

U.S. Department of Health and Human Services Strategic Sustainability Performance Plan July 2017

Jonathan Herz, FAIA, LEED® AP Acting Branch Chief, Real Property Policy & Strategy Program Support Center U.S. Department of Health & Human Services Jonathan.Herz@hhs.gov

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Policy Statement

In 2016, the U.S. Department of Health and Human Services (HHS) outlined a wide range of strategies in its Strategic Sustainability Performance Plan (SSPP) focused on improving the energy efficiency of HHS-owned facilities at the National Institutes of Health (NIH), the Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), and the Indian Health Services (IHS). These strategies enhance the agency's ability to focus our resources on the HHS mission to enhance the health and well-being of the American people. The 2017 HHS SSPP reiterates our commitment to sustainability by increasing the efficiency of our existing facility operations and supply chain, constructing new facilities that meet the Guiding Principles for Sustainable Federal Buildings, and achieving the targets established in Executive Order (E.O.) 13693, *Planning for Federal Sustainability in the Next Decade*.

HHS continues to make progress in conserving water, solid waste diversion and recycling, power management of electronic devices, data center consolidation and power usage effectiveness, inclusion of applicable sustainability requirements in new contract actions, reduction of fuel use in HHS fleet vehicles, and, in particular, the reduction of energy use intensity in our facilities. Through the award of \$32,000,000 in energy performance contracts in FY 2016, the Department improved the existing infrastructure without the use of additional appropriated taxpayer funds. As a result of previous HHS energy performance contracts and implementation of the energy conservation strategies outlined in the 2016 HHS SSPP, HHS reduced energy intensity (Btu per gross square foot) by 6.5% from the FY 2015 baseline year. In FY 2017, HHS anticipates awarding \$22,400,000 of energy performance contracts. In the 2017 HHS SSPP, HHS has committed to implementing additional energy performance contracts at HHS campuses totaling \$2,300,000 in FY 2018 and \$9,300,000 in FY 2019.

As the Chief Sustainability Officer for HHS, I am committed to leading the way on the implementation of the sustainable practices outlined in E.O. 13693. The 2017 HHS SSPP describes the plan of action HHS intends to take to promote sustainability across our Department and catalogs our accomplishments in the past fiscal year. Through our Department's accomplishments and future commitments, we set the standard for responsible stewardship and sustainable operations and support a healthier future for the American people.

John A. Bardis Assistant Secretary for Administration HHS Chief Sustainability Officer

Executive Summary

Vision

The HHS 2017 Strategic Sustainability Performance Plan (SSPP) clearly states the Department of Health and Human Services (HHS) policy and intention to develop and implement health-related sustainability goals across the agency and throughout Federal partnerships. The Department's non-landholding divisions take actions outlined in the "Green Office Guides" to achieve the goals. The Department's four landholding Operating Divisions (OPDIVs); the Food and Drug Administration (FDA), the Centers for Disease Control (CDC), the National Institutes of Health (NIH), and the Indian Health Service (IHS) are guided by their Sustainability Implementation Plans (SIPs). An SIP also guides the actions of the Department's Program Support Center (PSC), which has delegated authority to operate and maintain various HHS facilities occupied under occupancy agreements with the General Services Administration (GSA).

HHS has made significant progress in achieving sustainability goals. However, additional opportunities for integrating the SSPP into health and human service programs exist. To capitalize on these opportunities, OPDIV Chief Sustainability Officers collaborate with HHS health-program leadership, grant and strategic planning professionals, and experts on the health and infrastructure impacts of climate change.

HHS will continue to incorporate sustainable practices into mission-related initiatives. In addition to incorporating sustainability concepts into internal and external policies and procedures, HHS will better educate grantees on sustainability and climate adaptation resilience guidance and best practices by building partnerships with complementary programs, such as the National Prevention Strategy, Environmental Justice Strategy, Healthy People 2020, and the National Health Security Strategy.

Leadership

The Assistant Secretary for Administration (ASA) is the HHS Chief Sustainability Officer (CSO) who leads and oversees all aspects of HHS' plan. The CSO's key partners and program champions are as follows:

- OPDIV Chief Sustainability Officers
- Assistant Secretary for Health
- National Institute of Environmental Health Sciences
- Chief Acquisition Officer
- Chief Procurement Officer
- Chief Financial Officer
- Chief Information Officer
- Senior Real Property Officer

Performance Summary Review

Goal 1 – Greenhouse Gas (GHG) Reduction

In FY 2016, HHS Scope 1 and 2 GHG emissions were 22.5% less than FY 2015 and 40.8% less than the FY 2008 baseline year. This exceeds the HHS FY 2025 target of a 38.7% reduction. This 6.5% decrease was due primarily due to favorable weather conditions and the transfer of IHS property to Tribes. The most significant energy reductions were seen at FDA, IHS and NIH.

