% per year from a FY 2015 baseline through FY 2025. As in the past, agencies that have projects that save source energy but increase site-delivered energy (*i.e.*, on-site CHP) will receive a "site/source credit" when they calculate their energy use and energy intensity. The policy background and methodology for calculating and applying the credit is described in DOE's Reporting Guidance for Federal Agency Annual Report on Energy Management (per 42 U.S.C. 8258), November 2014, (Attachment 3).

Credit for Energy Intensity Improvements in Goal-Excluded Buildings – The exclusions of certain Federal facilities codified in current statute, 42 U.S.C. § 8253(a)(2) and (c), apply under E.O. 13693. Even though some Federal buildings are excluded from the energy intensity reduction targets, E.O. 13693 encourages efficiency upgrades at goal-excluded buildings by allowing agencies to credit verified energy efficiency improvements toward the agency's progress on the Energy Intensity reduction goal. Measured and verified annual Btus savings from an efficiency improvement in a goal-excluded building are deducted from the total Btus consumed by the agency's goal-subject buildings while holding gross square feet constant. FEMP guidance for goal-excluded buildings can be obtained at http://energy.gov/eere/femp/downloads/guidelines-establishing-criteria-excluding-buildings-energy-performance. FEMP will produce additional guidance on how to measure, verify, and report energy savings at goal-excluded buildings.

On-Site Renewable Electric Energy Contributes to Energy Intensity Reduction – Btus consumed from renewable energy systems installed on a Federal facility and from which an agency retains the renewable energy certificates (RECs), buys replacement RECs, or can otherwise confirm ownership of the environmental attributes are also deducted from the numerator of the energy intensity equation. This applies to renewable energy systems installed on both goal-subject and goal-excluded buildings.

The adjustments for goal-excluded buildings and on-site renewable energy, described above, impact the equation for calculating Energy Intensity as follows: [2]

$$Energy\ Intensity = \frac{(\text{Btus in GoalSubject Buildings}) - (\text{Confirmed Btu Savings from GoalExcluded Buildings}) - (\text{OnSite Renewable Energy Btus})}{\text{Gross Square Feet of GoalSubject Buildings (GSF)}}$$

Normalization for Weather – CEQ will work with FEMP to develop guidance on adjusting agency energy intensity performance based on locality-specific benchmarking findings for individual buildings. Agencies shall annually benchmark their metered buildings covered under 42 U.S.C. § 8253(e). These building-level findings may be used to provide a weather normalization adjustment to the agency's energy use intensity, which could also include adjustments due to climate change. Using benchmarking data released to DOE's web-based Compliance Tracking System, weather-adjusted Btu consumption will be compared to unadjusted Btu consumption. If weather-adjusted Btu consumption is lower than unadjusted consumption, then the weather-adjusted Btu will be used for that building. The adjustment at

[2] See Attachment 3 of FEMP's *Reporting Guidance for Federal Agency Annual Report on Energy* for other subtractions for goal-subject buildings.

the agency-level is the subtraction of the difference between weather-adjusted and unadjusted Btu consumption for all benchmarked buildings covered under 42 U.S.C. § 8253(f).

All adjustments to agency energy intensity metrics will be accounted for separately and FEMP's annual report data tables will transparently show progress from the base year with and without the adjustments. The credit is applied to the agency's overall Btu (for those buildings that have been benchmarked) and is an adjustment to the performance metric (Btu/GSF) used for FEMP and scorecard purposes.[3]

Adjustment for Agency Progress to Date – Agencies that achieve the FY 2015 (from the FY 2003 baseline) statutorily-required energy intensity reduction under 42 U.S.C. § 8253(a) may have less immediate opportunity to meet the new targets of 2.5% annual reductions thru FY 2025 from FY 2015 baseline. For purposes of scorecard assessment (assignment of green, yellow, red), agencies that achieved a 30% or greater reduction in energy intensity during the 2003 to 2015 goal period, but are under-performing on the 2015 to 2025 goal, may choose an alternative target of a combined total reduction in energy intensity of 47.5% from 2003 to 2025. Annual targets for scorecard tracking purposes will be based on the total adjusted percentage reduction required between 2015 and 2025 divided by 10 years.

Meters – Agencies should continue to meter their Federal buildings for energy (electricity, natural gas, and steam) and water, as required by section 543(e) of the National Energy Conservation Policy Act (NECPA) (42 U.S.C. § 8253(e)). FEMP metering guidance is available at http://energy.gov/sites/prod/files/2014/11/f19/metering_guidance.pdf.

The following recommended tools should be considered for achieving energy intensity goals:

E.O. section 3(a)(i)(A): *using remote building energy performance assessment auditing technology*

Remote building energy performance assessment auditing technology, or remote building auditing technology, is analytics software that leverages existing advanced metering infrastructure and building energy monitoring and control equipment to provide real-time data visualizations of a building's energy use and operations. Both the GSA[4] and DOD[5] successfully tested this technology in 2014. Agencies are encouraged to utilize remote auditing technologies at appropriate facilities to 1) improve energy use diagnostics, 2) monitor and measure energy demand, and 3) reduce the cost of on-site audits. Remote audit technology in combination with an on-site energy manager can provide the findings needed to fulfill comprehensive evaluation requirements of Energy Independence and Security Act of 2007 (EISA) section 432 (42 U.S.C. § 8253(f)(3)). As long as the findings identify potential efficiency measures and the associated implementation costs and energy or water savings, remote audit technology can supplement or replace a traditional audit for this requirement.

E.O. section 3(a)(i)(B): *participating in demand management programs*

Demand management programs, also known as demand-side management (DSM), are programs where electric utilities engage with customers to reduce or shift electricity consumption during peak-demand hours of the day (*i.e.*, business hours). For the energy intensity target, agencies can use DSM programs to reduce total electricity consumption during peak periods. For instance, an agency's DSM agreement

[3] Some agencies, such as DOD, may have buildings that are not, and may not be practically, registered in DOE's Compliance Tracking System. Such agencies may work with CEQ, OMB, and FEMP to determine if weather adjustments can be made for these buildings.

[4] http://www.gsa.gov/portal/content/192343

[5] https://www.serdp-estcp.org/News-and-Events/Blog/Expediting-Building-Energy-Audits

with a utility could require the agency to reduce its air conditioning load during hot summer days. The agency achieves this goal by turning off its building's air conditioning for brief intervals during specified time periods. By doing this, the agency reduces energy consumption and helps the electric utility avoid bringing high-cost peak generating resources online. Opportunities for DSM vary by region and utility market. Agencies are encouraged to implement DSM in their buildings and can consult with GSA, the Defense Logistics Agency (DLA), or their local electric utility for more information.

E.O. section 3(a)(i)(C): *ensuring that monthly performance data is entered into the Environmental Protection Agency (EPA) ENERGY STAR Portfolio Manager for covered buildings*

EPA's ENERGY STAR Portfolio Manager is an online tool for measuring and tracking energy and water consumption, as well as GHG emissions from buildings. Agencies can use the tool to track performance of one building or a whole portfolio of buildings in a secure online environment. Users enter consumption data, cost information, and operational use details and then the tool uses the data to track over 100 metrics. The metrics can be compared with a yearly baseline, national medians, and other buildings in an account-holder's portfolio. The tool is available at https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager.

Agencies have statutory requirements to benchmark metered buildings that are, or are part of, facilities covered under the requirements of 42 U.S.C. § 8253(f)(8). FEMP's guidance for these requirements is located at http://energy.gov/sites/prod/files/2014/09/f18/benchmarking_guidance08-2014.pdf.

E.O. section 3(a)(i)(D): *incorporating, where feasible, the consensus-based, industry standard Green Button data access system into reporting, data analytics, and automation processes*

The *Green Button* initiative is a utility-led effort that provides utility customers with easy and secure access to their energy use information. Customers can securely download detailed data on their energy use by clicking the Green Button icon on their electric utility's website. This information can help agencies obtain interval data from utility meters to help analyze energy inefficiencies within building systems based on hourly and/or daily consumption patterns. More information on the Green Button program, including a list of participating electric utility companies, can be found at http://energy.gov/data/green-button. FEMP is working on guidance for using Green Button at Federal facilities.

E.O. section 3(a)(i)(E): *implementing space utilization and optimization practices and policies*

The Federal Management Regulation: Assignment and Utilization of Space (41 CFR § 102-79.15) directs agencies to "provide assignment and utilization services that will maximize the value of Federal real property resources and improve the productivity of the workers housed therein." In July 2011 (subsequently updated in 2012), GSA published a document to assist agencies with optimal allocation of space to meet business goals, reduce operating costs, and promote an effective and productive workplace, available at http://www.gsa.gov/graphics/ogp/Workspace_Utilization_Banchmark_July_2012.pdf.

More recently, OMB announced the "Reduce the Footprint" policy (https://www.whitehouse.gov/sites/default/files/omb/financial/memos/implementation-reduce-the-footprint.pdf) and National Strategy for the Efficient Use of Real Property (https://www.whitehouse.gov/sites/default/files/omb/financial/national-strategy-efficient-use-real-property.pdf). GSA's Total Workplace program (http://www.gsa.gov/portal/content/178259) provides

guidance and solutions for agencies to rethink space to achieve efficiencies, increase productivity and meet sustainability goals.

E.O. section 3(a)(i)(F): *identifying opportunities to transition test-bed technologies to achieve the goals of this section*

Test-bed technologies, which have successfully achieved energy savings in pilot demonstrations but have not transitioned to large-scale commercial deployment, present opportunities for agencies to catalyze new technologies. GSA's Green Proving Ground[6] and DOD's Environmental Security Technology Certification Program (ESTCP)[7] are examples of test-bed technology demonstration programs.

E.O. section 3(a)(i)(G): *conforming, where feasible, to city energy performance benchmarking and reporting requirements*

Some state and local governments have benchmarking and reporting requirements for buildings in their jurisdictions. Agency participation supports the success of these local government programs and may encourage broader participation from other building owners. Agencies are expected to conform to benchmarking and reporting requirements, where feasible. Participation supports Federal Open Data goals and encourages efficiencies through greater transparency.

2. Data Center Efficiency

E.O. section 3(a)(ii) *improving data center energy efficiency at agency facilities by:*

(A) ensuring the agency chief information officer promotes data center energy optimization, efficiency, and performance;

(B) installing and monitoring advanced energy meters in all data centers by fiscal year 2018; and

(C) establishing a power usage effectiveness target of 1.2 to 1.4 for new data centers and less than 1.5 for existing data centers

Calculating Power Usage Effectiveness (PUE)

PUE is a measure of how efficiently a computer data center infrastructure uses energy. Specifically, it is the ratio of total energy use to that of information technology (IT) equipment.

$$PUE = \frac{Total\ (Data\ Center)\ Facility\ Annual\ Energy\ Use}{IT\ Equipment\ Annual\ Energy\ Use}$$

1. *Total (Data Center) Facility Annual Energy Use* includes all *IT Equipment Energy*, plus power delivery and cooling system components, lighting, and all other energy using devices that support the IT equipment.
2. *IT Equipment Annual Energy Use* includes the energy associated with all of the IT equipment (*e.g.*, computers, storage, and network equipment).

Coordination – All actions taken to meet these goals shall be planned and implemented in coordination with other Federal data center initiatives, including those outlined in the National Defense Authorization

[6] http://www.gsa.gov/portal/category/102491
[7] https://www.serdp-estcp.org/

Act for Fiscal Year 2015, Pub. L. 113-291, section 834, *Federal Data Center Consolidation Initiative,*[8] as well as current and future policies supported by OMB and/or the Federal Chief Information Officers (CIO) Council.

At least twice per year, the Federal Electronics Stewardship Working Group (FESWG) and the Federal Data Center Task Force shall have a joint meeting for the purpose of coordinating activities and sharing insights.

Training – Agencies shall put in place policies and procedures to have data center staff trained and certified in data center energy efficiency, such as through programs offered by FEMP or other relevant programs or certifications.

All core[9] data centers, to include existing, new and planned, shall have at least one certified Data Center Energy Practitioner (DCEP), either on-site or centralized, assigned to manage data center performance and continued optimization. A single DCEP may manage multiple data centers. The DCEP shall coordinate with the agency CIO to meet the targets in E.O. 13693 and in these Instructions. As outlined in the Federal Information Technology Acquisition Reform Act (FITARA), the agency CIO is accountable for all agency technology investments.[10]

Metering – The advanced energy meters installed by agencies as appropriate in all data centers shall be meters that enable the active tracking of power usage effectiveness (PUE) for the data center, as well as promote implementation of Data Center Infrastructure Management (DCIM). All Development Modernization and Enhancement (DM&E) funding requests shall include funding to implement metering if not already in place.

For data centers undergoing or planned for consolidation prior to fiscal year 2018, agencies may defer installation of advanced energy meters until consolidation activities are complete, but no later than the end of fiscal year 2018. For data centers undergoing or planned for closure prior to FY 2018, installation of advanced energy meters is not required. In order to maintain consistency with the policies of the EPA's ENERGY STAR program for data centers, to the maximum extent practicable, meters to measure the IT energy use of the data center should be installed at the output of the Uninterruptible Power Supply (UPS). For more information, refer to the ENERGY STAR website at: http://portfoliomanager.supportportal.com/link/portal/23002/23010/Article/34501/How-do-I-meter-my-data-center-s-IT-energy-for-ENERGY-STAR-certification.

New data centers[11] shall be designed and built with advanced energy and water meters, as applicable. For *existing data centers* that are unable to cost-effectively install advanced meters by FY 2018, agencies shall evaluate alternatives that will allow the consolidation and/or closure of these data centers, including consolidation with or migration to other data centers (either owned by the agency or other public or private organizations) and transition to cloud services. Agencies shall report on the conclusions of these evaluations and subsequent actions when reporting on progress meeting the metering goals outlined in E.O. 13693 and in these Instructions.

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[8] http://www.gpo.gov/fdsys/pkg/PLAW-113publ291/pdf/PLAW-113publ291.pdf

[9] Questions regarding which data centers qualify as "core" and "non-core" should be directed to the OMB Office of E-Government and Information Technology (E-Gov).

[10] FITARA: https://www.congress.gov/bill/113th-congress/house-bill/1232.

[11] For this purpose "new data centers" are defined as any data center receiving DM&E funds in FY2017 or any subsequent year.

PUE Targets – New data centers shall be designed and operated to maintain a PUE of at most 1.4, and are encouraged to be designed and operated to achieve a PUE of 1.2. When cost-effective, agencies are encouraged to design for and achieve a PUE of less than 1.2 in new data centers. To increase the speed of cloud adoption, agencies shall adopt a cloud-first or cloud-by-default policy when developing or purchasing new systems.[12] Existing data centers shall be improved and operated to achieve a PUE of less than 1.5. When cost-effective, agencies are encouraged to achieve a PUE of less than 1.5 in existing data centers. For existing data centers that are unable to cost-effectively achieve a PUE of less than 1.5, agencies shall evaluate alternatives that will allow consolidation and/or closure of these data centers, including consolidation with or migration to other data centers (either owned by the agency or other public or private organizations) and transition to cloud services. Agencies shall report on the conclusions of these cloud evaluations and any subsequent actions to the OMB Office of E-Government and Information Technology through the IT Dashboard, and data center power usage data through the Integrated Data Collection (IDC) via DataPoint in order to assess progress toward meeting the PUE goals outlined in E.O.

Best Practices – The agency CIO should develop, issue and implement policies, procedures and guidance for data center energy optimization, efficiency, and performance. In addition, the *Federal Information Technology Acquisition Reform Act* (FITARA) requires each agency to submit a multi-year Data Center Consolidation and Optimization Strategic Plan to OMB beginning in FY 2016.[13] The performance plan for each agency should include accountability to the data center metrics outlined in E.O. 13693 and in these Instructions. Agencies needing technical assistance in meeting these data center goals should contact FEMP for technical assistance at no cost to the requesting agency.[14] Agencies are encouraged to join FEMP's Better Buildings Challenge for Data Centers.[15]

When applicable, and cost-effective, agencies should install and monitor advanced water meters in data centers.

Contracted Data Centers and Cloud Services – When cost-effective, agencies are encouraged to use Federal data center shared service providers and contracted data center services, including cloud services, which are provided through data centers that meet the above requirements for new data centers (*e.g.*, a PUE of at most 1.4, but preferably 1.2 or better). To the extent practicable and in accordance with applicable acquisition laws, regulation and policies, agencies shall demonstrate procurement preference for data centers with the lowest demonstrated PUE. In addition, any new data center contract or procurement vehicle shall require the contractor to regularly report PUE data to the contracting agency. Agencies may also include procurement preference for data centers and cloud service providers that use green power, as defined by EPA's Green Power Partnership.[16]

Reporting – To avoid unnecessary duplication of efforts, agencies shall report their data for this section quarterly, including installation of advanced meters and reporting of PUE, through the Office of Management and Budget's Integrated Data Collection for data center metrics, or any future OMB reporting vehicle.

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[12] https://www.whitehouse.gov/sites/default/files/omb/assets/egov_docs/federal-cloud-computing-strategy.pdf
[13] Agency data center energy optimization strategy to be included in the Data Center Consolidation and Optimization Strategic Plan template to be released by OMB in 2015.
[14] http://energy.gov/eere/femp/data-center-energy-efficiency
[15] https://www4.eere.energy.gov/challenge/partners/data-centers
[16] http://www.epa.gov/greenpower/

Agencies shall include a summary of performance on these data center goals, including how the agency CIO is promoting these goals internally, in their annual SSPP.

Definitions – *Data centers* at *agency facilities* means all Federal data centers – data centers owned, operated, or maintained by or on behalf of the agency, irrespective of the size, as defined by OMB for data center reporting in the IDC.[17] This definition includes contractor/commercial facilities containing government-funded IT equipment.

Existing data centers are enduring data centers, and do not include any data center planned for closure by the end of FY 2018 under the Federal Data Center Consolidation Initiative, or other applicable activities. "New" data centers are those entering the formal design phase after the end of FY 2015. Reporting on "New" data centers shall commence in accordance with OMB reporting guidelines.

3. Clean Energy Target

E.O. section 3(b): *ensure that at a minimum, the percentage of the total amount of building electric energy and thermal energy [that is] clean energy, accounted for by renewable electric energy and alternative energy, [meets targets specified in 3(b)(i), 3(b)(ii), 3(b)(iii), 3(b)(iv), and 3(b)(v)]*

Target:	Obtain specified shares of total energy from clean energy by FY 2025.
Milestones:	Not less than 10% in fiscal years 2016 and 2017; Not less than 13% in fiscal years 2018 and 2019; Not less than 16% in fiscal years 2020 and 2021; Not less than 20% in fiscal years 2022 and 2023; Not less than 22.5% in fiscal year 2024; and Not less than 25% in fiscal year 2025 and each year thereafter.
Baseline:	Annual targets measured against total energy consumption in respective year.
Metric:	Percent of total energy comprised of renewable electric energy and alternative energy.

Previous renewable energy consumption goals directed agencies to obtain targeted percentages of renewable electric energy relative to total electricity use but excluded non-electric energy (*i.e.*, thermal) from the equation. As a result, these goals did not count the contributions of many alternative technologies such as thermal renewable. The clean energy target in E.O. 13693 is an electric and thermal energy[18] target directing agencies to obtain not less than 25% of their total facility energy from clean energy sources by 2025.

The clean energy target will use British Thermal Units (Btus) for tracking, reporting, and OMB scorecard purposes. Therefore, renewable electric energy purchased in kilowatt-hours (kWh) will be converted to Btus with the following factor – one kWh equals 3,412 Btus.[19]

The following clean energy target equation demonstrates how the Clean Energy Share[20] is calculated:

[17] Integrated Data Collection: https://community.max.gov/x/LhtGJw.
[18] Thermal energy, for *Clean Energy Target* accounting purposes, means all forms of non-electric energy which is primarily the energy delivered as heating or cooling. Examples of thermal energy are fuels used in furnaces and solar water heaters and Btus of energy received from ground sourced heat pumps.
[19] http://www.eia.gov/energyexplained/index.cfm?page=about_energy_units
[20] The term "Clean Energy Share" refers to the percent of Clean Energy relative to total energy.

$$\text{Clean Energy Share (\%)} = \frac{(\text{Renewable Electric (Btus)}) + (\text{Alternative Energy (Btus)})}{Total\ Energy\ (Btus)}$$

In this equation, the denominator, *total energy*, equals the sum of all electric energy and thermal energy consumed by an agency's goal-subject and goal-excluded buildings. *Renewable electric* equals the total amount of renewable electric energy purchased or consumed by agency buildings that came from sources discussed below in section III.A.4. of these Instructions. *Alternative energy* can come from thermal or electric energy sources and is defined in E.O. 13693 to include options such as renewable heat sources (including biomass, solar thermal, geothermal, waste heat, and renewable combined heat and power [CHP]), non-renewable CHP, small modular nuclear reactors (SMR), fuel cell energy systems, energy generation with active capture and storage of carbon dioxide emissions (otherwise known as carbon capture and storage, or CCS), and other alternative energy approaches that advance the policy set forth in section 1 and achieve the goals of section 2 of E.O. 13693.

Accounting for Renewable Electric and Alternative Energy Btus – Accounting for the clean energy target varies by type of energy generation and fuel. The simplest accounting is for technologies that generate electric and/or thermal energy with negligible life-cycle GHG emissions, including:

1) Renewable electric (*e.g.*, electricity from wind, solar, geothermal, incremental hydropower);
2) Renewable heat or thermal (*e.g.*, solar thermal, biomass boiler);
3) Combined heat and power (CHP) powered exclusively with a renewable fuel (*e.g.*, biomass); [21]
4) Small modular nuclear reactor (SMR); and
5) Fuel cell energy system powered exclusively with a renewable fuel (*e.g.*, fuel cell powered by hydrogen extracted from biogas).

All of the Btus consumed from the five technologies listed above, and other technologies approved by CEQ and OMB as having negligible life-cycle GHG emissions, count in the numerator of the clean energy target equation. See Table 2, below, for specific guidance on whether Btus are counted as renewable electric energy or alternative energy.

For CHP and fuel cells that are powered exclusively by fossil fuel (*e.g.*, natural gas), the total Btus counted as alternative energy are calculated as follows:

1) Calculate the total Btus embedded in the fuel used to power the CHP or fuel cell system (*e.g.*, natural gas);
2) Calculate the Btus of useful electric and/or thermal energy, respectively, produced by the CHP or fuel cell system and that are consumed by the agency (usually by means of meters connected to the system);
3) Calculate and add together the Btus of electricity (based on eGRID[22]) and/or natural gas (based on an 80% efficient natural gas boiler[23]) required to produce the equivalent amount of useful Btus of electric and thermal energy, respectively, as calculated in number 2, above; and
4) Subtract the total Btus in number 1 from the total Btus in number 3 to obtain the total Btus counted as alternative energy.

Accounting is more complex for CHP and fuel cells that are powered by a mix of fossil and renewable fuel. Consider a CHP system powered by a 50/50 blend on a Btu basis of coal and wood chips. The

[21] Combined heat and power (CHP) is an integrated unit generating both electric power and useful thermal energy.
[22] Agencies should use the eGRID factor for the region within which their CHP facility is located and convert MWh (as provided in eGRID) to Btus as necessary. (See http://www.epa.gov/cleanenergy/energy-resources/egrid/.)
[23] The 80% efficiency assumption will be updated if new efficiency standards for conventional technology come into effect.

system uses 2,000 billion Btus of fuel (half of which is wood chips) to produce 550 billion Btus of electric energy and 850 billion Btus of thermal energy each year. Since a renewable fuel (wood chips) produced half of this energy, half of the electric energy (275 billion Btus) counts toward the agency's renewable electric target and half of the thermal energy (425 billion Btus) counts in the alternative energy portion of the clean energy target. The portion of the fuel input and electric and thermal energy output attributable to coal is counted as discussed above for a CHP plant powered exclusively by fossil fuel.

Special attention is needed when accounting for the Btu benefits of a CHP facility that serves more than one customer or agency. For instance, consider a large centralized CHP facility that is operated by one agency (the Host agency) and delivers heat and electricity to several agencies (the *consuming* agencies).[24] The consuming agencies pay for the heat and electricity and count those Btus in their total energy. The total Btu benefits of the CHP facility are calculated with the same methodology as discussed above and are then "dispersed" to consuming agencies based on the proportion of the facility's electricity and heat that they consume. The consuming agencies count their share of the total Btu benefits as alternative energy. The same methodology is used for dispersing renewable electric and alternative energy Btus if the CHP facility is powered with renewable fuel or a mix of renewable and fossil fuel. This methodology also applies to CHP facilities that are located off-site from the consuming agency's facility.

For CCS, the clean energy equation numerator only includes the share of Btus that is proportional to the share of captured and sequestered carbon dioxide (CO_2) emissions relative to total CO_2 emissions from the respective power plant. However, this value shall be adjusted for the additional energy that is required to capture, compress, transport, and sequester the CO_2. Future FEMP guidance will provide detailed accounting instructions for CCS.

Table 2 summarizes how different types of energy generation count as renewable electric and/or alternative energy (this table also applies to accounting for microturbines as discussed in section III.A.4. below).

Table 2 – Accounting for Renewable Electric and Alternative Energy from Generating Assets

Generator (*e.g.*, Boiler) Fuel Source	Produces *Electric* Energy	Produces *Thermal* Energy	Btus counted as *Renewable Electric*	Btus counted as *Alternative Energy*
1. Renewable	Yes	No	All electric Btus	N/A
2. Renewable	No	Yes	N/A	All thermal Btus
3. Blend (Renewable & Fossil)	Yes	No	Electric Btus proportional to renewable share of fuel blend on a Btu basis	N/A
4. Blend (Renewable & Fossil)	No	Yes	N/A	Thermal Btus proportional to renewable share of fuel blend on a Btu basis
5. Renewable	Yes	Yes	All electric Btus	All thermal Btus[25]

[24] This discussion of accounting for "multi-party" CHP facilities is a conceptual example and will not work for all multi-party CHP facilities. Contractual agreements vary from facility to facility and need to be accommodated in each facility's accounting framework.

Generator (*e.g.*, Boiler) Fuel Source	Produces *Electric* Energy	Produces *Thermal* Energy	Btus counted as *Renewable Electric*	Btus counted as *Alternative Energy*
6. Fossil	Yes	Yes	N/A	All "net" Btus[25]
7. Blend (Renewable & Fossil)	Yes	Yes	Electric Btus proportional to renewable share of fuel blend	Thermal Btus proportional to renewable share of fuel blend plus all "net" Btus attributable to fossil share of fuel mix[25]
8. Small Modular Nuclear Reactor	Yes	Yes	N/A	All electric and /or thermal Btus
9. Energy Generation with active CCS[26]	Yes	No	N/A	Electric Btus proportional to share of generating unit's total CO_2 sequestered adjusted for additional energy required to capture, compress, transport, and sequester the CO_2.

Relationship between Clean Energy Target and Renewable Electric Target – The renewable electric target and clean energy target are fixed at 30% of electric energy and 25% of total energy, respectively. The amount of alternative energy required by the clean energy target depends on the share of electric energy used by the agency. Table 3 compares three sample agencies to show how the share of electric energy determines the amount of alternative energy needed to meet the clean energy target.

Table 3 – Comparison of Clean Energy Target Energy Mix Based on Share of Electric Energy

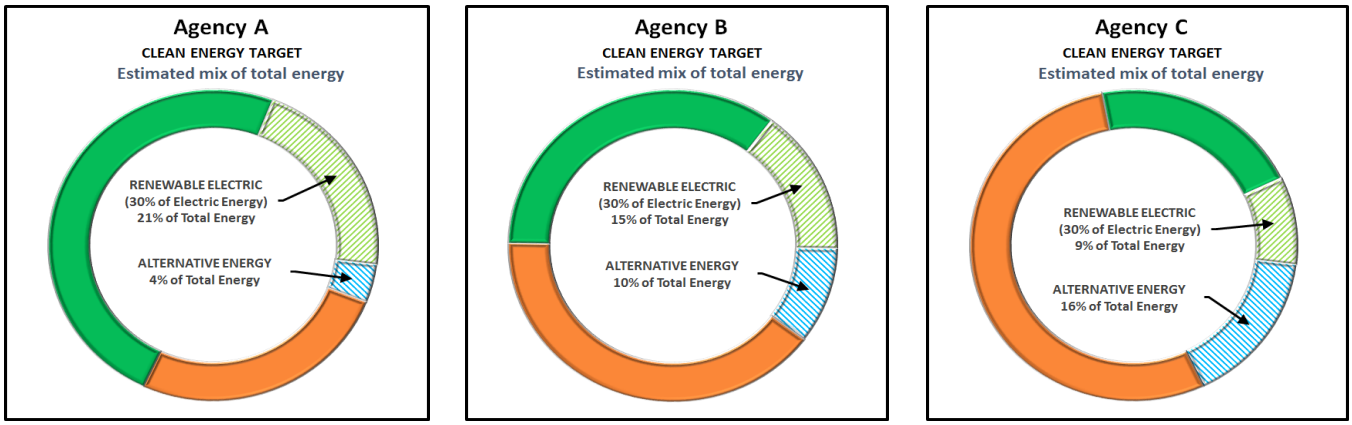
Agency Energy Mix	Agency A Higher Share of Electric Energy	Agency B Equal Electric and Thermal Energy	Agency C Higher Share of Thermal Energy
1. Total Energy (Btus)	100	100	100
2. Electric Energy (Btus)	70	50	30
3. Thermal Energy (Btus)	30	50	70
4. Clean Energy Target (Btus)	25	25	25
5. Renewable Electric Target (Btus)	21	15	9
6. Alternative Energy needed to meet Clean Energy Target (Btus)	4	10	16
7. Renewable Electric + Alternative Energy (Btus)	25	25	25

Row 1 assumes that each agency consumes 100 Btus of total energy in 2025. Rows 2 and 3 show each agency's share of electric energy and thermal energy relative to the 100 Btus of total energy. Row 4 calculates the clean energy target (25% of total energy) and Row 5 shows the total renewable electric energy required by the renewable electric target (30% of total electric energy). The value in Row 5 is largest for **Agency A** since that agency has the highest share of electric energy relative to total energy. **Agency C** has the smallest value in Row 5 because it has the smallest share of electric energy relative to total energy. Row 6 subtracts the renewable electric target Btus (Row 5) from the clean energy target Btus (Row 4) to display the alternative energy Btus needed to meet the clean energy target. The value in

[25] The term "net" means the difference between the amount (measured in Btus) of energy required to produce the desired electricity and heat from 1) separate electric and heat generators and 2) the CHP facility. The Environmental Protection Agency will release a calculator tool for agencies to use for estimating energy savings from CHP facilities.
[26] This description assumes that the facility uses 100% fossil fuel. Agencies should consult with CEQ, OMB, and FEMP for guidance on accounting for possible CCS projects that use 100% biomass or co-firing.

Row 6 is lowest for **Agency A** and highest for **Agency C** due to the differing amounts of renewable electric energy (Row 5). **Figure 1** provides a graphical comparison of this example.

Figure 1 – Comparison of Clean Energy Target Energy Mix Based on Share of Electric Energy



No Cap on the Contribution of Renewable Electric Energy toward the Clean Energy Goal – Renewable electric energy consumed in excess of the renewable electric target is counted toward the clean energy target and reduces the amount of alternative energy needed. In contrast, alternative energy consumed in excess of the clean energy target does not count toward the renewable electric target. Table 4 shows how this accounting works for a sample agency that exceeds the renewable electric target and another agency that consumes more alternative energy than required by the clean energy target.

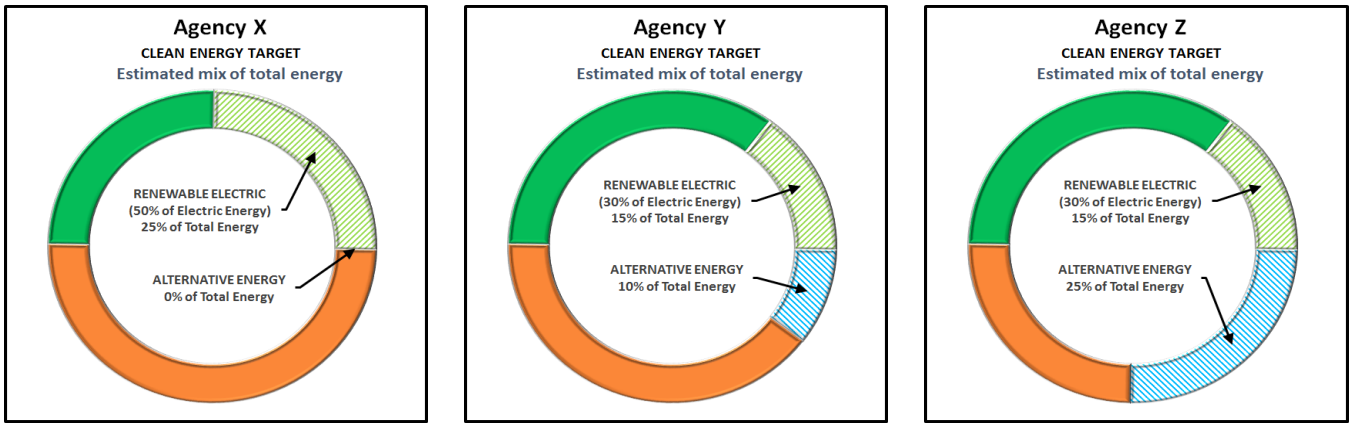
Table 4 – Energy Mix Resulting from Surplus Renewable Electric and Alternative Energy

Agency Energy Mix	*Agency X* Renewable Electric *exceeds* Renewable Electric Target	*Agency Y* Renewable Electric *meets* Renewable Electric Target	*Agency Z* Alternative Energy *exceeds* Clean Energy Target
1. Total Energy (Btus)	100	100	100
2. Electric Energy (Btus)	50	50	50
3. Thermal Energy (Btus)	50	50	50
4. Clean Energy Target (Btus)	25	25	25
5. Renewable Electric Target (Btus)	15	15	15
6. Renewable Electric Consumed (Btus)	25 (50% of Electric Energy, 25% of Total Energy)	15 (30% of Electric Energy, 15% of Total Energy)	15 (30% of Electric Energy, 15% of Total Energy)
7. Alternative Energy Consumed (Btus)	0 (0% of Total Energy)	10 (10% of Total Energy)	25 (50% of Total Energy)
8. Renewable Electric + Alternative Energy (Btus)	25	25	40

Rows 1, 2, and 3 show total energy and the share of electric energy and thermal energy for three agencies with an identical energy mix in 2025. The clean energy target for each agency (Row 4) is 25 Btus and the renewable electric target for each agency (Row 5) is 15 Btus (*i.e.*, 30% of electric energy). Row 6 shows that **Agency X** consumed 25 Btus of renewable electric energy, which is 10 Btus more than required by the renewable electric target. The extra 10 Btus of renewable electric energy counts toward the clean energy target and enables **Agency X** to achieve its clean energy target (25 Btus)

without using any alternative energy (Row 7). **Agency Z** consumes 25 Btus of alternative energy (Row 7) and can therefore meet its clean energy target. However, **Agency Z** has to consume 15 Btus of renewable electric energy to meet the renewable electric target (Row 6). Row 8 shows that **Agency X** meets its clean energy and renewable electric targets by consuming 25 Btus of "clean energy" while **Agency Y** consumed 40 Btus of clean energy to meet these targets. **Figure 2** provides a graphical comparison of this example.

Figure 2 – Energy Mix Resulting from Surplus Renewable Electric and Alternative Energy



4. Renewable Electric Target

E.O. section 3(c): *ensure that the percentage of the total amount of building electric energy consumed by the agency that is renewable electric energy [meets targets specified in 3(c)(i), 3(c)(ii), 3(c)(iii), 3(c)(iv), and 3(c)(v)]*

Target: Obtain specified shares of electric energy from renewable electric energy by FY 2025.
Milestones: Not less than 10% in fiscal years 2016 and 2017;
Not less than 15% in fiscal years 2018 and 2019;
Not less than 20% in fiscal years 2020 and 2021;
Not less than 25% in fiscal years 2022 and 2023;
Not less than 27.5% in fiscal year 2024; and
Not less than 30% in fiscal year 2025 and each year thereafter.
Baseline: Annual targets measured against total electricity consumed in respective year.
Metric: Percent of total electric energy comprised of renewable electric energy.

E.O. 13693 extends existing statutory requirements for agency renewable electric energy consumption (not less than 7.5% by 2015 and each fiscal year thereafter, per 42 U.S.C. § 15852(a)) and previous Presidential Memorandum targets (not less than 20% by 2020). Renewable electric energy is defined in E.O. 13693 as electricity produced or displaced by solar, wind, biomass, landfill gas, ocean (including tidal, wave, current, and thermal), geothermal, geothermal heat pumps, microturbines, municipal solid waste, or new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project.[27] This definition includes two additional technologies – geothermal heat pumps and microturbines – that were not included in previous statutory (42 U.S.C. § 15852(b)(2)) and Executive Order definitions, specifically those in E.O. 13514.

[27] For hydroelectric, "New" means placed in service after 1/1/1999 as is consistent with the definition of new hydroelectric generation capacity in Sec. 2852 of the National Defense Authorization Act for Fiscal Year 2007 as amended by section 2842 of the National Defense Authorization Act for Fiscal Year 2010. See 10 U.S.C. § 2911(e).

Geothermal heat pumps are systems that use the constant temperature of the earth as the exchange medium for heating and cooling. If the energy provided to an agency by a geothermal heat pump reduces electric energy that would have been used to produce the equivalent amount of energy from an air-source heat pump that meets current appliance efficiency standards, then the Btus associated with reduction in electricity use from the geothermal heat pump count toward that agency's renewable electric target. Future FEMP guidance will provide detailed accounting instructions for geothermal heat pumps. See http://energy.gov/energysaver/articles/geothermal-heat-pumps for detailed technical information on geothermal heat pumps.

Microturbines are small turbines with outputs less than 500 kilowatts (kW). If a renewable resource (*e.g.*, biogas or the flow of water) powers the microturbine, then all of the consumed electricity is counted toward the renewable electric target. However, if the microturbine produces thermal energy or uses a blend of renewable and fossil fuel to produce electricity, then the accounting toward the renewable electric and/or clean energy targets follows the guidance in **Table 2**, above. Future FEMP guidance will provide detailed accounting instructions for microturbines.

Municipal solid waste (MSW) can be incinerated, in a process often referred to as *waste-to-energy*, to produce electric and/or thermal energy. Electricity produced from MSW is considered renewable electric energy while thermal energy produced from MSW is considered alternative energy (see **Table 2** for guidance on accounting). Future FEMP guidance will provide detailed accounting instructions for MSW.

Proof of Renewable Electric Consumption – Legal ownership of renewable energy certificates (RECs) constitutes proof of consuming the renewable electric energy that agencies count toward their renewable electric target. In some cases, such as on-site renewable energy where the agency retains ownership of the electricity and environmental attributes, RECs may not be available or practical. In such cases, an independent third-party audit is a best practice for verifying consumption. However, if neither RECs nor third-party audits are appropriate for a particular source of renewable electric energy, then agencies should retain records of energy production that verify the agency's ownership of the environmental attributes. Renewable electric energy generators located on an agency's property from which the agency neither retains the RECs (or environmental attributes verified by third-party audit or agency records) nor purchases replacement RECs do not count toward the renewable electric target. See the forthcoming companion ***CEQ REC Guidance*** for detailed discussion of RECs, replacement RECs, and eligibility requirements.