The FDA Muirkirk Road Complex (MRC), the FDA Jefferson Labs Complex (JLC) and NIH exhibited the greatest reductions primarily in natural gas and steam use, due to mild winter temperatures. IHS transferred several hospitals to tribal operation, thereby decreased reported facilities' square footage. This included the Alaska Native Medical Center which was very energy intensive due to geographical location. Another factor that contributed to the Scope 1 & 2 GHG emissions reduction was a significant increase in renewable energy credits (RECs) purchased to meet the Clean Energy goal.

In FY 2016, HHS Scope 3 GHG emissions were 22.7% below the FY 2008 baseline and on track to meet the FY 2025 goal of 25.4%. FY 2016 Scope 3 GHG emissions increased slightly over FY 2015, due to an increase in air travel. Employee commuting GHG emissions decreased by 5% as compared to the previous year mainly due to an increase in the number of employees teleworking as well as those using mass transit for commuting.

CDC Transportation Services Office (TSO) managed the rollout of the HHS Go!Card® Program for disbursement of Federal transportation subsidies. Since the rollout in October 2016, CDC has seen a 24% increase in employees taking an alternate, greener form of commute to work. As a result of these efforts and updates to telework policies and training modules, CDC has consistently reduced commuter related Scope 3 GHG emissions.

At FDA's White Oak Campus in Silver Spring, Maryland the FDA has 146 active vanpools, with two more in the beginning stages of development with an average participation rate of seven members each. This is an increase of 42 vanpools from last year's report. Additionally, at the White Oak Campus there are approximately 230 formal carpools with at least two members each. That's an increase of 41 from last year's report.

Goal 2 – Sustainable Buildings

In FY 2016, HHS energy intensity was 6.5% below the FY 2015 baseline year, meeting the 2.5% reduction target for FY 2016. As noted above, the most significant reductions were at FDA, IHS and NIH. The FDA Muirkirk Road Complex, the FDA Jefferson Labs Complex and NIH exhibited the greatest reductions primarily in natural gas and steam due to mild winter temperatures and efficiency measures. IHS transfer of several hospitals to tribal operation decreased their facilities square footage, including the Alaska Native Medical Center which was very energy intensive due to geographical location. IHS will continue to fund projects that implement energy and water conservation measures recommended in their Sustainability Audit Reports.

In FY 2016, NIH's Bethesda Campus Central Utility Plant reduced electricity and natural gas or fuel consumption from its operations by completing several major projects, including repair to a chiller steam turbine to use excess steam to power the chiller, enhancements to the boiler feed water system,

upgrades to chiller free cooling systems, and improvements to the main chilled water system to increase efficiency.

In FY 2016, CDC and IHS increased their percentage of buildings that are compliant with the Guiding Principles. This was accomplished through a combination of new construction and renovations to existing buildings. In June 2016, the Centers for Medicare and Medicaid Services (CMS) headquarters building received Leadership in Energy and Environmental Design (LEED) Gold Certification for existing buildings.

The IHS Environmental Steering Committee awarded over \$1.4 million in energy and sustainability projects in FY 2016.

Goal 3 - Clean and Renewable Energy

HHS met the clean and renewable energy FY 2016 targets of 10%, with percentages of 22.2% and 24.1%, respectively. HHS increased the amount of renewable energy credits (RECs) purchased to meet the clean energy goal. HHS has also been working toward the installation of renewable energy projects on-site, with several projects installed and placed on-line in FY 2016. Others have been awarded in performance contracts or are being analyzed for feasible installation in out-years.

In April 2016, CDC completed installation and energized a 9-kW canopy photovoltaic (PV) array at the Roybal Campus Visitors Center (Building 45) in Atlanta, GA. This was a successful pilot project to kick off onsite generation efforts to meet renewable and clean energy requirements of E.O. 13693. Also in FY 2016, CDC awarded an energy savings performance contract and a utility energy services contract that include three substantial Solar PV energy conservation measures (ECMs) and a small electric vehicle charging station canopy powered by a solar PV array.

Hubert H. Humphrey (HHH) Building management is partnering with GSA to install a PV system on the roof of the HHH Building as part of the Capital Solar Challenge Initiative.

In FY 2016, IHS installed or is in the process of design and construction of seven renewable energy projects. These include PV arrays, solar thermal collectors, solar heated domestic hot water, wind-to-heat system, and purchase of excess hydroelectric energy from the local utility.