Bonus Credit – Consistent with current statute (42 U.S.C. § 15852(c)) and previous Federal policy on renewable electric, a bonus equivalent to doubling the amount of renewable electric energy used or purchased is available for any renewable electric energy that was generated on a Federal facility or on Federal or Tribal land and used at a Federal facility (as demonstrated by RECs, third-party audit, or agency records). Projects that convert renewable fuels, such as biomass, into useful electric energy will be considered on-site projects that can qualify for the bonus if the primary equipment for converting the fuel to usable energy is located on Federal or Indian lands, even if all or a portion of the fuel is delivered from non-Federal lands (see 42 U.S.C. § 15852(c)).

Placed In-Service Date – In order to count a REC (or environmental attribute) toward the renewable electric target in E.O. 13693, the electricity shall have been generated by a renewable generator that was placed into service within 10 years prior to the start of the fiscal year in which the agency intends to count the REC (or environmental attribute) toward the renewable electric target. For instance, the renewable generator for any RECs credited toward an agency's FY 2015 renewable electric target shall have been placed in service on or after October 1, 2004. More discussion of this requirement, including

exemptions for certain RECs or environmental attributes from on-site generators and off-site generators with long-term contracts, can be found in the forthcoming companion ***CEQ REC Guidance***.[28]

Resources for Federal Renewable Electric Contracting – There are several ways agencies can purchase renewable electric energy and associated RECs. In many cases, agencies may lack the expertise to develop, negotiate, and execute these types of contracts. GSA, the Defense Logistics Agency (DLA), FEMP, and Department of Justice's UNICOR program all have significant experience with these types of contracts and can provide support to other agencies.

E.O. section 3(d): *include in the renewable electric energy portion of the clean energy target established in subsection (b) of this section renewable electric energy as defined in section 19(v) of this order and associated with the following actions, which are listed in order of priority*

The following actions are listed in the priority order originally established in the December 5, 2013, Presidential Memorandum – Federal Leadership on Energy Management. This prioritization represents the priority in which agencies should *consider* obtaining renewable electric energy but not necessarily the order in which renewable electric energy is actually obtained. For instance, a higher priority action may have been considered but deemed less practical or cost-effective than a lower priority action that is subsequently implemented.

E.O. section 3(d)(i): *installing agency-funded renewable energy on site at Federal facilities and retaining corresponding renewable energy certificates (RECs) or obtaining equal value replacement RECs*

Agency-funded on-site renewable energy projects are paid for with agency appropriations and installed on a Federal building or on Federal or Tribal land. When the contract is signed, the agency owns the renewable generation equipment and associated electricity and Renewable Energy Credits (RECs). The electricity generated by an on-site project where the agency retains RECs (or environmental attributes) or purchases replacement RECs from an eligible renewable electric generator receives bonus credit toward the agency's renewable electric target. See forthcoming ***CEQ REC Guidance*** for further details.

In this model, under OMB scoring guidelines used by OMB and Congressional scorekeepers, costs of the contract that are obligations of the Federal Government, including any cost of contract termination, must be scored in the year the contract is executed; if the contract can be terminated without further recourse, then the annual cost is scored in the year executed.

E.O. section 3(d)(ii): *contracting for the purchase of energy that includes the installation of renewable energy on site at a Federal facility or off site from a Federal facility and the retention of corresponding RECs or obtaining equal value replacement RECs for the term of the contract*

In some cases, agencies can execute long-term contracts whereby a third party pays the upfront costs for building a new on-site or off-site renewable energy facility that delivers bundled electricity and RECs to an agency. Any electricity generated from a contracted project that is on-site or on Federal or Tribal land and where the agency retains RECs or purchases replacement RECs receives bonus credit toward

[28] Exemptions to this Placed-In-Service Date requirement include projects that are located on Federal or Tribal property and from which the agency retains the RECs (or environmental attributes).

the agency's renewable electric target. See forthcoming ***CEQ REC Guidance*** and OMB Memorandum M-98-13[29] and OMB Memorandum M-12-21[30] for further discussion.

E.O. section 3(d)(iii): *purchasing electricity and corresponding RECs or obtaining equal value replacement RECs*

Agencies can also purchase bundled electricity and RECs from existing or new renewable generators that do not deliver electricity directly to the agency's facility. If the project is located on Federal or Tribal land and the agency retains RECs or purchases replacement RECs, then the agency receives bonus credit toward its renewable electric target. See forthcoming **CEQ REC Guidance** for further discussion.

E.O. section 3(d)(iv): *purchasing RECs*

Most RECs purchased by agencies have historically been unbundled RECs from projects on private land without direct Federal investment. Agencies can conduct their own procurement for these RECs or can work with GSA, DLA, and Western Area Power Administration (WAPA) to draw on procurement expertise and coordinate bulk purchases with other agencies. The DOE Office of Energy Efficiency and Renewable Energy (EERE) Green Power Network and EPA Green Power Partnership provide additional guidance, references, and information on suppliers and markets. See forthcoming ***CEQ REC Guidance*** for further discussion.

5. Alternative Energy

E.O. section 3(e): *include in the alternative energy portion of the clean energy target established in subsection (b) of this section alternative energy as defined in section 19(c) of this order and associated with the following actions*

This section provides examples of technology that can be counted as alternative energy. This list does not include all possible technologies and is not in priority order.

E.O. section 3(e)(i): *installing thermal renewable energy on site at Federal facilities and retaining corresponding renewable attributes or obtaining equal value replacement RECs where applicable*

Thermal renewable energy technologies include solar, wood, biomass, and landfill gas systems that exclusively produce non-electric energy (*i.e.*, heating or cooling). All (*i.e.*, 100%) of the Btus produced by these thermal renewable generating systems count as alternative energy toward the clean energy target. When thermal systems co-fire with renewable and fossil fuel sources, the share of Btus produced by the renewable energy share of the system counts as alternative energy. See Table 2, above, for guidance on accounting for thermal renewable energy toward the clean energy target.

In some markets, RECs can be issued for energy produced by renewable thermal generators and market conditions may compel agencies to transfer REC ownership to third-parties. In these cases, the agency shall buy replacement RECs from an eligible renewable thermal generator in order for the energy to

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[29] *Federal Use of Energy Savings Performance Contracting (July 25, 1998), available at* https://www.whitehouse.gov/sites/default/files/omb/assets/omb/memoranda/m98-13.pdf.

[30] Addendum to OMB Memorandum M-98-13 on *Federal use of Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs) (September 28, 2012), available at* https://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-21.pdf.

count as alternative energy. Reasonable, auditable records should be kept for on-site thermal renewable generators that are in markets without RECs.

E.O. section 3(e)(ii): *installing combined heat and power processes on site at Federal facilities*

On-site CHP facilities that are powered with fossil fuels can be counted as alternative energy. See **Table 2**, above, for guidance on accounting for CHP as alternative energy and as renewable electric energy (if a renewable fuel source is used). Any renewable electric energy generated from an on-site CHP plant where the agency retains RECs (or environmental attributes) or purchases replacement RECs receives bonus credit toward the agency's renewable electric target. DOE's CHP Deployment program can provide technical assistance to agencies – http://www.energy.gov/eere/amo/chp-deployment – and EPA's CHP Partnership provides best practices, information resources, and tools – http://www.epa.gov/chp/.

E.O. section 3(e)(iii): *installing fuel cell energy systems on site at Federal facilities*

Fuel cell energy systems are stationary or distributed generation projects used for baseload power, backup power, power for remote locations, and co-generation. Stationary fuel cells typically use natural gas, or a renewable energy equivalent such as biogas, to produce either electricity or heat and electricity (*i.e.*, CHP). Fuel cells can have a higher production efficiency than conventional boilers and thus get more useful energy out of each unit of fuel input. See Table 2 for guidance on accounting for fuel cells as renewable electric energy and alternative energy. Any renewable electric energy generated from an on-site fuel cell system where the agency retains RECs (or environmental attributes) or purchases replacement RECs receives bonus credit toward the agency's renewable electric target. The Fuel Cell Research program at the National Renewable Energy Laboratory (NREL) has technology and cost information on stationary fuel cells that have been deployed in the U.S. – http://www.nrel.gov/hydrogen/proj_fc_systems_analysis.html.

E.O. section 3(e)(iv): *utilizing energy from new small modular nuclear reactor technologies*

Small modular nuclear reactors (SMRs) are nuclear power plants with more compact designs than current nuclear base load plants. Compared to conventional nuclear power plants, SMRs are anticipated to have lower capital costs, greater scalability and siting flexibility, and potential for enhanced safety and security. No SMR concepts have been designed, licensed, or constructed to date but any electricity that an agency purchases under a direct contract with an SMR licensee would be considered alternative energy. DOE's SMR program has more information on this technology – http://energy.gov/ne/nuclear-reactor-technologies/small-modular-nuclear-reactors.

E.O. section 3(e)(v): *utilizing energy from a new project that includes the active capture and storage of carbon dioxide emissions associated with energy generation*

Carbon capture and storage (CCS) refers to a set of technologies that capture carbon dioxide (CO_2) from power plants, transports the captured CO_2 to a sequestration well, and injects the CO_2 into the sequestration well in a way that prevents the gas from escaping from the well and back into the atmosphere. An agency can count electricity purchased from a facility with CCS toward its alternative energy total. See Table 2 for guidance on accounting for CCS as alternative energy. Also, future FEMP guidance will provide accounting instructions. The EPA's Climate Change program has detailed information about CCS – http://www.epa.gov/climatechange/ccs/.

E.O. section 3(e)(vi): *implementing other alternative energy approaches that advance the policy set forth in Section 1 and achieve the goals of Section 2 of this order and are in accord with any sustainability, environmental performance, and other instructions or guidance established pursuant to sections 4(e) and 5(a) of this order*

In some cases, an agency may identify an opportunity to implement an energy technology that achieves GHG reductions but is not included in the alternative energy actions listed in section 3(e) of E.O. 13693. If the agency wishes to receive alternative energy credit for such a technology, the agency should consult with CEQ and OMB to receive documented approval of the proposed technology and the accounting methodology beforehand.

E.O. section 3(e)(vii): *including in the Department of Defense (DOD) accounting for alternative energy for this subsection, fulfillment of the requirements for DOD goals established under Section 2852 of the National Defense Authorization Act for Fiscal Year 2007 as amended by Section 2842 of the National Defense Authorization Act for Fiscal Year 2010*

Electricity produced from renewable energy projects on Department of Defense (DOD) land and from which DOD forgoes ownership of the RECs and does not obtain replacement RECs counts in DOD's alternative energy total.

B. Water Efficiency *(E.O. 13693, Section 3(f))*

E.O. section 3(f): *improve agency water use efficiency and management, including stormwater management*

1. Potable Water Consumption

E.O. section 3(f)(i): *reducing agency potable water consumption intensity measured in gallons per square foot by 36 percent by 2025 through reductions of 2 percent annually through fiscal year 2025 relative to a baseline of the agency's water consumption in fiscal year 2007*

Background: E.O. 13514 established the water consumption intensity target of 2% annual reductions through FY 2020 in order to reach 26% reductions in FY 2020 relative to a FY 2007 baseline. E.O. 13693 extends the 2% annual reduction goals through FY 2025 in order to reach a 36% reduction in FY 2025 relative to a FY 2007 baseline.

Target: By FY 2025, achieve a 36% reduction in potable water consumption relative to a FY 2007 baseline.
Milestone: 2% per year cumulative reduction in potable water consumption from FY 2007.
Metric: Potable water consumption intensity measured in gallons per square foot per year.

Strategy and Tools

Federal Guidance – Agencies should continue to use the *Implementing Instructions: Federal Agency Implementation of Water Efficiency and Management Provisions of E.O. 13514*, published July 2013 for definitions, policies, estimating methodologies and other guidance on Federal water conservation tracking and reporting, for both potable water and Industrial, Landscaping, and Agricultural (ILA) water. This document is available at: https://www.whitehouse.gov/sites/default/files/water_implementing_instructions.pdf. See also http://energy.gov/eere/femp/guidance-meeting-executive-order-13514-water-goals.

Alternative Water – Alternative water can be used to offset both potable and non-potable water uses. FEMP's best management practice information on "alternative water" is available at: http://energy.gov/eere/femp/best-management-practice-14-alternative-water-sources.

EPA WaterSense – The following websites provide a list of WaterSense certified products and extensive information of facility water use and water conservation strategies. See: http://www.epa.gov/watersense/products/index.html and http://www.epa.gov/watersense/commercial/bmps.html.

DOE FEMP Water Conservation Website – For a comprehensive overview of water conservation strategies, practices, training and tools see the FEMP website on water conservation: http://energy.gov/eere/femp/water-use-reduction. DOE FEMP frequently updates and adds new water conservation information and tools.

2. Metering and Water Balance Analysis

E.O. section 3(f)(ii): *installing water meters and collecting and utilizing building and facility water balance data to improve water conservation and management*

Background: Agencies should review their current metering infrastructure against the DOE FEMP Federal Building Metering Guidance and the water uses most likely to present conservation opportunities. Agencies are encouraged to use the water balance methodology to guide their water conservation strategies efforts on both a building and an installation basis.

A water balance analysis identifies the proportion of water consumption for specific end uses, compares total water supplied against the water consumed for each specific end use, and nets out total water loss (leaks) in a particular building, facility, or portfolio.

Installing meters and sub-meters helps provide additional data about specific water end uses at a building or facility. This additional data provides the basis for the development of robust water balance analysis that can quickly identify new water conservation opportunities and prioritize water conservation projects and programs at the building, facility or portfolio level. The installation of meters and sub-meters for these purposes is not the same as, and should not be confused with, the practice of "sub-metering" as a billing process under the Safe Drinking Water Act, 42 U.S.C § 300f.

As agencies better understand their water use, they should refine and update their metering strategies and water conservation plans.

Agencies should: 1) appropriately install water meters and sub-meters to improve data available for development of a "water balance" analysis in water use assessments; 2) to the extent appropriate and practical, use the water balance methodology, for 42 U.S.C. § 8253(f)(3) required water assessments, other agency water assessments, and as a part of water conservation strategic planning; and 3) use water balance information to prioritize lower cost and higher cost water savings projects, increase water conservation program efficiency and identify new opportunities for water conservation. A water balance can also identify water efficiency projects that can be included in performance contracts.

Target: Where appropriate, agencies should incorporate the use of water balance analyses into contract language associated with water conservations assessments and as a component of their water conservation program planning.

Strategies and Tools

FEMP Metering Guidance – To find the most recent FEMP Metering Guidance, which covers both water and energy metering, see *Federal Building Metering Guidance*,[31] at http://energy.gov/eere/femp/downloads/Federal-building-metering-guidance-usc-8253e-metering-energy-use.

DOE FEMP Water Conservation Website – See the reference in the prior section.

Water Balance Methodology – For background information on the water balance approach, see: http://energy.gov/eere/femp/developing-water-management-strategy or http://www1.eere.energy.gov/femp/pdfs/waterefficiency_fedoffices.pdf or http://www.pnnl.gov/main/publications/external/technical_reports/PNNL-19919.pdf.

3. Industrial, Landscaping, and Agricultural Water

E.O. section 3(f)(iii): *reducing agency industrial, landscaping and agricultural (ILA) water consumption measured in gallons by 2 percent annually through fiscal year 2025 relative to a baseline of the agency's ILA water consumption in fiscal year 2010.*

Background: For ILA Water, E.O. 13514 established a target of 2% annual reductions through FY 2020 in order to reach 20% reductions in FY 2020 relative to a FY 2010 baseline. E.O. 13693 extends the annual ILA reduction goals through FY 2025 in order to reach a 30% reduction in FY 2025 relative to the existing FY 2010 baseline.

Target: Achieve a 30%reduction in ILA water use by FY 2025 from a FY 2010 baseline.
Milestone: 2%per year cumulative reduction in ILA water consumption relative to a FY 2010 baseline.
Metric: Percent reduction in gallons of ILA water from a FY 2010 baseline.

Strategies and Tools

Federal Guidance – Agencies should continue to use the *Implementing Instructions: Federal Agency Implementation of Water Efficiency and Management Provisions of E.O. 13514*, published July 2013 for definitions, policies, estimating methodologies and other guidance on Federal water conservation tracking and reporting, for both potable water and ILA water. See http://energy.gov/eere/femp/guidance-meeting-executive-order-13514-water-goals.

4. Green Infrastructure for Stormwater and Wastewater Management

E.O section 3(f)(iv): *installing appropriate green infrastructure features on Federally owned property to help with stormwater and wastewater management.*

Background: Stormwater runoff in urban areas is one of the leading sources of water pollution in the United States. Traditional urban areas typically include large areas of impervious surfaces such as roads, sidewalks, and buildings. These impervious surfaces prevent rainwater from infiltrating into the ground, and as a result, stormwater runs off these urban areas at higher rates and volumes. These higher stormwater rates and volumes can cause increased flooding and erosion, and more pollution to surface

[31] 42 U.S.C. § 8253(e), *Metering of Energy Use*, November 2014.

waters, among other impacts. These impacts may be further exacerbated due to more extreme precipitation events associated with climate change.

Given this potential of green infrastructure to support such a range of purposes, agencies that support sustainable and resilient communities and are part of the Partnership for Sustainable Communities signed onto a letter of support for the Green Infrastructure Collaborative (Collaborative) in July 2014. The Green Infrastructure Collaborative brings together agencies, non-governmental organizations, and private sector entities to help communities more easily implement green infrastructure. Agencies made commitments to help support the work of the Collaborative via activities such as community engagement and green infrastructure development on Federal facilities.

Section 438 of the Energy Independence and Security Act of 2007 (EISA) (42 U.S.C. § 17094) also places legal requirements on new agency construction projects (*i.e.*, development and redevelopment projects involving a Federal facility with a footprint that exceeds 5,000 square feet) to manage stormwater and preserve and/or restore natural site hydrology.

Target: Implementation of green infrastructure and stormwater best practices on new Federal construction projects to the maximum extent technically feasible, per EISA Sec. 438 requirements. Additionally, agencies are encouraged to update their commitments to the Green Infrastructure Collaborative, and develop plans for meeting those commitments.

Milestones: Percent of applicable new projects that are designed and constructed per EISA Sec. 438 requirements.

Metric: Percent of new projects designed and constructed consistent with EISA Sec. 438 requirements each year.

Strategies and Tools

Federal Guidance – For specific technical guidance the following document: Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under section 438 of the Energy Independence and Security Act, December 4, 2009 can be found at: http://water.epa.gov/polwaste/nps/upload/eisa-438.pdf

Green Infrastructure – EPA has an extensive site on Federal requirements for and strategies to plan and implement green infrastructure projects to address stormwater runoff issues. See: http://epa.gov/greeninfrastructure.

Climate Change Impacts on Stormwater Management: EPA has a tool that incorporates climate change into storm water management decisions – SWMM-CAT (Storm Water Management Model Climate Adjustment Tool). See EPA (2014) "SWMM-CAT User's Guide", at URL: http://nepis.epa.gov/Exe/ZyPDF.cgi/P100KY8L.PDF?Dockey=P100KY8L.pdf.

Green Roofs – For information and guidance from GSA on green roofs, see: http://www.gsa.gov/greenroofs and https://sftool.gov/explore/green-building/section/76/green-roof/system-overview.

Green Infrastructure Collaborative – Information on the Collaborative and the commitments made by outside partners and agencies can be found here: http://water.epa.gov/infrastructure/greeninfrastructure/gi_partners.cfm.

C. Fleet *(E.O. 13693, Sections 3(g), 7, 10, 12, 14)*

E.O. section 3(g): *if the agency operates a fleet of at least 20 motor vehicles, improve agency fleet and vehicle efficiency and management*

Goal:	Reduce GHG emissions by improving fuel efficiency and fleet management
Target:	30% reduction in fleetwide per mile greenhouse gas emissions by 2025
Milestones:	(A) not less than 4% by the end of fiscal year 2017; (B) not less than 15% by the end of fiscal year 2021; and (C) not less than 30% by the end of fiscal year 2025.
Baseline:	FY 2014
Metric:	Reduction in fleetwide per mile GHG emissions

1. Fleet Classifications

Federal Fleet – The phrase "fleet of at least 20 motor vehicles" is given the same applicability as 42 U.S.C. § 13212(b)(3).[32] Federal fleet vehicles outside the United States are exempted from the requirements of this E.O.

Passenger Vehicle – The term "passenger vehicle" as defined in the E.O. and "passenger automobile" as defined in section 102-34.35 of the Federal Management Regulation (FMR) (41 CFR § 102-34.35) are equivalent, and both mean "a sedan or station wagon designed primarily to transport people."

Light, Medium, and Heavy Duty Vehicle – The term "light duty vehicle" means any motor vehicle with a gross motor vehicle weight rating (GVWR) of 8,500 pounds or less, as defined in section 102-34.35 of the Federal Management Regulation (41 CFR § 102-34.35). While not defined in the FMR, the term "medium duty vehicle" means a motor vehicle of more than 8,500 pounds and less than or equal to 16,000 pounds GVWR. Similarly, the term heavy duty vehicle means a motor vehicle weighing more than 16,000 pounds GVWR. Both of these terms are defined by the weight rating distinctions for input through the Federal Automotive Statistical Tool (FAST), a web-based reporting tool that is the established government motor vehicle fleet data reporting system.

Federal Management Regulation: Motor Vehicle Management – GSA collects data on motor vehicles operated by agencies and publishes the annual Federal Fleet Report based on that data.[33] To continue to solidify the existing cross-agency partnership in FAST, the fleet classifications utilized throughout the E.O. (*e.g.*, passenger vehicles) are consistent with Part 102-34 of the Federal Management Regulation (Motor Vehicle Management), available at: http://gsa.gov/portal/ext/public/site/FMR/file/Part102-_34.html/category/21858/#wp2022628.

The fleet reduction targets in the E.O. are established based on forecasts of the emission reductions resulting from the Corporate Average Fuel Economy (CAFE) standards required of vehicle manufacturers through joint rulemaking by the National Highway Traffic Safety Administration and EPA, average Federal fleet replacement rates for different vehicle classes, and other considerations such as the future availability of zero emission and plug-in hybrid vehicles.

The zero emission and plug-in hybrid vehicle targets phase in over time, reflecting the expectation that these vehicle technologies will become more readily available and cost competitive in the years to come.

[32] http://www.gpo.gov/fdsys/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap134-subchapI-sec13212.htm
[33] http://www.gsa.gov/portal/content/242645

The overarching fleetwide per mile GHG emission reduction targets, meanwhile, are conservative forecasts in tracking CAFE due to differences in classifications with GSA regulations. Given the need to maintain consistency with GSA motor vehicle management, a desire for easily understood and transparent methodologies, and a data-driven analysis that uses currently available aggregate level data, this simply means that the real-world impact from CAFE will provide agency fleets with greater emission reductions, thereby benefiting GHG emission reduction goals.

As indicated above, although the CAFE standards will be used in forecasting GHG emission reductions, the definitions of passenger vehicles and light trucks in the FMR part 102-34 will continue to apply. These are the definitions agencies are accustomed to using in their annual fleet reporting. CAFE definitions of these terms, which are different, do not apply here.

FEMP Guidance – Within 90 days of the issuance of these Instructions, DOE's FEMP shall issue superseding guidance to the document entitled, "*Guidance for Federal Agencies on E.O. 13514 Section 12, Federal Fleet Management*," available at: https://Federalfleets.energy.gov/sites/default/files/static_page_docs/fleetguidance_13514.pdf to reflect the purposes of E.O. 13693 and these Instructions, including how these requirements interact with similar statutory requirements.

2. Exempted Vehicles Authority

Law enforcement, emergency response, and defense mission (*e.g.*, tactical) vehicles may be exempted from the requirements of E.O. 13693 to the extent deemed necessary by agency heads, but such vehicles shall contribute where possible to the overall sustainability of its agency fleet. Agencies are strongly encouraged to implement the law enforcement classifications pursuant to FMR B-33, Motor Vehicle Management, entitled "*Alternative Fuel Vehicle Guidance for Law Enforcement and Emergency Vehicle Fleets of November 15, 2011*," available at: http://www.gsa.gov/bulletins.

Agencies should also consider:

(i) the ability of alternative fuel vehicles to meet the range of needs of law enforcement personnel including apprehensions, arrests, pursuit, surveillance, protection or off-road duties;
(ii) criteria for the administrative use of vehicles by agency personnel for travel to and from normal place of work; and
(iii) advancements in vehicle and fleet technology that may render conventional practice regarding necessary vehicle size and fuel type outdated in the future.

Strategies and Tools

3. Optimum Fleet Inventory

E.O. section 3(g)(i): *determining, as part of the planning requirements of section 14 of this order, the optimum fleet inventory with emphasis placed on eliminating unnecessary or non-essential vehicles from the agency's fleet inventory*

The optimum fleet inventory shall reduce overall fleet GHG emissions by using a combination of mileage reductions, vehicle size reductions, and energy efficiency and alternative fuel capability improvements.

To determine the optimum fleet inventory, agencies shall conduct a Vehicle Allocation Methodology (VAM) study to rightsize its fleet. An agency should conduct a new VAM study at least once every five years or more frequently if the agency's mission or resource requirements change.

Additionally, beginning with the 2016 Strategic Sustainability Performance Plan (SSPP), the annual VAM reports shall be combined with the Fleet Management Plan (FMP) as an appendix to the SSPP and made available to the public. The FMP, which describes how agencies will achieve the optimal fleet inventory, shall be approved in consultation with GSA and DOE. Agencies should also formulate the Annual Fleet Budget Summary required by OMB Circular A-11, typically due in August of each year, in concert with the FMP in order to align resource requests with each agency's optimal fleet composition.

Within 90 days of the issuance of these Instructions, GSA in coordination with OMB and CEQ will provide guidance on the criteria and structure of the VAM for the 2016 reporting cycle and supporting documents, including alignment with the new fleet metric and targets. Instructions on completing a VAM study and preparing a FMP are currently contained in GSA Bulletin FMR B-30, available at: http://www.gsa.gov/VAM.

4. Fleetwide per mile GHG emissions

E.O. section 3(g)(ii) – *taking actions that reduce fleet-wide per-mile greenhouse gas emissions from agency fleet vehicles, relative to a baseline of emissions in fiscal year 2014, to achieve the following percentage reductions:*

(A) not less than 4%by the end of fiscal year 2017;
(B) not less than 15%by the end of fiscal year 2021; and
(C) not less than 30%by the end of fiscal year 2025.

The new overarching fleet performance metric for the 2016 SSPP, fleetwide per mile GHG emissions, gives agencies more flexibility than the prior fleet metric, an absolute petroleum fuel use reduction goal. Encouraging fuel efficiency improvements, use of alternative fuel, and reductions in the amount of fossil fuels consumed will all reduce GHG emissions. This will allow agencies to continue to meet their mission requirements while also achieving significant GHG reductions.

The new fleet metric is intended to supplement existing statutory requirements provided for in 42 U.S.C. § 6374e[34] and other applicable statutes and regulations, which continue to require fleets to acquire alternative fuel vehicles (AFVs), reduce petroleum consumption, and increase alternative fuel consumption by incentivizing the acquisition of AFVs that achieve the greatest fuel efficiency. Agencies should adjust their fleet management approaches to maximize GHG reduction opportunities within their particular fleet mix.

For each agency, the metric is calculated by summing the product of gallons of gasoline equivalent (GGE) it consumed and a fuel-specific GHG emission conversion factor (CF) that will be updated in FEMP's revised guidance document, which indicates the grams of CO_2e[35] emitted per GGE for each fuel type. The result is then divided by total fleetwide miles traveled. Provided below is a hypothetical equation for an agency that has three fuel types in its fleet: E-85, diesel, and B20.

[34] http://www.gpo.gov/fdsys/granule/USCODE-2009-title42/USCODE-2009-title42-chap77-subchapIII-partH-sec6374e
[35] carbon dioxide equivalent

$$\frac{(GGE_{E85} * CF_{E85}) + (GGE_{diesel} * CF_{diesel}) + (GGE_{B20} * CF_{B20})}{fleetwide\ miles\ traveled}$$

The agency's numerator will be dependent on the fuel types in its fleet. Each fuel type has its own GGE, which represents the number of miles the vehicle can travel using a quantity of fuel with the same energy content as a gallon of gasoline. The value is multiplied by the conversion factor specified above and divided by each agency's total fleetwide miles traveled.

To calculate the percent reduction between two years, subtract the current year fleetwide per mile GHG emissions from 2014, the baseline year, and then divide the result by the fleetwide per mile GHG emissions from 2014. FEMP shall publish an annual report that calculates the GHG emissions for each agency using data that agencies currently submit via FAST, and track and report on the progress for each agency. Within 90 days of the issuance of these Instructions, FEMP shall issue guidance that provides the 2014 baseline for each agency.

Each fleet has an overall target to reduce GHG emissions by improving fuel efficiency and fleet management over time for all agency vehicles (*e.g.*, light, medium, and heavy) otherwise not excluded by this E.O., achieving per mile GHG emissions reductions of at least 4% by 2017, 15% by 2021, and 30% by 2025 from a 2014 baseline. As indicated above, the fleet reduction targets were established based on forecasts of the emission reductions resulting from CAFE standards, average Federal fleet replacement rates for different vehicle classes, and other considerations such as the future availability of zero emission and plug-in hybrid vehicles. Requirements to plan for appropriate charging or refueling infrastructure, such as 3(g)(vi) of E.O. 13693, in section III.C.8. of these Instructions, are required strategies that will also help agencies meet these targets.

FEMP's updated guidance will provide instructions on approaches to right size agency fleets and increase alternative fuel use, including calculating the efficiency of fuel types.

5. Telematics

E.O. section 3(g)(iii): *collecting and utilizing as a fleet efficiency management tool, as soon as practicable but not later than two years after the date of this order, agency fleet operational data through deployment of vehicle telematics at a vehicle asset level for all new passenger and light duty vehicle acquisitions and for medium duty vehicles where appropriate;*

Telematics means technology-based hardware tools to collect and record vehicle operational data. Telematics in vehicles can be installed by the manufacturer as standard equipment, added as an after-market product, or accessed as a wireless mobile application.

Within two years, all agencies should ensure that telematics collects the maximum vehicle diagnostics (fuel consumption, emissions, maintenance, utilization, idling, speed, and location data) at the asset level for acquisitions of new light duty and medium duty vehicles. The goal of this section is for agency fleets to adopt telematics for new acquisitions where life-cycle cost effective. GSA shall endeavor to obtain competitive prices through volume procurements to support these requirements. For GSA fleet leasing agencies, mileage data will continue to be captured as it is currently until accurate mileage information is able to be passed through via telematics devices. GSA in consultation with CEQ and OMB will provide guidance for agencies to address the requirements of this section.

Agencies are strongly encouraged to acquire telematics through GSA to leverage volume procurement opportunities and standardize data reporting. Beginning in the 2016 reporting cycle, an agency's fleet

management plan (FMP) shall address the agency's efforts to comply with the telematics requirement in new light and medium duty vehicles. An agency's FMP should indicate if the agency acquired the agency's telematics system through GSA or directly from a vendor/company, and if so, the name of the vendor/company. The FMP should describe the type of telematics technology installed, obstacles encountered, lessons learned, and any experiences or other information that may benefit other agencies. Consideration should be given to the impact that aftermarket telematics may have on vehicle warranties.

A May 2014 Government Accountability Office (GAO) Report, entitled *GSA Has Opportunity to Further Encourage Cost Savings for Leased Vehicles*, available at: http://gao.gov/products/GAO-14-443, states that the use of telematics can facilitate cost savings for some fleets by providing fleet managers with information that they can use to reduce fleet size, fuel use, misuse of vehicles, and unnecessary maintenance or lack of maintenance. Various factors, including the level of management support, influence the potential of telematics to facilitate cost savings for a given fleet, so management support is critical.

Pursuant to 41 CFR § 102-34.347, available at: http://www.gpo.gov/fdsys/granule/CFR-2008-title41-vol3/CFR-2008-title41-vol3-sec102-34-347, agencies should ensure that the agency Fleet Management Information System (FMIS) can import data obtained through telematics at the asset level. Additionally, agencies should ensure that the agency FMIS has the capability to export that asset level data to vehicle level government-wide reporting systems.

6. Fleet Data

E.O. section 3(g)(iv): *ensuring that agency annual asset-level fleet data is properly and accurately accounted for in a formal agency Fleet Management System and any relevant data is submitted to the Federal Automotive Statistical Tool reporting database, the Federal Motor Vehicle Registration System, and the Fleet Sustainability Dashboard (FleetDASH) system*

Asset Level Data – The term asset level data refers to vehicle level data. Asset level data for the Federal fleet is currently available for GSA-leased vehicles and some, but not all, agency-owned vehicle fleets. FAST does not collect data by vehicle and consequently does not have data points, for example, associated by make, model, or how many gallons of fuel are used by a specific vehicle.

Asset level data will provide fleet managers with the tools needed to make data-driven decisions to analyze utilization of the Federal fleet, including the ability to identify car sharing opportunities and likely candidates for zero emission or plug-in hybrid vehicles, and compare fuel efficiencies of vehicles by model.

The mechanism currently in place to collect data relevant to fleet energy mandates comprehensively and cost-efficiently across all agencies is FAST. GSA and DOE shall ensure that vehicle level government-wide reporting systems are updated by December 15, 2016 for the primary annual data call to collect asset-level data. In turn, each agency must submit asset level fleet data from its FMIS to government-wide reporting systems, and identify and collect accurate inventory, cost, and use data, in accordance with 41 CFR § 102-34.347, available at: http://www.gpo.gov/fdsys/granule/CFR-2008-title41-vol3/CFR-2008-title41-vol3-sec102-34-347.

Agencies shall continue to ensure that any relevant data is submitted to the Federal Motor Vehicle Registration System, a vehicle and license registration system that creates an automated feed into the law enforcement telecommunications system. Agencies shall also ensure that they provide relevant data

to FleetDASH, a Department of Energy tool that helps agencies monitor their fuel use, identifying both successes and "missed opportunities" to use alternative fuel. Further instructions on these submissions will be provided by DOE.

The Data Quality, Collection, and Reporting Working Group under section 4(k) of the E.O. shall convene a meeting to discuss the feasibility of consolidating reporting requirements into FAST or a future government-wide reporting system specified by GSA and DOE.

7. Zero emissions vehicle (ZEV) or Plug-in Hybrid Vehicle Goal

E.O. section 3(g)(v): *planning for agency fleet composition such that by December 31, 2020, zero emission vehicles or plug-in hybrid vehicles account for 20 percent of all new agency passenger vehicle acquisitions and by December 31, 2025, zero emission vehicles or plug-in hybrid vehicles account for 50 percent of all new agency passenger vehicles and including, where practicable, acquisition of such vehicles in other vehicle classes and counting double credit towards the targets in this section for such acquisitions*

A "*zero emission vehicle*" or "ZEV" means a vehicle that produces zero exhaust emissions of any criteria pollutant (or precursor pollutant) or GHG under any possible operational modes or conditions.

The term "*plug-in hybrid vehicle*", as defined in section 131 of the Energy Independence and Security Act of 2007, means a plug-in electric drive vehicle that: (A) draws motive power from a battery with a capacity of at least 4 kilowatt-hours; and (B) can be recharged from an external source of electricity for motive power (42 U.S.C. § 17011). Plug-in hybrids 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 that can be recharged from the grid.

The ZEV/plug-in hybrid vehicle goal for passenger vehicles will help agencies achieve the overall fleet metric of fleetwide per mile GHG emission reductions. ZEVs and plug-in hybrids are a tool to meet the overall fleet targets by requiring that each fleet increases the percentage of new passenger vehicle acquisitions that are ZEVs or plug-in hybrid vehicles to 20% by 2020 and 50% by 2025.

The "double bonus" for acquisitions other than new passenger vehicles means that vehicles that are not in the denominator of the calculation – passenger vehicle ZEVs/plug-in hybrids divided by overall new passenger vehicles – will continue to be included in the numerator (bonus) and excluded from the denominator, an additional bonus. FEMP's updated guidance will provide further instructions on how to apply double credit towards the target in this section.

8. Planning for Fleet Charging Infrastructure

E.O. section 3(g)(vi): *planning for appropriate charging or refueling infrastructure or other power storage for zero emission vehicles or plug-in hybrid vehicles and opportunities for ancillary services to support vehicle-to-grid technology*

This Administration is committed to reducing GHG emissions in the Federal fleet. This includes encouraging the adoption of advanced technology vehicles, such as plug-in hybrids and zero emission vehicles (ZEV). By deploying charging opportunities at Federal facilities, agencies make electric vehicle (EV) technology more convenient and support the sustainability practices within E.O. 13693 and the activities of the President's *EV Everywhere Grand Challenge*.

GSA shall ensure that charging stations are available through GSA with vehicle level data reporting capabilities. Agencies shall similarly procure charging stations and, where possible, infrastructure that will allow for vehicle level data reporting capabilities.

In planning for appropriate charging infrastructure, agencies shall:

- Identify the type of charging equipment (*e.g.*, Level 1 – 120V electrical outlets, Level 2 – 240V charging stations) and number of EV parking spots that are utilized for charging Federal vehicles and any consideration given to the development of policies for personal use, consistent with agency authority and appropriations law, when not used for charging Federal vehicles;
- Assess any maintenance, operation, safety and security procedures;
- If applicable and consistent with agency authority, amend newly acquired parking leases and other vendor contracts to include provisions for charging Federal fleet vehicles.

Vehicle to Grid Technology – "*Vehicle to grid*" or "*V2G*" means the ability of a vehicle to both receive power from the grid and deliver power to the grid on command.

The Los Angeles Air Force Base will become the first Federal facility to replace 100% of its general purpose vehicle fleet with plug-in electric vehicles (PEVs). With over 40 vehicles and charging stations, this represents the largest V2G demonstration in the world. Through V2G technology, the capability of PEVs to receive electricity from the grid and provide electricity back to the grid as needed can be used to help reduce facility energy costs, generate revenues by supporting the public electrical grid, and provide back-up power to the facility during grid outages.

Agencies should consider opportunities for utilizing V2G for demand management and emergency back-up power. Agencies should also consult with local and regional utilities to identify opportunities for cost offsets, and consider how the ability to export power from vehicles might expand operational capabilities when its vehicles are not grid connected.

9. Agency Chief Sustainability Officer, Fleet Review and Approval Procedures

E.O. section 7(e) Duties of Principal Agencies – *To ensure successful implementation of the policy established in section 1 of this order, the head of each Principal Agency shall implement opportunities to improve agency fleet sustainability, including vehicle acquisitions as established in section 3(g) of this order, waiver authority, and fleet data management practices, by revising agency fleet management review and approval procedures to include the Chief Sustainability Officers designated under this section and section 8 of this order*

In right sizing an agency fleet, one of the best tools to ensure the proper stewardship and oversight of fleet management is engaged leadership.

To further the policy aims of section 1 of E.O. 13693, specifically with respect to opportunities for increased efficiency in Federal operations and reductions in spending to save taxpayer dollars through avoided energy costs, this section requires including the agency Chief Sustainability Officer (CSO) or as designated by the CSO, a delegate to approve the acquisition of new vehicle and any vehicle waiver requests under section 701 of the Energy Policy Act of 2005 (see 42 U.S.C. § 6374(a)(3)(E)). Section 701 requires agencies to use alternative fuel in dual fuel vehicles except where the fleet has received a waiver from DOE.

As appropriate, CSOs may develop an approval or waiver process in aggregate or for each transaction. For example, at one large agency, vehicle waivers are generally submitted in one package to the CSO for review, with some additional requests as needed. The vast majority of the work (*e.g.*, reviewing each vehicle order and specification, meeting with field fleet managers, and consolidation of waiver requests from the field and recommendations to leadership) is completed by the agency fleet managers and appropriate staff. The CSO is not involved in tactical decisions; they are only involved after all of these steps have been completed. Overall, the time and burden on the CSO to review and approve vehicle acquisition and waiver requests at a strategic high-level has been very low. This process would be consistent with the Instructions in this section.

Management and organizational support is likewise critical in fleet data practices and submissions. For example, as illustrated in GAO Report 14-443, entitled "*GSA Has Opportunities to Further Encourage Cost Savings for Leased Vehicles (May 2014),*" available at: http://gao.gov/products/GAO-14-443, the GAO found that upper management support, fleet managers' buy-in, and organizational culture will influence the degree to which telematics can facilitate cost savings, since these factors can either support or hinder the cost-savings actions taken in response to telematics data.

Accordingly, CSOs shall develop quality assurance/quality control protocol that require CSOs are included in the approval of data submissions that are used for government-wide analysis, such as for FAST inputs used to generate the Federal Fleet Reports. Implementation of the fleet review and approval activities in this section are required beginning with the FY 2016 reporting cycle.

10. Multimodal Access Plan (MAP) for Commuters

E.O. section 7(f) – *consider the development of policies to promote sustainable commuting and work-related travel practices for Federal employees that foster workplace vehicle charging, encourage telecommuting, teleconferencing, and reward carpooling and the use of public transportation, where consistent with agency authority and Federal appropriations law*

The term "multimodal" in this section refers to promoting sustainable commuting options for more than one method of transportation. A Multimodal Access Plan (MAP) is one way to increase access for Federal commuters to and from Federal facilities by encouraging more transportation choices, and in so doing, reduce scope 3 GHG emissions.

MAP Appendix, 2015 Sustainability Plan – In order to promote sustainable commuting consistent with section 7(f) of the E.O., each agency has the option to include as an appendix to its 2015 SSPP an abbreviated MAP to:

- Provide access for bicyclists to showers and lockers, when available on site;
- Formulate a workplace charging policy and plan by identifying the framework, timeline, and responsible parties; and
- Implement strategies identified in the 2015 SSPP template, "Table 1-2: Goal 1 Strategies – Scope 3 GHG Reductions."

Agencies that choose to lead by example as early adopters of a MAP by submitting it with the 2015 SSPP can receive technical assistance from CEQ in coordination with the Department of Energy's (DOE) Office of Energy Efficiency & Renewable Energy, and other agencies as appropriate, and may be able to receive recognition in a special Federal workforce category as part of DOE's Workplace Charging Challenge.

Within 270 days of the issuance of these Instructions, the Department of Transportation shall:

- Reconvene the Interagency Task Force on Bicycling and Active Transportation;
- Lead the reconvened Task Force in development of appropriate updates to the document entitled, "*Implementing a Successful Bicycle and Active Commuting Program in the Washington, DC Metropolitan Area.*" Such updates should include expansion to metropolitan areas with major Federal offices and facilities.
- Evaluate ways to administer the commuter transit subsidy to encourage more bicycle trips and provide recommendations to CEQ and OMB.

MAP Appendix, 2016 SSPP and Beyond – In the 2016 SSPP and in future SSPPs, each agency shall consider those items contained in the 2015 SSPP MAP appendix above, and the following:

- Offering Federal employees commuting reimbursement for bicycling, pursuant to 26 U.S.C. § 132 (f)(1)(D);
- In planning for appropriate workplace charging:
  - Identifying the type of charging equipment (*e.g.*, Level 1 – 120V electrical outlets, Level 2 – 240V charging stations) and number of EV parking spots that are utilized for charging personal vehicles, consistent with agency authority and appropriations law, when not used for charging Federal vehicles;
  - Assessing any maintenance, operation, safety and security procedures;
  - If applicable and consistent with agency authority, procedures for payment by employees to cover electricity and administration costs of EV parking.
- Strategies identified in the updated Interagency Task Force on Bicycling and Active Transportation document referenced above, including providing for bicycle commuting infrastructure;
- Planning for facilitation of activities to increase telecommuting, teleconferencing; and
- New strategies to incentivize carpooling and the use of public transportation to and from Federal facilities, such as including real time transit screens in agency common areas, and leveraging public-private partnerships as appropriate, including for vehicle and bicycle sharing programs.

Charging Personal ZEVs or Plug-in hybrids – Section 7(f) of E.O. 13693 directs Principal agencies to consider the development of policies to promote sustainable commuting and work-related travel practices for Federal employees, including policies that foster workplace vehicle charging. As noted above, agencies are expected to submit workplace charging plans as part of the MAP as an appendix to the SSPP beginning in 2016 and annually thereafter. In cases where an agency has already implemented EV charging for personal use by employees, CEQ is interested in learning about those practices. The agency should provide CEQ with the relevant agency authorities and policies along with its SSPP. All agencies shall post their final plans on the agency's public website in conjunction with the 2016 SSPP approval process.

In the past, some agencies have inquired about the effect of GAO opinions on the use of appropriated funds to pay for the personal expenses of Federal employees. CEQ and OMB believe those opinions present a different set of facts than what is contemplated by E.O. 13693. E.O. 13693 directs agencies to promote sustainable commuting practices and foster charging of personal EVs, where consistent with agency authorities and appropriations law. For example, the cost of electricity is inherent in the operation and maintenance of the lighting and ventilation of Federal parking facilities. Thus, allowing Federal employees to use existing infrastructure that is already installed for government purposes, such as electrical outlets or charging stations, to charge their own vehicles may be incidental in certain circumstances to the operation of a government parking facility. If such personal use is in fact incidental, then it is consistent with principles of Federal appropriations law. See United States Capitol

Police – Employee Shuttle, GAO B-305864, January 5, 2006, available at: http://www.gao.gov/decisions/appro/305864.htm.

In addition, to accommodate EV charging in a leased space or where a concessionaire operates a parking facility at a Federal workplace, and consistent with an agency's authorities, an agency may consider negotiating with the contractor or owner of the space to make existing outlets available for EV charging or otherwise install, operate, and maintain charging infrastructure.

Should agencies have questions or concerns pertaining to incidental use, the CEQ Office of Federal Sustainability (OFS) will work with agencies in finalizing the annual MAP submission. OFS strongly encourages agencies to seek OFS counsel for questions pertaining to incidental use.

11. Regional Coordination

E.O. section 10(a) Regional Coordination: *Within 180 days of the date of this order, each EPA and GSA Regional office shall in coordination with Federal Executive Boards established by the Presidential Memorandum of November 10, 1961 (The Need for Greater Coordination of Regional and Field Activities of the Government), the Department of Defense and other agencies as appropriate, convene regional interagency workgroups to identify and address: (a) sustainable operations of Federal fleet vehicles including identification and implementation of opportunities to use and share fueling infrastructure and logistical resources to support the adoption and use of alternative fuel vehicles, including E-85 compatible vehicles, zero emission and plug-in hybrid vehicles, and compressed natural gas powered vehicles*

EPA and GSA regional offices in coordination with each agency's National office and the Federal Executive Boards (FEBs) will convene interagency groups in major Federal cities across the U.S. to identify and address regional implementation of the E.O. In partnership, these entities shall implement strategies to leverage the collective resources of agencies and develop protocol to share fueling infrastructure to support the adoption and use of alternative fuel vehicles, EVs, plug-in hybrid vehicles, and compressed natural gas powered vehicles. GSA Office of Government-wide Policy and EPA shall provide assistance to FEBs to identify regional opportunities for agencies and convene a similar meeting for the headquarters offices who are not associated with an FEB in the Washington, DC metropolitan area.

12. Supporting the Federal Fleet

E.O. section 12: *Supporting the Federal Fleet – (a) GSA shall ensure that vehicles available to Federal agencies for either lease and or sale, at or below market cost, through its vehicle program include adequate variety and volume of alternative fuel vehicles, including zero emission and plug-in hybrid vehicles, to meet the fleet management goals of this order.*

This section ensures that GSA continues to support the fleet goals established in the E.O. and addresses agency comments on lack of availability of alternative fuel vehicles. Therefore, GSA shall ensure the widest possible selection and sufficient volume of alternative fueled vehicles, at or below market cost, including ZEVs and plug-in hybrids, to enable agencies to meet their fleet goals.

E.O. section 12: *Supporting the Federal Fleet – (b) DOE shall assist the United States Postal Service (USPS) in evaluating the best alternative and advanced fuel technologies for the USPS fleet and report on such progress annually as part of the planning requirements of section 14 of this order.*

As needed, the Department of Energy shall provide recommendations to the United States Postal Service (USPS), including evaluating the best alternative fuel technologies for the USPS fleet. Recommendations shall be made available to CEQ and other agencies as appropriate. On an annual basis, the Department of Energy shall also provide recommendations to the USPS and report on its progress in supporting the continued development and deployment of advanced vehicle technologies in the USPS fleet.

13. Agency Strategic Sustainability Performance Plan

E.O. section 14 Agency Strategic Sustainability Performance Plan: *Beginning in June 2015, and continuing through fiscal year 2025, the head of each Principal Agency shall develop, implement, and annually update an integrated Strategic Sustainability Performance Plan (Plan) based on guidance prepared by the Chair of CEQ under section 4 of this order*.

For 2015 only, the SSPP shall include, as appendices, the Fleet Management Plan (FMP) and the 2015 annual VAM report as identified above.

For 2016 and beyond, the SSPP shall include as one appendix the FMP, which will incorporate an annual VAM report that requires approval and publication. The SSPP will also include the remaining tools and strategies listed above in the "MAP Appendix, 2016 SSPP and Beyond."

D. Buildings *(E.O. 13693, Section 3(h))*

1. General

E.O. section 3(h): *improve building efficiency, performance, and management*

Section 4(f) of E.O. 13693 directs the Chair of the Council on Environmental Quality to prepare and issue revised *Guiding Principles* for both new and existing Federal buildings within 150 days of the date of the E.O. Pending publication of the revised documents, agencies should comply with the existing *Guiding Principles* as they currently apply.

On a routine basis, agencies should complete comprehensive energy, water, and waste audits to identify and implement measures to ensure agency buildings are performing at optimal levels. Energy and water audits should not necessarily be limited to just Energy Independence and Security Act (EISA) Sec. 432 "covered facilities"; when and where appropriate, agencies should pursue efficiency and conservation where the best opportunities are found to cost effectively improve portfolio performance. When using remote building performance assessment auditing technology, coordinate with other building inspection, assessment, and commissioning efforts to maximize efficiencies.

2. New Buildings: Energy Net-Zero and Waste or Water Net-Zero

E.O. section 3(h)(i): *improve building efficiency, performance, and management by ensuring, beginning in fiscal year 2020 and thereafter, that all new construction of Federal buildings greater than 5,000 gross square feet that enters the planning process is designed to achieve energy net-zero and, where feasible, water or waste net-zero by fiscal year 2030*

Target: Beginning in FY 2020
Metric: Percentage of new buildings (>5,000 GSF) entering the planning process designed to achieve energy net-zero

Generally, this requirement is similar to what it was under E.O. 13514. The 5,000 gross square feet limitation is new, as is the water or waste net-zero aspirational goal.

Section 433 of EISA of 2007 an incremental reduction in fossil fuel-generated energy use beginning in fiscal year 2010, and elimination of all fossil fuel-generated energy use by fiscal year 2030 and beyond in the design for construction of new Federal buildings and major renovations to Federal buildings.[36] This goal will assist agencies in achieving the EISA mandate, taking into account the long lead times associated with new building construction.

Each agency should strive to minimize GHG emissions and other adverse environmental impacts from new building construction, and building operations. While agencies are encouraged to aspire to net-zero status for energy, and water *or* waste, this is a stretch goal, and therefore agencies will be deemed successful if and when buildings achieve energy net-zero status, and, *where feasible*, water or waste net-zero status. This requirement does not apply to new construction of smaller Federal buildings—5,000 gross square feet or less.

Strategies to move the design, construction, and operation of new buildings toward net zero energy, waste, or water status should take an integrative, whole building perspective, to identify innovative approaches that will not be apparent from a more step-by-step standpoint or a traditional system by system design process. These strategies should be initiated as early in the planning process as possible in order to maximize cost-efficiencies and chances for success.

For new construction, a "*net-zero energy building*" is designed, constructed, and operated such that the actual annual source energy consumption is balanced by on-site renewable energy. Consider the following approaches for net-zero energy buildings:

- Net-zero energy status is attained by a combination of minimizing energy use and implementing renewable energy strategies.
- Use energy modeling and energy use targets during design process to stretch thinking.
- Don't oversize primary mechanical systems.
- Consider energy recovery and cogeneration possibilities.
- Consider alternative strategies for building design such as solar (photovoltaic), wind, solar hot water, solar ventilation preheating, ground sources heat pump, biomass/waste to energy, and geothermal.
- Consider pre-occupancy commissioning and place special emphasis on monitoring the first 12 months (4 seasons) of building operations.

[36] The EISA mandate covers new buildings and major renovations of at least $2,500,000 (in 2007 dollars), as well as new buildings and major renovations that are "public buildings" for which a prospectus to Congress is required under 40 U.S.C. 3007.

Note: The use of alternative energy is not considered as an acceptable method to achieve "net-zero energy building" status, unless either its fuel stock is renewable or it is a combined-heat and power (CHP) facility that displaces conventional fuel. See the accounting discussion in section III.A.3. of these Instructions for guidance on counting the energy benefits of CHP.

For new construction, a "*net-zero water building*" is designed, constructed, or renovated and operated to greatly reduce total water consumption, use non-potable sources as much as possible, and return the equivalent amount of water as was withdrawn from all sources, including municipal supply to the same watershed without compromising groundwater and surface water quantity or quality. Consider the following approaches for net-zero water buildings:

- Limit the consumption of freshwater resources.
- Return water to the same watershed as not to deplete groundwater and surface water.
- Perform water balance assessments of building systems during design to identify unnecessary water uses.
- Implement water conserving approaches.
- Reduce overall industrial, landscaping, and agricultural (ILA) water use.
- Consider rainwater harvesting.
- Use non-potable and alternative water sources (including, recycling and reuse of water).
- Meet lower quality water needs with lower quality water supply.
- Implement smart land use strategies to optimize vegetation, soils, natural processes and natural hydrologic features; use Green Infrastructure to minimize hydrologic impacts and maintain water resources.
- Work within the rainfall footprint.
- Match water quality uses with water quality supplies, *i.e.*, collect condensate from air handlers to supply cooling towers or use lightly treated rainwater and tertiary treated wastewater for flushing toilets.
- Use natural hydrologic features to manage water and provide environmental and community benefits.[37]

A recent U.S. Army study[38] concluded that identifying and exploiting alternative water sources are key to meeting net-zero water goals. Alternative water sources include reclaimed water from groundwater and wastewater treatment plants, condensate capture and rainwater harvesting.

A "*net-zero waste building*" 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. Consider the following approaches for net-zero waste buildings:

- Reduce the amount of solid waste generated.
- Reuse or re-purpose when possible.
- Maximize recycling opportunities.
- Use composting for organic materials.
- Design to provide water supply/drainage as necessary to maintain cleanliness in compostables holding container areas.
- Consider waste to energy to eliminate waste.

[37] http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm
[38] *U.S. Army Net Zero, Water Balance and Roadmap Programmatic Summary*, October 2013 http://www.asaie.army.mil/Public/ES/netzero/.

- Identify alternative disposal methods.

In the U.S. Army example, the Army was able to make substantial progress towards net-zero status for energy, water and waste at several facilities. Though these examples consisted of entire installations or bases, they illustrate what can be achieved in new building construction. Throughout these Instructions the focus is on individual buildings, but for the purpose of calculating net-zero status for energy, water, and waste it is acceptable to bundle buildings into logical groupings based on geographic location or other unifying characteristic (*e.g.*, nearby buildings serviced by a single waste disposal contract).

For new buildings entering the planning process now and in the future, agencies are encouraged to innovate in design, construction, and operation and to test, pilot, and standardize new approaches that make significant progress towards reaching the net zero energy, water, and waste goals, even if these efforts fall short of reaching the net zero goal.

For additional information and guidance for projects "entering the planning process" see OMB's Capital Planning Guide, in the A-11 Circular Part 7: Supplement to Part 7—Capital Programming Guide.[39]

CEQ will work with agencies to develop future Federal guidance, as new net zero building technologies, design, construction, and operation practices evolve.

3. Existing Building Compliance with *Guiding Principles*

E.O. section 3(h)(ii): *improve building efficiency, performance, and management by (ii) identifying, beginning in June of 2016, as part of the planning requirements of section 14 of this order, a percentage of at least 15 percent, by number or total square footage, of the agency's existing buildings above 5,000 gross square feet that will, by fiscal year 2025, comply with the revised Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles), developed pursuant to section 4 of this order, and making annual progress toward 100 percent conformance with the Guiding Principles for its building inventory*

Target: Agency identified percentage conformance with the revised *Guiding Principles* by FY 2025
Milestones: Annual Progress
Metric: Achieve agency designated goal (percentage of existing buildings or percentage of square footage that complies with the *Guiding Principles*)

This goal is a continuation of a requirement for a portion of the building inventory to conform to the *Guiding Principles* with a new target of at least 15% conformance by 2025 but also expands the metrics to allow gross square footage or number of existing buildings as the basis and reflects ongoing CEQ efforts to revise the *Guiding Principles*. Agencies should map out their strategies for achieving this goal before choosing whether to use the number of buildings or the share of GSF as a metric. Agencies should not change metrics for this goal over time unless a dramatic organizational or tempo change occurs. Any change in metric is subject to CEQ review, in consultation with OMB.

"Existing Buildings" that were certified as meeting the *Guiding Principles* on or before September 30, 2015 are "grandfathered in" and are considered to be in compliance with the requirements of this section, and can be counted towards the FY 2025 goal. Each agency, as part of its June 2016 SSPP, is required to establish its goal for the number or total square footage of the agency's existing

[39] https://www.whitehouse.gov/sites/default/files/omb/assets/a11_current_year/capital_programming_guide.pdf

buildings that will comply with the revised *Guiding Principles* by FY 2025. The goal shall be 15% or higher, and does not apply to smaller buildings—5,000 gross square feet or less. Furthermore, each agency shall ensure that all *new major construction, renovation, or repair and alteration* of existing buildings above 5,000 gross square feet complies with the *Guiding Principles* where cost effective. When complying with the *Guiding Principles* when rehabilitating Federally owned historic buildings, agencies should utilize best practices and technologies in retrofitting to promote long term viability of the buildings and preserve their historic character.

In 2014, the Federal Real Property Council changed the definitions to be used when categorizing the sustainability status of Federal buildings. Buildings that are rarely occupied and use *de minimus* energy and water, were added to the "Not Applicable (4)" category. See the *Federal Real Property Council 2015 Guidance for Real Property Inventory Reporting, April 2015* at: http://www.gsa.gov/portal/getMediaData?mediaId=224171

The Guiding Principles have not and do not apply to specific buildings that by law cannot be operated by an agency, such as NSF grant funded buildings.

4. Existing Buildings: Energy, Waste or Water Net-Zero

E.O. section 3(h)(iii) *improve building efficiency, performance, and management by identifying, as part of the planning requirements of section 14 of this order, a percentage of the agency's existing buildings above 5,000 gross square feet intended to be energy, waste, or water net-zero buildings by fiscal year 2025 and implementing actions that will allow those buildings to meet that target*

Target: Agency identified percentage of buildings, by number or by GSF, that will, by FY 2025, be:
1. net zero energy, and
2. net zero water or net zero waste

Metric: Achieve agency designated goal (percentage of the agency's existing buildings, which will achieve energy, waste, *or* water net-zero status)

Each agency, as part of its June 2016 SSPP, is required to establish its goal for the percentage of the agency's existing buildings that will, by FY 2025, achieve energy, waste, *or* water net-zero status. Agencies are encouraged to identify specific buildings, facilities, or installations targeted to achieve Net Zero Status where possible in their SSPPs and highlight how the agency will work to obtain the goal. The goal does not apply to smaller buildings—5,000 gross square feet or less.

Strategies to move existing buildings toward net zero energy, waste, or water status should take an integrative, whole building perspective, to identify innovative approaches that will not be apparent from a more step-by-step standpoint or a traditional building system by building system design process. These strategies shall be initiated as early in the planning process as possible in order to maximize cost-efficiencies and chances for success. Agencies should consider the following strategies for moving existing buildings toward net zero energy, waste, or water status:

Zero Energy

- Use energy audits, commissioning and re-commissioning to identify opportunities for energy efficiency improvements and investments.
- Employ metering and sub-metering to gain detailed understanding of energy use patterns and opportunities for improvement.

- Look for options to replace fossil fuel consumption with renewable energy productions, including both on-site and dedicated off-site solutions.
- Evaluate funding alternatives such as energy savings performance contracts (ESPCs),[40] utility energy service contracts (UESCs),[41] and power purchase agreements (PPAs).[42] Structure these contracts to maximize savings through deep energy retrofits.
- Design building and interiors to take advantage of natural daylight to replace electric lighting where possible. Identify and implement strategies to manage plug loads.

Zero Water

- Use water audits to identify opportunities for water conservation and efficiency improvements.
- Reduce potable and non-potable demand, and associated water use intensity, through conservation and efficiency measures.
- Increase alternative water use, particularly for uses that do not require quality levels associated with potable water, to reduce demand on freshwater sources.
- Identify and eliminate system leaks.
- Reconsider landscape practices such as low-water landscaping/xeriscaping where possible and appropriate.
- Evaluate inclusion of water conservation and efficiency measures in ESPCs and UESCs.

Zero waste

- Reduce the amount of solid waste generated.
- Reuse or re-purpose when possible.
- Maximize recycling opportunities.
- Use composting for organic materials.
- Consider waste to energy to eliminate waste.
- Identify alternative disposal methods.

CEQ will work with agencies to develop future Federal guidance, as new net zero building technologies, design, construction, and operation practices evolve. When implementing net zero strategies (as well as any energy/water efficiency strategies) on historic properties, agencies shall consider the effects of the undertaking on the historic building or district and shall comply with applicable National Historic Preservation Act requirements.

[40] http://energy.gov/eere/femp/energy-savings-performance-contracts
[41] http://energy.gov/eere/femp/utility-energy-service-contracts
[42] http://energy.gov/eere/femp/site-renewable-power-purchase-agreements

5. Energy Efficiency Requirements and Energy and Emissions Reporting for Lease Solicitations

Section 3(h)(iv) *improve building efficiency, performance, and management by including in all new agency lease solicitations over 10,000 rentable square feet: (A) criteria for energy efficiency either as a required performance specification or as a source selection evaluation factor in best-value tradeoff procurements; and (B) requirements for building lessor disclosure of carbon emission or energy consumption data for that portion of the building occupied by the agency that may be provided by the lessor through sub-metering or estimation from pro-rated occupancy data, whichever is more cost-effective*
Section 3(h)(v) *Improve building efficiency, performance, and management by reporting building energy, beginning in fiscal year 2016 as part of the agency scope 3 greenhouse gas emissions for newly solicited leases over 10,000 RSF.*

Target: Beginning in FY 2016, all new lease solicitations for more than 10,000 Rentable Square Feet (RSF) shall:
1) include energy efficiency either as a required performance specification or as a source selection evaluation factor; and
2) require lessors to disclose energy consumption data via sub-metering, sub-metering plus pro-rata share of common area energy consumption, or pro-rata share of emissions and energy use, whichever is more cost-effective, and
3) require energy data reporting and carbon emissions data reporting

Metric: Percent, each fiscal year, of new lease solicitations meeting all three energy efficiency, energy reporting, and carbon emissions reporting requirements.

Beginning in fiscal year 2016, each agency is required to include in all new lease solicitations over 10,000 RSF criteria for energy efficiency, either as a required performance specification or as a source selection evaluation factor in best-value tradeoff procurements.

Furthermore, applicable leases shall include the requirement for building lessor disclosure of energy consumption data through sub-metering or estimation from pro-rated occupancy data, whichever is more cost-effective. Where sub-metering includes only agency space and not building common space, a pro rata share of common space carbon emission/energy consumption data should be allocated to the tenant agency's data.

Exercising an option within an existing lease to extend the term is not subject to the terms and conditions of section 3(h)(iv)(B) or section 3(h)(v). If, however, any action beyond simply exercising an option to extend the term of occupancy, or involves substantial changes in the operation conditions or tenant fit out, or requires more than a simple contract amendment document, should comply with E.O. section 3(h)(iv)(B) and section 3(h)(v) provisions.

By August 2015, GSA, in coordination with agencies with leasing authority, shall develop lease language for energy efficiency performance specifications and source selection evaluation factors, disclosure of energy consumption data provided by the lessor, per the conditions set out in the previous paragraph, to be incorporated in all new lease solicitations over 10,000 RSF.

GSA will collect energy and GHG emissions data for GSA originated leases and convey that data to tenant agencies in a format appropriate for their use in the annual Federal utility data reporting exercise that is due in January. Agencies that initiate their own leases are required to do their own data collection and reporting under this goal.

The Federal government has detailed guidance and procedures for calculating Greenhouse Gas Emissions.[43] For example, DOE's FEMP has developed an extensive methodology to calculate GHG emissions derived from energy use in buildings that meet Federal GHG reporting guidance. Primary data (*i.e.*, energy data, including Green Power/REC data) from private building owners is preferred. Agencies should ensure that any carbon emissions data from private building owners appropriately matches reported energy information and is calculated using Federal GHG accounting standards and procedures.

Federal GHG accounting guidelines, agency determined GHG inventory approaches and organizational boundaries, and section II.B. of these Instructions regarding GHG Reporting should all be considered when agencies decide how energy data and emissions information that they either collect or receive from GSA should be categorized by scope.

6. New Buildings Optimize Space Usage and Consideration of Existing Transportation and Infrastructure

E.O. section 3(h)(vi) *improve building efficiency, performance, and management by including in the planning for new buildings or leases, cost-effective strategies to optimize sustainable space usage and consideration of existing community transportation planning and infrastructure, including access to public transit*

Target: Annual Progress on OMB approved agency plan under the National Strategy for Efficient Use of Real Property, and the Reduce the Footprint policy.
Metric: Meeting milestones in OMB approved agency plan.
Target: Continuous and consistent consideration of Sustainable Locations for Federal Facilities guidance in facilities decisions.
Metric: Inclusion of Sustainable Locations for Federal Facilities guidance considerations in real estate project planning procedures and incorporation in agency Planning and Architecture/Engineering guidelines.

This section of E.O. 13693 focuses on planning new Federal building and leases to cost effectively optimize space usage, thoughtfully reduce the Federal government's real estate footprint, minimize the environmental impacts and GHG emissions associated with the Federal real property decisions, and avoid unnecessary real property expenditures. This section also encourages the coordination of Federal real property decisions with local communities in light of their existing transportation infrastructure and their planned transportation investments, and in consideration of public transit access.

Recently, OMB announced the "Reduce the Footprint" policy and the National Strategy for the Efficient Use of Real Property to assist agencies cost effectively optimize their space usage. Footprint reduction efforts and the greenhouse gas reduction goals of E.O. 13693 are mutually complementary.

See: https://www.whitehouse.gov/sites/default/files/omb/financial/memos/implementation-reduce-the-footprint.pdf, and https://www.whitehouse.gov/sites/default/files/omb/financial/national-strategy-efficient-use-real-property.pdf.

For additional information and guidance for projects "entering the planning process" see OMB's *Capital Planning Guide*, in the A–11 Circular Part 7: Supplement to Part 7—Capital Programming Guide.[44]

[43] http://energy.gov/eere/femp/federal-facility-consolidated-annual-reporting-requirements
[44] https://www.whitehouse.gov/sites/default/files/omb/assets/a11_current_year/capital_programming_guide.pdf

Based on the provisions of E.O. 13693, section 4(g), the *Implementing Instructions – Sustainable Locations for Federal Facilities*[45] are still applicable and will continue to serve as guidance under E.O. 13693.

These Instructions include a detailed delineation of the Principles for Sustainable Federal Locations which ensures that agencies find the appropriate balance of sustainability, cost, and security. Concepts to consider include:

- Advance Local and Regional Planning Goals
  - Consider sustainable locations from a regional perspective, consulting with local officials and considering their recommendations.
  - Consider recommendations of local officials in light of Federal sustainability goals.
- Seek Location-Efficient Sites
  - Prioritize central business districts and rural town centers.
  - Prioritize locations that promote transportation choice.
  - Promote walkable and bikeable sites.
  - Locate in areas that are accessible to a diverse range of employees and visitors.
- Maximize Use of Existing Resources
  - Leverage Investment in Existing Infrastructure.
  - Prioritize Brownfield/Grayfield and Infill Development.
  - Promote the Preservation of Historic Resources and other Existing Buildings.
- Foster Protection of the Natural Environment
  - Preserve Existing Ecosystems.
  - Avoid Development of Green Space.
  - Promote Climate Change Adaptation Planning.

7. Building Design and Deployment, Fleet Charging Infrastructure

E.O. section 3(h)(vii): *improve building efficiency, performance, and management by ensuring that all new construction, major renovation, repair, and alteration of agency buildings includes appropriate design and deployment of fleet charging infrastructure; and Section 7(d)*

All new major construction, repair, or alteration of agency owned buildings shall consider appropriate design and deployment of fleet charging infrastructure when it is relevant to the parking provisions of a facility. The term "charging infrastructure" includes electrical outlets to charge vehicles. For example, parking facilities that undergo major repair or alteration shall consider the viability of electrical outlet accessibility to ZEV or plug-in hybrid vehicles and appropriate signage or pavement markings for Federal fleet usage.

Additionally, in accordance with section 7(d) of the E.O., agencies shall consider as soon as possible the feasibility of ZEV charging in newly acquired leased space or where a concessionaire operates a parking facility at a Federal workplace.

GSA shall ensure that charging station task orders include vehicle level data reporting capabilities. Agencies shall similarly procure charging stations and, where possible, infrastructure that will allow for vehicle level data reporting capabilities.

[45] http://www.whitehouse.gov/administration/eop/ceq/sustainability/sustainable-locations, September 15, 2011.

8. Incorporation of Climate-Resilient Design and Management Elements

Section 3(h)(viii): *improve building efficiency, performance, and management by including the incorporation of climate-resilient design and management elements into the operation, repair, and renovation of existing agency buildings and the design of new agency buildings*

Target: Agency identified percentage conformance with the *Guiding Principles*
Metric: Percentage of existing buildings that incorporate climate-resilient design and management elements into the operation, repair, and renovation; and
Metric: Percentage of new agency buildings that incorporate climate-resilient design and management elements.

Incorporation of climate-resilient design and management elements should take into consideration both the relevance of climate risks as well as the mission criticality of the building to determine the level of resiliency required. Assessing mission criticality is important for wisely allocating scarce Federal resources so that buildings are not over- or under-designed for resilience to our changing climate.

New action to bring resilience into the facility level management – For both new and existing buildings:

1. Incorporate resilient design and management into the building management plan.
2. Identify and evaluate vulnerabilities to natural hazard risks (*e.g.*, earthquakes, drought, storms, floods, sea level rise, wildfires).
3. Consider flood-proofing strategies.
4. Enhance wind resistance.
5. Provide access to electricity in the event of an extended power outage.
6. Improve energy performance of building envelopes (ensure that buildings maintain habitable temperatures in the event of power outages).
7. As appropriate, use information modeling to assess design options and improve decisions based on life cycle analysis.
8. When cost-effective, adopt passive and natural design strategies over active and mechanical systems.

Agencies should update their Climate Adaptation plans as necessary and appropriate and should discuss significant planning and implementation progress in their June SSPPs.

"*Climate resilient design*" means to design assets to prepare for, withstand, respond to, or quickly recover from disruptions due to severe weather events and climate change for the intended life of the asset.

Executive Order 13653, *Preparing the United State for the Impact of Climate Change*[46] requires agencies to "*…develop or continue to develop, implement, and update comprehensive plans that integrate consideration of climate change into agency operations and overall mission objectives and submit those plans to CEQ and OMB for review.*"

E. Acquisition and Procurement *(E.O. 13693, Section 3(i))*

To achieve sustainable acquisition and procurement goals under section 3(i), agencies must be consistent with statutory mandates for purchasing preference. Agencies shall then consider sustainable products

[46] http://www.gpo.gov/fdsys/pkg/FR-2013-11-06/pdf/2013-26785.pdf

and services identified by EPA and included under section 3(i)(ii), or voluntary specification, labels, or standards recommended by EPA as described in section 3(i)(iii)(A). Where no statutory mandates, EPA programs, or EPA recommended specifications, labels, or standards exist, agencies shall consider using voluntary standards as described under section 3(i)(iii)(B).

E.O section 3(i): *promote sustainable acquisition and procurement by ensuring that each of the following environmental performance and sustainability factors are included to the maximum extent practicable for all applicable procurements in the planning, award, and execution phases of the acquisition by:*

1. Statutory Mandates

E.O. section 3(i)(i): *meeting statutory mandates that require purchase preference for***:**

Recycled content products designated by EPA – Recycled content products are items produced with waste materials and byproducts recovered or diverted from solid waste. Section 6002 of the Resource Conservation and Recovery Act (RCRA)[47] requires agencies to purchase EPA-designated products at the highest recovered content practicable. EPA-designated items are listed in the Comprehensive Procurement Guidelines (CPG). Agencies should consult the CPG website[48] to identify designated product categories and recycled-content recommendations.

Further procurement related policies and procedures for products containing recovered materials in procurements can be found in subpart 23.4 of the Federal Acquisition Regulation (FAR).

Energy and water efficient products and services, such as ENERGY STAR qualified and FEMP – designated products, identified by EPA and the Department of Energy (DOE) – Pursuant to statute (42 U.S.C. § 8259b) and DOE regulation (10 CFR § 436.40 *et seq*.), agencies must procure ENERGY STAR or FEMP designated products.

ENERGY STAR[49] is a voluntary program created by EPA and authorized under the Clean Air Act section 103(g) and the Energy Policy Act section 131 to identify and promote energy-efficient products and buildings. EPA is responsible for identifying products that qualify for the ENERGY STAR label.

A FEMP-designated product is a product that is identified by FEMP as being among the highest 25% of equivalent products for energy efficiency. More information on the FEMP-designated product program, including covered product categories and specifications for those categories, can be found on FEMP's website.[50]

Further procurement related policies and procedures for acquiring ENERGY STAR or FEMP designated products can be found in subpart 23.2 of the FAR, including specific provisions and clauses for use in solicitations and contracts.

BioPreferred and biobased designated products designated by the United States Department of Agriculture – Biobased products are defined as products derived from plants and other renewable agricultural, marine, and forestry materials and provide an alternative to conventional petroleum derived products. Preference for procurement of biobased products is established under the authority of section

[47] http://www2.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act
[48] http://www.epa.gov/epawaste/conserve/tools/cpg/index.htm
[49] http://www.energystar.gov/
[50] http://energy.gov/eere/femp/find-product-categories-covered-efficiency-programs

9002 of the Farm Security and Rural Investment Act of 2002, and further amended by the Food Conservation and Energy Act of 2008 (2008 Farm Bill) and the Agricultural Act of 2014 (2014 Farm Bill).

USDA is responsible for establishing and updating a list of covered product categories and biobased requirements for each category. Agencies should consult USDA's BioPreferred Program website[51] for current information.

Section 9002 of The Farm Security and Rural Investment Act of 2002 and FAR subpart 23.4 require that agencies purchase USDA designated biobased items.

2. Products and Services Identified by EPA Programs

E.O. section 3(i)(ii): *purchasing sustainable products and services identified by EPA programs*

Certain EPA programs, as described below, help consumers, including agencies, identify and purchase products and services with reduced environmental impacts. After meeting statutory requirements, agencies shall give preference to products identified by the following programs whenever those products meet performance criteria and are determined to be lifecycle cost effective.

Significant New Alternative Policy (SNAP) chemicals or other alternatives to ozone-depleting substances and high global warming potential hydrofluorocarbons, where feasible, as identified by SNAP – SNAP is a program under Section 612 of the Clean Air Act to ensure that alternatives to ozone-depleting substances present lower overall risk to human health and the environment than the substances they replace. Under SNAP, EPA identifies lists of acceptable and unacceptable substitutes for ozone-depleting substances used in industrial sectors that include air conditioning and refrigeration; fire suppression; cleaning solvents; foam blowing agents; aerosols; adhesives, coatings and inks; sterilants; and tobacco expansion.

EPA is currently evaluating whether specific hydrofluorocarbons (HFCs) in several end uses pose greater risk than other alternatives, based on consideration of risk factors.

Agencies should consult the SNAP program website[52] for updated information on acceptable alternatives to ozone-depleting substances and HFCs.

WaterSense certified products and services (water efficient products) – Products with the WaterSense[53] label are 20% more water efficient than average products in that category. Independent, third-party licensed certifying bodies certify that products meet EPA criteria for water efficiency and performance by following testing and certification protocols specific to each product category.

Safer Choice labeled products (chemically intensive products that contain safer ingredients) – Safer Choice,[54] previously known as Design for the Environment, identifies best in class products that contain chemical ingredients that are safer for human and environmental health.

[51] http://www.biopreferred.gov/BioPreferred/faces/Welcome.xhtml
[52] http://www.epa.gov/ozone/snap/
[53] http://www.epa.gov/watersense/
[54] http://www2.epa.gov/saferchoice

SmartWay Transport partners and SmartWay products (fuel efficient products and services) – The SmartWay Program[55] is an initiative between EPA and the private sector to improve fuel efficiency and reduce greenhouse gas emissions and air pollution resulting from the movement of goods within supply chains. SmartWay Transport Partners are freight carriers and shippers that have committed to benchmark operations, track fuel consumption and improve performance annually. SmartWay vehicles are certified by EPA to have better than average ratings based on both GHG and smog ratings found on all new vehicle fuel economy labels. In addition to purchasing directly from companies that are SmartWay Partners, agencies should encourage or require suppliers to use SmartWay Transport Partners for product delivery, whenever practicable.

3. Non-Federal Specifications, Labels and Standards

E.O. section 3(i)(iii): *purchasing environmentally preferable products or services that*

(A) meet or exceed specifications, standards, or labels recommended by EPA that have been determined to assist agencies in meeting their needs and further advance sustainable procurement goals of this order; or

(B) meet environmental performance criteria developed or adopted by voluntary consensus standards bodies consistent with section 12(d) of the National Technology Transfer and Advancement Act of 1995 (Public Law 104-113) and OMB Circular A-119

EPA is responsible for recommending specifications, standards, or labels that designate environmentally preferable products and services through its Environmentally Preferable Purchasing (EPP) Program.[56] Environmentally preferable products and services are those that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. In selecting product categories for review and recommendations, EPA shall prioritize those categories that represent the largest share of procurement spending across agencies and potential environmental impact.

Within 90 days of these Instructions, EPA shall provide updated guidance on recommended specifications, labels, and standards that designate environmentally preferable products and services, in consultation with OMB and CEQ. This guidance and future interim and final recommendations by EPA shall be published by EPA on the EPP Program website and incorporated by GSA into the Green Procurement Compilation (GPC)[57] in a timely manner.

Where there is no specification, standard, or label recommended by EPA, an agency may elect to use other open and voluntary standards in a procurement. The National Technology Transfer and Advancement Act of 1995 (NTTAA)[58] requires that all agencies use standards developed by voluntary consensus standards bodies instead of government-unique standards unless inconsistent with applicable law or otherwise impractical. OMB Circular A-119[59] provides guidance on Federal use of voluntary consensus standards and on conformity assessment activities.

While the NTTAA and OMB Circular A-119 address the process under which voluntary consensus standards are developed, they do not address environmental performance. EPA has established guidelines for assessing environmental effectiveness of standards used in Federal procurement in section

[55] http://www.epa.gov/smartway/
[56] http://www.epa.gov/epp/
[57] https://sftool.gov/greenprocurement
[58] http://www.gpo.gov/fdsys/pkg/PLAW-104publ113/pdf/PLAW-104publ113.pdf
[59] https://www.whitehouse.gov/omb/circulars_a119/

II of its *Draft Guidelines for Product Environmental Performance Standards & Ecolabels for Voluntary Use in Federal Procurement*[60] *(Draft Guidelines).*

To determine whether a specification, label, or standard that is not yet recommended by EPA through its EPP Program may be used to meet sustainable acquisition goals, an agency shall assess whether the process to develop the specification, label, or standard conforms to the requirements of OMB Circular A-119, and whether the specification, label, or standard conforms to the environmental performance standards guidelines contained in section II of the *Draft Guidelines* (or subsequent updates). The agency should document the basis for the decision in accordance with agency procedures and, as a best practice, the agency may choose to include the documentation in the procurement file.

Prior to using section 3(i)(iii)(B) as a basis for procurement, an agency shall also consult with EPA and provide the results of the agency's own assessment of the specification's, label's, or standard's conformance with section II of the *Draft Guidelines*. EPA shall make those assessments available on its website for use by other agencies. If two or more agencies provide assessments to EPA on voluntary standards for a specific product category, EPA should prioritize its review of the available standards in that category to determine whether to make an interim or final recommendation.

4. BioPreferrred and Biobased Purchasing

E.O. section 3(i)(iv): *acting, as part of the implementation of planning requirements of section 14 of this order, until an agency achieves at least 95 percent compliance with the BioPreferred and biobased purchasing requirement in paragraph (i) of this subsection, to: (A) establish an annual target for the number of contracts to be awarded with BioPreferred and biobased criteria and dollar value of BioPreferred and biobased products to be delivered and reported under those contracts in the following fiscal year. To establish this target, agencies shall consider the dollar value of designated BioPreferred and biobased products reported in previous years, the specifications reviewed and revised for inclusion of BioPreferred and biobased products, and the number of applicable product and service contracts to be awarded, including construction, operations and maintenance, food services, vehicle maintenance, and janitorial services*

Starting in 2016, agencies shall include biobased targets as part of the annual SSPP, unless the agency achieved 95% compliance with BioPreferred and biobased purchasing requirements for the previous fiscal year, demonstrated through contract compliance reviews. Fiscal year compliance will be determined by taking the total number of compliant contract actions for the fiscal year divided by the total number of contract actions reviewed that have applicable biobased purchasing requirements, as demonstrated in Table 5 below:

Table 5 – Biobased Contract Review Data

Biobased Contract Review Data	Quarter 1	Quarter 2	Quarter 3	Quarter 4	FY Combined
Number of contract actions that have applicable biobased requirements	10	20	10	15	55
Number of compliant contract actions	8	20	9	11	48
Percentage compliant	80%	100%	90%	73%	87%

CEQ will notify agencies of their percentage compliance for the previous fiscal year and requirements for reporting biobased targets through the annual SSPP instructions.

[60] http://www.epa.gov/epp/draftGuidelines/

USDA shall provide support in the form of best practices, lessons learned, and other analysis to assist agencies in developing strategies to increase biobased purchasing and achieve compliance with requirements.

Ensure contractors submit timely annual reports of their BioPreferred and biobased purchases – Under Federal Acquisition Regulation (FAR) Clause 52.223-2, *Affirmative Procurement of Biobased Products Under Service and Construction Contracts*, contractors are required to annually report the product types and dollar value of any USDA-designated biobased products purchased by the contractor during the previous fiscal year through the System for Award Management (SAM). As part of regular monitoring of contractor performance, agencies should ensure that contractors meet this reporting requirement to facilitate agency efforts to accurately track and increase biobased purchasing.

5. Copier and Printing Paper

E.O. section 3(i)(v): *reducing copier and printing paper use and acquiring uncoated printing and writing paper containing at least 30 percent postconsumer recycled content or higher as designated by future instruction under section 4(e) of this order*

Agencies are required to purchase copier and printing paper with a minimum of 30% postconsumer recycled content, until such time that a higher minimum content standard is established by CEQ or OMB under section 4(e) of the E.O.

Target: 100% of applicable procurements require preference and/or purchase of products and services that meet statutory mandates; standards established by EPA; relevant specifications, standards, or labels recommended by EPA; and/or other standards developed or adopted by voluntary consensus standards bodies.

Metric: Percentage of new contract actions that contain applicable requirements and/or clauses.

6. Implementation of Requirements in Procurements[61]

Determining applicable requirements – "Applicable" means that the procurement includes purchase or use of products or services for which there are Federal environmental requirements. Agencies shall ensure the sustainable acquisition requirements of this E.O. are considered and deemed either "applicable" or "not applicable" to the products and services purchased by, on behalf of, or for the Federal government during all acquisitions, including new contract actions, Indefinite Delivery, Indefinite Quantity (IDIQ) contracts, task orders against existing contracts, and goods and/or services acquired through purchase cards.

In order to determine whether products or service categories have applicable sustainable acquisition requirements, agencies can consult GSA's Green Procurement Compilation (GPC).[62] GSA is responsible for updating the GPC and ensuring that it provides current and comprehensive information on Federal sustainable acquisition requirements as well as any strategic sourcing vehicles that meet those requirements.

Within 120 days of these Instructions, GSA shall ensure that the GPC is updated to reflect the requirements of this E.O. and update the GPC website thereafter whenever needed.

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[61] For additional instructions on applying requirements to acquisition of electronics, agencies should also consult section III.H. of these Instructions.

[62] http://www.sftool.gov/greenprocurement

Exceptions – **Allowable Exceptions –** Sustainable acquisition requirements are considered practicable unless there is an allowable exception for acquiring sustainable products or services. An allowable exception is available if any of the following conditions exist:

- Product or service cannot be acquired competitively within a reasonable performance schedule.
- Product or service cannot be acquired that meets reasonable performance requirements.
- Product or service cannot be acquired at a reasonable price.
- An exception is provided by statute, such as the exception to procuring ENERGY STAR or FEMP-designated products under 42 U.S.C. § 8259b(b)(2).

The price shall be deemed unreasonable when the total life cycle costs are significantly higher for the sustainable product or service versus the non-sustainable product or service. Life cycle costs are determined by combining the initial costs of a product or service with any additional costs or revenues generated from that product or service during its entire life.

If at any point during the acquisition it is determined that a contract action cannot comply with the sustainable requirements for one of the reasons listed above, the Contracting Officer shall document within the contract file the exception being used and rationale for using the exception.

Including applicable requirements in contract actions – For those acquisitions determined to have applicable sustainability requirements, agencies should ensure requirements are included in the necessary contract documentation, purchase agreements, service agreements, purchase orders, delivery orders, and communications with contractors and sub-contractors, as appropriate. Environmental performance and sustainability requirements can be included in the statement of work (SOW), statement of objectives (SOO), or ordering documents, or through inclusion of applicable FAR and/or agency clauses and provisions.[63] Including environmental requirements in both the SOW/SOO and applicable clauses is considered a best practice.

Note that for products purchased under the GSA Multiple Award Schedule contracts, Government-Wide Acquisition Contracts (GWAC), IDIQ contracts, or Blanket Purchase Agreements (BPA), the applicable FAR clause might be included in the base contract vehicle.

In the contract administration phase, agencies shall ensure that products and services delivered meet the criteria specified in the contract. Agencies shall incorporate compliance with environmental performance and sustainability criteria into processes and procedures for contractor monitoring and performance reviews.

Use of Government-wide and Shared Acquisition Vehicles – Use of government-wide or other shared acquisition vehicles that already include sustainability requirements—for example, certain Federal Strategic Sourcing Initiative (FSSI) contracts, GWACs, IDIQ contracts, Multiple Award Schedule contracts, and BPAs—can assist agencies in acquiring environmentally preferable products and services and achieving sustainable acquisition goals. Agencies should promote use of these vehicles to increase purchasing of environmentally preferable products and services and support achievement of sustainable acquisition goals.

Measuring compliance – Progress toward 100% compliance with sustainable acquisition requirements will be monitored and measured through semi-annual agency contract compliance reviews and/or by

[63] For agencies where the FAR does not apply, contract actions should include relevant clauses and provisions in line with agency-specific acquisition regulations.

information captured in FPDS-NG (or the Integrated Award Environment successor) or other metrics established by CEQ and OMB.

For a contract action to be considered compliant, it should include applicable environmental performance and sustainability factors either in the SOW, SOO, or ordering documents or through FAR and agency supplementary clauses and provisions.

Reporting in FPDS-NG – In accordance with FAR subpart 4.6, agencies shall capture relevant environmental performance and sustainability clauses or provisions contained in the contract award when reporting to FPDS-NG. FPDS-NG contains the FAR required clauses and provisions and the GSA Integrated Award Environment (IAE) will continue to work closely with the FAR Council and interagency governance to ensure FPDS-NG reporting fields continue to align with the Federal Acquisition Regulation. Agencies seeking changes to FPDS, such as additional data fields to facilitate entry of sustainable acquisition data, are invited to address change requests through the established IAE governance process and their agency representative.

Agency Programs to Promote Sustainable Acquisition – Agencies may create programs to promote sustainable acquisition of products and services that exceed Federal requirements. Agencies may create internal policies or sustainable acquisition guidelines, tailored to agency needs and priorities, and consider use of guidelines developed by other agencies, such as DOE's Green Buy Awards Program.

7. Training

Chief Acquisition Officers and Senior Procurement Executives should promote sustainable acquisition training as part of the annual refresher requirements for contracting professionals, Contracting Officer Representatives (CORs), and program and project managers. The Federal Acquisition Institute (FAI) and Defense Acquisition University (DAU) will work with agency Acquisition Career Managers to identify appropriate training for the various segments of the acquisition workforce.

GSA, in collaboration with FAI, DAU, the Sustainable Acquisition and Materials Management (SAMM) Working Group, and other subject matter experts, should: (1) identify and review existing training and related resources and identify any potential skill gaps, (2) develop a plan to update existing training resources and if necessary, identify new specific training development requirements, and (3) develop a plan to maintain the resources for sustainable acquisition training. Specific training topic areas to be considered include sustainable acquisition requirements under this E.O., resources to locate products and services, inclusion of appropriate SOW language and contract clauses, and contract compliance requirements, such as entry of data into FPDS-NG.

Within 90 days, GSA should update its existing trainings to reflect E.O requirements and within 180 days, update CEQ and OMB on plans to further develop and maintain sustainable acquisition training resources.

F. Waste and Pollution Prevention *(E.O. 13693, Section 3(j))*

E.O. section 3 (j)(i): *advance waste prevention and pollution prevention by reporting in accordance with the requirements of section 301 through 313 of the Emergency Planning and Community Right-to-know Act of 1986 (42 U.S.C. §§ 11001 through 11023)*

Each agency shall continue to comply with the provisions set forth in sections 301 through 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), as amended, in light of applicable

EPA guidance, and without regard to the Standard Industrial Classification (SIC) or North American Industrial Classification System (NAICS) delineations. Each agency reporting under EPCRA section 313 shall do so using Internet reporting as provided in EPA's EPCRA section 313 guidance. The Internet reporting includes elements from the Pollution Prevention Act of 1990 section 6607 (42 U.S.C. § 13106).

Contractor Reporting. In addition, in contracts providing for contractor performance at Federal facilities, each agency shall include a requirement that the contractor provide the information needed by the Federal facility to comply with EPCRA and the E.O.

See EPA's website on EPCRA at: http://www2.epa.gov/epcra.

E.O. section 3(j)(ii): *Diverting at least 50 percent of non-hazardous solid waste, including food and compostable material but not construction or demolition materials and debris, annually, and pursuing opportunities for net-zero waste or additional diversion opportunities*
E.O. section 3(j)(iii): *Diverting at least 50 percent of non-hazardous construction and demolition materials and debris*

Diverting 50% or more of non-hazardous waste, including food and compostable material and diverting 50% or more of construction and demolition debris annually is a continuing requirement from previous E.O.s. Large facilities in large metropolitan areas can exceed the 50% diversion rate, which should assist in balancing out facility diversion rates in geographic areas with less recycling infrastructure.

Diversion of organic waste is particularly important because the anaerobic decomposition of organics in municipal solid waste landfills produce significant quantities of methane, which has a Global Warming Potential (GWP) twenty-five times greater than CO_2.[64]

"*Guidance for Measuring Waste Diversion in Federal Facilities*" will be issued shortly to assist agencies in more accurately and consistently reporting waste diversion rates. GSA's Carbon Footprint Tool includes a module for agencies to collect and report their waste diversion data, consistent with the waste diversion guidance.

For information on net-zero waste buildings see the discussion of net-zero waste buildings in section III.D.2. and III.D.4. of these Instructions.

For information about waste reduction, diversion, and pollution preventions, see FedCenter's Pollution Prevention area, available at https://www.fedcenter.gov/programs/p2/. For information about alternatives to chemicals with high global warming potential, see EPA's Significant New Alternatives Policy web site, available at http://www.epa.gov/ozone/snap/index.html.

E.O. section 3(j)(iv): *reducing or minimizing the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of, particularly where such reduction will assist the agencies in pursuing agency greenhouse gas reduction targets established in section 2 of this order.*

This is a continuing requirement from previous E.O.s. Reducing or minimizing the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of is good environmental and economic practice. Agencies should focus special attention on chemicals, particularly refrigerants and other specialty gases that have global warming potentials much higher than CO_2.

[64] http://epa.gov/climatechange/ghgemissions/gases/ch4.html

For information about waste reduction, diversion and pollution prevention, see FedCenter's Pollution Prevention area, available at https://www.fedcenter.gov/programs/p2/.

G. Performance Contracts for Federal Buildings *(E.O. 13693, Section 3(k))*

E.O. section 3(k)(i): *Utilizing performance contracting as an important tool to help meet identified energy efficiency and management goals while deploying life-cycle cost effective energy efficiency and clean energy technology and water conservation measures*

Performance contracting can quicken the pace of GHG emission and energy use reductions achieved by the Federal government and improve the physical condition and operating efficiency of Federal facilities without increasing pressure on capital budgets. Performance contracting also represents an attractive avenue for increasing renewable energy generation and use of alternative energy technologies.

The intent of this section of E.O. 13693 is to embed performance contracting as a familiar and frequently used approach for energy conservation, renewable energy, alternative energy, and water conservation projects in the Federal government. The E.O. also seeks to build on the momentum developed from the first $4 billion in performance contracting efforts under the Presidential Performance Contracting Challenge (PPCC) initiative by applying the institutional knowledge and professional experience gained on projects underway or recently awarded. This section of the E.O. also encourages innovative applications of performance contracting such as regional multi-agency projects and bundling of smaller project to achieve economies of scale.

Agencies should consider a wide variety of performance contracting vehicles. Bundling smaller projects and multi-agency regional projects can increase the economies of scale. The ESPC ENABLE contract mechanism was specifically designed for small scale, repeatable projects with a simplified contracting process. Agencies are encouraged to develop a ladder of projects in various stages of implementation to allow for a continuous stream of contract awards and environmental benefits.

E.O. section 3(k)(ii): *Fulfilling existing agency performance contracting commitments towards the goal of $4 billion in Federal performance-based contracts by the end of calendar year 2016*

"*Fulfilling commitment*" means a contract award of original proposed project or replacement project of equal or greater value in the stipulated time frame.

Target: By December 31, 2016, award contracts equal to the agency PPCC commitment.
Baseline: Agency dollar commitments for PPCC.
Metrics: Value of performance contracts awarded by December 31, 2016 versus agency commitment.

E.O. section 3(k)(iii): *Providing annual agency targets for performance contracting for energy savings to be implemented in fiscal year 2017 and annually thereafter as part of the planning requirements of section 14 of this order.*

Section 14 details the submission requirements of each agency's annual SSPP, which includes agency commitments on performance contracts for Federal Buildings. A general guideline for total cumulative agency performance contracting commitments should be roughly 15% of the annual energy cost times the number of years since FY 2011 or a cumulative total of 15% of utility costs since FY 2011. Include in your agencies' SSPP, due June 2016, your agency's total commitment level for new performance contracts to be awarded in FY 2017 and in FY 2018. Agencies are expected to update the fiscal year

commitments annually via the SSPP. Agency SSPPs are due in June 2016 and should explain the rationale for their commitment levels. Agencies should report every other month on the status of performance contacting projects on the OMB MAX system by the 15th of each reporting month. The portion of an agency's utility budget already committed to ESPC payments can be reduced by an agency's estimated annual energy cost if a summary of those commitments is provided to FEMP

Strategies and Tools

Presidential Performance Contracting Challenge – See DOE FEMP website on Performance Contracting and current status of agencies: http://www.energy.gov/eere/femp/project-funding

Performance Contracting – Performance contracting includes Energy Savings Performance Contracts (ESPCs), Utility Energy Service Contracts (UESCs), and ESPC ENABLE Contracts.

Energy Savings Performance Contracts (ESPCs) – An ESPC is a partnership between an agency and an energy service company (ESCO). The ESCO conducts a comprehensive energy audit of Federal facilities and identifies improvements to save energy. In consultation with the agency, the ESCO designs and constructs a project that meets the agency's needs and arranges the necessary funding. The ESCO guarantees that the improvements will generate energy cost savings to pay for the project over the term of the contract (up to 25 years).
See: http://www.energy.gov/eere/femp/energy-savings-performance-contracts.

Utility Energy Service Contracts (UESCs) – UESCs offer agencies an effective means to implement energy-efficiency, renewable-energy, and water-efficiency projects. Agencies are authorized and encouraged to participate in energy-efficiency, water-conservation, and electricity-demand programs offered by gas, water, or electric utilities. In a UESC, the utility will provide the analysis, design, and installation and when necessary, arrange financing. Agencies may implement a UESC with no initial capital investment or may use appropriated funds strategically to maximize the impact of their projects.
See: http://energy.gov/eere/femp/utility-energy-service-contracts.

Energy Savings Performance Contract (ESPC) ENABLE – The ESPC ENABLE program provides a standardized and streamlined process for small, Federal facilities to install targeted, energy conservation measures (ECMs) in six months or less. Projects are administered through the General Services Administration (GSA) Federal Supply Schedule using a set of pre-established procurement and technical tools. The program allows sites an opportunity to implement specific ECMs including lighting, water, simple Heating, Ventilation, and Air Conditioning (HVAC) controls, HVAC system replacement, and solar photovoltaic. See: http://www.energy.gov/eere/femp/downloads/energy-savings-performance-contract-espc-enable-program.

H. Electronic Stewardship *(E.O. 13693, Section 3(l))*

E.O. section 3(l): *promote electronics stewardship by establishing, measuring, and reporting by:*

(i) ensuring procurement preference for environmentally sustainable electronic products as established in subsection (i) of this section;

(ii) establishing and implementing policies to enable power management, duplex printing, and other energy-efficient or environmentally sustainable features on all eligible agency electronic products; and

(iii) employing environmentally sound practices with respect to the agency's disposition of all agency excess or surplus electronic products.

Reporting

To avoid unnecessary duplication of efforts, agencies shall annually report the metrics for this section as follows:

- *Acquisition and procurement:* All reporting related to the purchase and lease of environmentally sustainable electronic products shall be as described under section III.E.
- *Operation and maintenance*: All reporting related to the implementation of power management and automatic duplexing shall occur through the Office of Management and Budget's IDC[65] for IT metrics.
- *End-of-life management*: All reporting related to responsible disposal of electronics shall occur through the annual report of personal property furnished to non-Federal recipients (Non-Federal Recipients Report), online at https://gsa.inl.gov/property, in accordance with GSA Bulletin FMR B-27, *Annual Executive Agency Reports on Excess and Exchange/Sale Personal Property*,[66] or the most current guidance issued by GSA.

Agencies shall include a summary of performance on these electronics stewardship goals, as reported through the above systems, in their annual SSPP.

Acquisition and Procurement

To meet the requirements of sections 3(i)(i) and 3(l)(i) of the E.O., agencies shall:

- Acquire ENERGY STAR certified electronic products;[67]
- Acquire FEMP-designated electronic products;[68] and
- Acquire toner cartridges that are remanufactured, contain recycled content, or are biobased.

As part of the development of new specifications or the revision of existing specifications for ENERGY STAR or FEMP designated products, EPA and DOE shall require that electronic products meet the Federal requirement for a standby power level of one Watt or less. FEMP shall maintain a list of electronic product categories that have ENERGY STAR specifications that do not yet include the standby power level required above, or otherwise allow products be certified to ENERGY STAR but not meet mandated standby power levels.

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[65] eGov Integrated Data Collection

[66] http://www.gsa.gov/graphics/ogp/FMRBullletinB-27.docx

[67] http://www.energystar.gov/

[68] http://energy.gov/eere/femp/find-product-categories-covered-efficiency-programs

If ENERGY STAR does not have a specification for a specific electronic product, or has not yet revised their specification in accordance with the above paragraph, agencies shall acquire electronic products with standby power levels of one Watt or less, or if that is not available, the product with the lowest standby power level available.

When all sustainable acquisition requirements for toner cartridges cannot be met in the same product, remanufactured and recycled content should receive purchasing priority over biobased toner.

Unlike prior executive orders, E.O. 13693 requires that all applicable procurements, rather than 95%, of purchases for electronic products be environmentally sustainable including those electronic products typically used in office spaces and data centers.

As required by E.O. 13693, EPA will issue recommendations for procurement of sustainable electronics. To meet the requirements of sections 3(i)(iii) and 3(l)(i) of the E.O., agencies shall acquire electronic products that meet or exceed specifications, standards, or labels recommended by EPA which are available at http://www.epa.gov/greenerproducts/eparecommendations/.

In the interim, Federal purchasers may continue to use the EPEAT product registry, or other methods to identify products that have been third-party verified as having met environmental performance criteria[69] developed or adopted by voluntary consensus standards bodies consistent with section 12(d) of the National Technology Transfer and Advancement Act of 1995 (Public Law 104-113) and OMB Circular A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*. (Specifically, see section III.E.3 of these Instructions. *Non-Federal Specifications, Labels and Standards* for a details on the use of voluntary consensus standards.)

Unlike prior executive orders, E.O. 13693 does not include a specific reference to Electronic Product Environmental Assessment Tool (EPEAT). However, EPEAT is currently the only tool available to achieve the electronic stewardship mandates of section 3(l) of E.O. 13693. Any future tools shall meet or exceed current levels of sustainable and environmental performance. E.O. 13693 continues to require that agencies promote electronic stewardship throughout the acquisition lifecycle and ensure a procurement preference for environmentally sustainable electronic products.

Operations and Maintenance

Power management refers to the utilization of ENERGY STAR features on ENERGY STAR certified electronics, in order to save energy. Power management features place computers and displays into a low-power a low power mode after a period of inactivity.

Agencies shall enable power management features on all eligible, non-exempt computers and displays which are running or connected to a computer which is running an operating system capable of power management (including Windows, Mac and Linux operating systems).

All agency computers, computer displays, and notebook computers should enter a low power mode or turn off after a period of inactivity. Power management features are "enabled" if a computer is set to enter "system standby" or "hibernate" after a specified period of inactivity. The specified period of inactivity shall be set to a specific time frame, and not "Never." Enabling "turn off hard disks" for computers and laptops is not considered power management. Power management features shall be

[69] Per subsection 3(i)(iii)(B) of the E.O.

enabled for both the computer and display on notebooks. End users should not be able to disable power management unless using an exempt computer and/or display.

"Eligible" computers and displays include all computers and displays in use by the agency, including contractor-owned equipment operating in government space, unless exempt using agency policies and procedures. Exemption from power management requirements may be provided for 1) equipment running mission critical applications (*i.e.*, facility security monitoring, air traffic control, uninterruptable laboratory experiments); and 2) equipment incapable of being power managed due to make, model, or operating system. Exemptions shall not be provided for the purposes of patching or virus scanning.

Agencies are encouraged to use active power management systems that are capable of monitoring the energy consumption and power settings of network-enabled IT equipment and applying power management protocols to optimize energy efficiency.

Agencies needing technical assistance in implementing power management should contact ENERGY STAR for free technical assistance.[70]

Agencies are encouraged to consider guidance, policies and procedures for shutting down unused electronics at the end of each work day.

Agencies are encouraged to consider the use of smart power strips for reducing the amount of energy used by electronics not actively in use. See the GSA Green Proving Ground report at http://www.gsa.gov/portal/content/164611.

Agencies shall enable automatic duplexing (*e.g.*, double-sided printing) features on all eligible, non-exempt imaging equipment (*e.g.*, copiers, printers, scanners, multifunction/all-in-one devices, and fax machines) and computers sending jobs to imaging equipment.

Agencies shall default to monochrome (black and white) printing rather than color.

Automatic duplexing is "enabled" if a computer is set to automatically print jobs double-sided by default. Automatic duplexing is "enabled" if imaging equipment is set to automatically print double-sided by default. End users may be given the option to manually select single-sided printing for individual jobs, either on their computers or on individual imaging equipment.

"Eligible" computers include all computers in use by the agency that send jobs to imaging equipment and all imaging equipment capable of printing and automatic duplexing, including contractor-owned equipment operating in government space, unless exempt using agency policies and procedures. Exemption from automatic duplexing requirements may be provided for 1) computers and imaging equipment on which the majority of jobs must be single-sided due to legal regulations or protocols; and 2) equipment incapable of automatic duplexing due to make and model. When this equipment has reached its end of useful life, and if such equipment is to be replaced, it shall be replaced with energy efficient models with duplexing capabilities.

To support automatic duplexing and other energy-efficient or environmentally sustainable practices related to print management, agencies shall develop new guidance or revise existing guidance to be

[70] http://www.energystar.gov/powermanagement

consistent with the "Federal Sustainable Print Management Policy Template," published in GSA Bulletin FMR B-39,[71] or the most current guidance issued by GSA.

Agencies are encouraged to join GSA's PrintWise program.[72]

End-of-Life Management

In addition to adhering to applicable Federal Management Regulation and agency property management regulation and guidance, agencies shall follow the guidelines in GSA Bulletin FMR B-34, "Disposal of Federal Electronic Assets," (or the most current guidance issued by GSA) for the disposition of excess and surplus electronics or when returning leased electronics. Bulletin FMR B-34 identifies the following hierarchy:

- Reuse, within an agency and through transfers, donations and sales; and
- Recycling, through certified recyclers and manufacturer take-back programs using certified recyclers.

Excess and surplus electronics should not be disposed of in landfill or incinerators.

When contracting with electronics recyclers, agencies shall use the following sources:

- UNICOR;[73]
- U.S. Postal Service BlueEarth;[74] and/or
- Other electronics recyclers or refurbishers, including manufacturer take-back programs, which are third-party certified or rely on third-party certified recyclers or refurbishers.

GSA shall periodically review environmentally responsible recycling standards and related certification programs in collaboration with its stakeholders. Until additional recommendations are available, GSA recognizes only two environmentally responsible recycling standards and related third-party certification programs, the Responsible Recycling (R2) program and the e-Stewards® program. Additional information on certification, and a map of certified recycling and refurbishing facilities, is available at http://www.epa.gov/osw/conserve/materials/ecycling/certification.htm.

Agencies shall review, and incorporate into policies and procedures as appropriate, NIST 800-88 *Guidelines for Media Sanitization*.[75]

[71] http://www.epa.gov/epp/pubs/products/PrintMgmtTemplate.docx
[72] https://strategicsourcing.gov/print-wise
[73] http://www.unicor.gov/Recycling.aspx
[74] http://blueearth.usps.gov/
[75] http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-88r1.pdf

I. Supply Chain Greenhouse Gas Management *(E.O. 13693, Section 15)*

E.O. section 15: *Supply Chain Greenhouse Gas Management. In implementing the greenhouse gas management policies in section 1 of this order and to better understand and manage the implications of Federal supply chain greenhouse gas emissions:*
E.O. section 15(a): *the Chair of CEQ shall, within 30 days of the date of this order and annually thereafter, identify and publicly release an inventory of major Federal suppliers using publicly available Federal procurement information, including information as to whether the supplier has accounted for and publicly disclosed, during the previous calendar year, annual scope 1 and 2 greenhouse gas emission data and publicly disclosed a greenhouse gas emission reductions target (or targets) for 2015 or beyond*

CEQ will be responsible for the preparation and release of an inventory of major suppliers that reflects each supplier's status on public disclosure of greenhouse gas emissions and public disclosure of greenhouse gas goals or targets. Major suppliers will be determined according to total value of contracts received during the previous fiscal year from agencies that report contract data in FPDS.

Supplier greenhouse gas inventories should be conducted in accordance with the GHG Protocol Corporate Standard[76] or similar standard. Public disclosure means that the information is available and accessible to the general public, for example, by posting the information on the company's website; through a company sustainability report, annual report, or similar document; or by reporting annual emissions and/or targets to an emissions reporting program or registry.

E.O. section 15(b): *the seven largest Federal procuring agencies shall each submit for consideration, in conjunction with the planning requirements of section 14 of this order, a plan to implement at least five new procurements annually in which the agency may include, as appropriate, contract requirements for vendors or evaluation criteria that consider contractor emissions and greenhouse gas emissions management practices. The plans submitted for consideration may include identification of evaluation criteria, performance period criteria, and contract clauses that will encourage suppliers to manage and reduce greenhouse gas emissions, and shall be implemented as soon as practicable after any relevant administrative requirements have been met*

Beginning in 2016, the Chief Acquisition Officer (CAO) of each of the seven largest procuring agencies shall be responsible for development and implementation of an annual Procurement Plan to Reduce Supply Chain Emissions ("Procurement Plan") that identifies at least five procurements to be implemented by the following fiscal year. The seven largest procuring agencies will be determined annually by the criteria indicated below under "Applicability to Agencies."

CAOs should coordinate with program staff, sustainability subject matter experts, and others as appropriate in plan development. Agencies will submit annual Procurement Plans beginning with the 2016 SSPP; however agencies are encouraged to implement two or more pilot procurements in FY 2016. Agencies may also choose to include strategies and planned actions for procurements under the Sustainable Acquisition section of the SSPP.

[76] http://www.ghgprotocol.org/

Plans should include, at minimum:

- methodology for selecting procurements for the following fiscal year;
- description of the selected procurements and reasons for selection, including, but not limited to, category, type, and goods or services to be acquired under the contract; time period; total value; use of evaluation criteria, performance period requirements, and/or contract clauses relevant to contractor GHG emissions; and strategies and/or metrics to evaluate outcomes and impacts; and
- in 2017 and beyond, an assessment of lessons learned, best practices, and evaluation of previously implemented procurements, including GHG gas reductions and related impacts, if applicable and available.

Strategies and Tools

In selecting procurements, agencies should consider:

- products or services critical to the agency's mission;
- procurements that constitute a significant share of agency contract spending;
- consideration of the potential GHG emissions associated with the products or services procured; spend categories determined to represent the greatest supply chain / lifecycle greenhouse gas emissions for the agency;
- assessment of existing supplier GHG gas management practices, including reporting and reduction targets, of the agency's 50 largest suppliers, based on recent agency contract spending;
- whether the contract vehicle, such as a GWAC, Multiple Award Schedule contract, IDIQ contract, or BPA, has potential to further the goals of this section beyond the individual procurement selection action; and
- other relevant criteria identified by the procuring agency.

In determining criteria and/or contract requirements, agencies may consider, where appropriate to the procurement:

- evaluation criteria that incorporate contractor GHG disclosure, GHG emissions goals or reduction targets, and/or GHG performance as a factor in contractor selection;
- contract requirements for vendors to publicly disclose GHG emissions and/or establish emissions goals or reduction targets;
- reporting requirements for contractors, for example, accounting for or allocating GHG emissions associated with delivery of products or services under the contract, using an appropriate methodology; and
- other approaches designed to inform agency procurement strategies and reduce contractor GHG emissions.

Other Considerations

Applicability to Agencies

Agencies required to submit a Procurement Plan will be determined on an annual basis according to total contract spending in the previous fiscal year, based on data reported FPDS-NG. By January 30, 2016 and annually thereafter, CEQ will inform Chief Sustainability Officers if their agencies are required to develop and submit a Procurement Plan with the annual SSPP. In addition, any agency that submitted a Procurement Plan in the previous year shall submit, at minimum, an assessment of lessons learned and best practices as well as an evaluation of previously implemented procurements as described above.

Agencies not required to submit a Procurement Plan are encouraged to pursue strategies that include consideration of supply chain GHG emissions, to include top strategies within Sustainable Acquisition section of the SSPP, and to submit Procurement Plans where beneficial to achieving agency goals and objectives.

Program Coordination, Guidance, and Models

In conjunction with OMB, CEQ will facilitate development of tools, resources, models, and/or guidance to assist agencies in developing, implementing, and evaluating impacts of procurements under this section of the E.O.

CEQ will establish an interagency working group to assist in developing recommendations on procurement strategies to reduce supply chain emissions, to include GSA, DOD, DOE, HHS, VA, NASA, DHS, EPA, and other agencies as appropriate. The Sustainable Acquisition and Materials Management working group, in coordination with OMB and CEQ, may also support identification and sharing of best practices, potential procurement strategies, and model contract language and criteria.

Appendix – List of Acronyms and Abbreviations

BPA	Blanket Purchase Agreement
Btu	British thermal unit
CAFE	Corporate Average Fuel Economy
CAO	Chief Acquisition Officer
CCS	carbon capture and storage
CEQ	White House Council on Environmental Quality
CF	conversion factor
CF_4	perfluoromethane
CFO	Chief Financial Officer
CFOA	Chief Financial Officers Act
CFR	Code of Federal Regulations
CHP	combined heat and power
CIO	Chief Information Officer
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COR	Contracting Officer's Representative
CPG	Comprehensive Procurement Guidelines
CSO	Chief Sustainability Officer
DART	Determining Agency Reduction Targets
DAU	Defense Acquisition University
DC	District of Columbia
DCEP	Data Center Energy Practitioner
DCIM	Data Center Infrastructure Management
DHS	Department of Homeland Security
DLA	Defense Logistics Agency
DM&E	Development Modernization and Enhancement
DOD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
DSM	demand-side management
E.O.	Executive Order
EERE	DOE's Office of Energy Efficiency and Renewable Energy
eGRID	Emissions & Generation Resource Integrated Database
EISA	Energy Independence and Security Act of 2007
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPACT	Energy Policy Act of 2005
EPCRA	Emergency Planning and Community Right to Know Act
EPEAT	Electronic Product Environmental Assessment Tool
EPP	Environmentally Preferable Purchasing
ESCO	energy service company
ESPC	Energy Savings Performance Contracts
ESTCP	Environmental Security Technology Certification Program
EV	electric vehicle
FAI	Federal Acquisition Institute
FAR	Federal Acquisition Regulation
FAST	Federal Automotive Statistical Tool
FEB	Federal Executive Boards

FEMP	DOE's Federal Energy Management Program
FESWG	Federal Electronics Stewardship Working Group
FITARA	Federal Information Technology Acquisition Reform Act
FleetDASH	Fleet Sustainability Dashboard
FMIS	Fleet Management Information System
FMP	Fleet Management Plan
FMR	Federal Management Regulation
FPDS--NG	Federal Procurement Data System – Next Generation
FSSI	Federal Strategic Sourcing Initiative
FY	fiscal year
GAO	General Accounting Office
GGE	gallons of gasoline equivalent
GHG	greenhouse gas
GPC	Green Procurement Compilation
GS	General Schedule
GSA	General Services Administration
GSF	gross square foot
GVWR	gross motor vehicle weight rating
GWAC	Government-Wide Acquisition Contract
GWP	global warming potential
HHS	Department of Health and Human Services
HVAC	Heating, Ventilation, and Air Conditioning
IAE	GSA's Integrated Award Environment
IDC	OMB's Integrated Data Collection
IDIQ	Indefinite Delivery, Indefinite Quantity
ILA	industrial, landscaping, and agricultural
INTERFUEL	Interagency Committee on Alternative Fuels and Low Emission Vehicles
IT	information technology
kW	kilowatt
kWh	kilowatt-hours
MAP	Multimodal Access Plan
MSW	municipal solid waste
MWh	Megawatt-hours
NAICS	North American Industrial Classification System
NASA	National Aeronautics and Space Administration
NECPA	National Energy Conservation Policy Act
NF_3	nitrogen trifluoride
NIST	National Institute of Standards and Technology
NREL	DOE's National Renewable Energy Laboratory
NSF	National Science Foundation
NTTAA	National Technology Transfer and Advancement Act of 1995
OFS	Office of Federal Sustainability
OMB MAX	OMB data collection system/tool
OMB	Office of Management and Budget
OPM	Office of Personnel Management
PPA	purchase power agreements
PPCC	Presidential Performance Contracting Challenge
PUE	Power Usage Effectiveness
R2	Responsible Recycling program

RCRA	Resource Conservation and Recovery Act
REC	renewable energy certificates
RSF	rentable square feet
SAM	System for Award Management
SAMM	Sustainable Acquisition and Materials Management
SIC	Standard Industrial Classification
SMR	small modular nuclear reactor
SNAP	EPA's Significant New Alternative Policy
SOO	statement of objectives
SOW	statement of work
SSPP	Strategic Sustainability Performance Plan
SWMM-CAT	Storm Water Management Model Climate Adjustment Tool
U.S.C.	United States Code
UESC	utility energy services contracts
UPS	Uninterruptible Power Supply
URL	Uniform Resource Locator
USDA	United States Department of Agriculture
USPS	United States Post Office
V2G	Vehicle to grid
VA	Department of Veterans Affairs
VAM	Vehicle Allocation Methodology
WAPA	Western Area Power Administration
ZEV	Zero emissions vehicle