Goal 4 – Water Use Efficiency and Management

In FY 2016, HHS water use intensity was 58.3 gallons per square foot (gal/SF) as compared to the FY 2007 baseline of 64.4 gal/SF - a 9.5% reduction. NIH, IHS and PSC experienced increases in FY 2016. NIH had a small intensity increase but because it constitutes the bulk of HHS water use, it had a larger effect on the HHS water intensity totals. IHS reported an intensity increase due to the decrease in square footage from sites transferring to tribal operations. PSC also reported an intensity increase due to the large increase in building occupants due to consolidated office space.

HHS has placed particular emphasis on water efficiency over the past few years as we try to obtain accurate consumption data, identify areas of high usage and waste, and control overall usage. HHS has a large amount of laboratory and vivarium space, which are water-intensive facilities. In addition, much of the research performed requires water in the procedures. It is not uncommon for facilities to change the type of research or analytical testing performed, or the frequency of performance, resulting in changes to the amount of water used in that facility.

In FY 2016, the CDC water intensity reduction of 12.7% (as compared to FY 2015) can be attributed to several factors such as close monitoring of building level and site meter readings from the building automation and the WaterSignal systems; repair of heating, ventilating and air-conditioning process water leaks; and detection and repair of multiple steam leaks.

Goal 5 – Fleet Management

In FY 2016, HHS use of alternative fuel equaled 2.3% of total fleet fuel use. HHS has increased its alternative fuel use by 266.3% since FY 2005. HHS consistently strives to achieve reduction in fuel use each year by decreasing the number of total vehicles in the motor pool, properly distributing newly acquired alternative fuel vehicles and encouraging ridesharing for employees who utilize fleet resources.

HHS has been working to replace high-usage motor pool vehicles with hybrids and alternative fuel vehicles in order to achieve the reduction in fleet petroleum use outlined in E.O. 13693. Total fleet fuel consumption (gasoline and alternative) decreased slightly from FY2015 to FY 2016, with HHS consuming 1,786,633 gallons during the current year as compared to 1,842,077 gallons in FY 2015. HHS's most efficient vehicles are serve offices that more heavily utilize fleet automobiles. Additionally, HHS continues its "right-sizing" initiative to ensure that the Agency is utilizing resources as efficiently as possible and thus reducing its environmental footprint. As a result of this effort, as well as smart trip planning, HHS has continuously reduced its total miles operated each year.

Goal 6 – Sustainable Acquisitions

In accordance with the Federal Acquisition Regulation (FAR) Part 23 (95%) goal, HHS has achieved 95.7% compliance of new contract actions including applicable sustainability requirements. In FY 2017 and FY 2018, HHS will continue outreach and verification efforts in order to maintain the goal of 95%.

HHS participates on the Federal Sustainable Acquisition and Materials Management (SAMM) Working Group and continues to engage GSA and other Federal partners on healthy/green procurement initiatives. In doing so, best practices and lessons learned are gathered and then passed along to the Divisions through the HHS's Sustainable Green Acquisition Workgroup email distribution.

To support sustainable acquisition, HHS issued guidance through the HHS Acquisition Regulations (HHSAR) to the acquisition workforce that emphasizes the inclusion of biobased products and all applicable FAR sustainability clauses in construction and other relevant service contracts. HHS provided the acquisition workforce with sustainable acquisition training, focusing on biobased products, further supporting the inclusion of sustainability requirements in applicable contracts

For FY 2018, HHS plans to achieve 100% compliance across all quarters of contracts reviewed. HHS also plans to fully utilize the sustainable facilities tools by asking OPDIVs to go to SFTools.gov more frequently to further ensure proper clauses and language are inserted in the contracts, and explore other sustainable software platform options. In order to meet FY 2018 biobased contracting targets, more biobased contracts will be awarded across the entire biobased spectrum of attributes.

Goal 7 – Pollution Prevention and Waste Reduction

In FY 2016, the HHS non-hazardous solid waste diversion was 30.3% of the total waste stream, with 10.1% converted to energy recovery. HHS continues to advance toward the 50% diversion goal in Waste Reduction and Pollution Prevention as evidenced by the following representative efforts:

- CDC has intensified collaboration between its Engineering, Maintenance, and Operations Services Office (EMOSO) and its Office of the Associate Director for Laboratory Science and Safety to improve laboratory worker training, management of chemical stocks and waste materials, and implementation of waste reductions for its many laboratories. In the same manner, EMOSO is closely working with the Real Property and Space Management staff to improve oversight of its recycling efforts in leased space and enhance its data collection.
- IHS has issued a technical bulletin and conducted training regarding the inclusion of specifications in the scopes of work for basic maintenance and construction projects that require the diversion of construction and demolition debris from landfills and the collection of data on those diversions.
- FDA has reassigned its Employee Safety and Environmental Management Office to the Office of Laboratory Safety and Science, which directly reports to the FDA Commissioner, with the goal of centralizing safety and environmental compliance for all of FDA.
- NIH continues to expand and enhance its extensive waste management programs which include construction and demolition debris outreach to construction Project Managers, outreach and training for Universal Wastes management, a pilot recovery program for soft plastic/film sheets, pre-consumer cafeteria composting, Styrofoam collection and reuse, Mercury Amnesty collection events, a Surplus Chemical Redistribution Program, a Solvent Recovery Program, and myriad similar activities. These activities, in concert with its Environmental Audit Program and Environmental Management System, combine to form a dynamic, comprehensive, and ever-improving pollution prevention and waste reduction program.
- In FY 2016 CMS achieved a total recycling rate of 56.50% and a total of 83.50% diversion away from landfills including waste to energy burning and recycling.

Goal 8 – Performance Contracting

HHS met the 2016 performance contracting target of \$92.6 million (M) with a total of \$102.2M awarded by the end of 2016, which was 13% more than the commitment. Another \$22.4M of contracts are in the pipeline. In 2016 alone, HHS awarded \$32M in performance contracts through NIH, CDC and FDA. Performance contract commitments in FY 2018 and FY 2019 are significantly less, as OPDIVs complete the construction of the contract ECMs.

HHS performance contracting targets for the next two fiscal years are:

FY 2018: \$2.3 million FY 2019: \$9.3 million

These targets are based upon the 2017 project threshold and will be adjusted upon completion of current projects and availability of future funding. IHS is piloting a \$4.5 million performance contract at Phoenix Indian Medical Center to encourage other IHS facilities to consider performance contracting. NIH is planning a \$7M performance contract to correct thermal bridges, which allow heat flow through walls, roofs and other insulated building envelope components, in approximately 20 buildings.

Goal 9 – Electronic Stewardship and Data Centers

HHS is on track with both procurement and end-of-life goals. The Department reached the FY 2016 goal of 100% of electronics with power management features enabled; an improvement from the FY 2015 achievement of 97.8%. HHS also reported 100% compliance with end-of-life goals. Electronic Product

Environmental Assessment Tool (EPEAT) procurement compliance improved from 95.6% in FY 2015 to 98.9% in FY 2016.

HHS's existing data centers meet the stated goal for power usage effectiveness (PUE). The current rating is 1.5 for its existing data centers and there are no new data centers planned. HHS is working to consolidate its data centers, especially non-tiered ones, to make more efficient use of its facilities.

Goal 10 – Climate Change Resilience

As required by the E.O. 13693, HHS strives to incorporate climate adaptation and resilience solutions into the design of their facilities through master planning. In mission-related programs, HHS Divisions continue to develop and implement programs to address the health impacts of climate change on a national, regional and community scale.

The CDC National Center for Environmental Health (NCEH) developed the *Building Resilience Against Climate Effects* (BRACE) framework that helps health officials develop strategies and programs to help communities prepare for the health impacts of climate change. This effort includes incorporating complex atmospheric data and short and long-range climate projections into public health planning and response activities to allow health officials to more effectively anticipate, prepare for, and respond to a range of climate sensitive health impacts.

FDA is incorporating climate-resilient design and management elements in the design of the JLC \$30 million renovation to Building 14 and 53A and the Winchester Engineering Analytical Center (WEAC) new 75,000 square foot laboratory. Both projects are being designed and constructed to achieve a LEED® Silver rating.

IHS incorporates climate change resiliency design elements into new construction and major renovation projects. The Site Selection Evaluation Process in the Office of Environmental Health and Engineering (OEHE) Architect/Engineering Design Guide considers the impact the facility will have on the environment, and the impacts the environment will have on the structures and occupants. The IHS also considers the potential impact on the social environment, including the local population and existing infrastructure. Healthcare facilities actively coordinate and cooperate with the local agencies and multiple entities to prepare for climate, and other events.

NIH continues to take climate change resilience actions to prepare for potential changes that could negatively impact operations and the research community. NIH continues to promote global health and encourage preparations for extreme weather events induced by climate change as exhibited in the following accomplishments:

- NIH has supported the maintenance and expansion of the health sections of the US Climate Resilience Toolkit at <u>https://toolkit.climate.gov/</u>, and continues to partner with the healthcare sector in evaluating and refining risk management guidance for healthcare facilities.
- Construction is underway for water storage to support the Bethesda campus in the event of a temporary water supply loss;
- Construction is underway for a chilled water storage system, reducing the number of chillers;
- Improved management techniques are being utilized, using scales to weigh refrigerants in the CUP and maintain detailed logs of usage and loss; and
- Climate Resilience Plan for Research Triangle Park is complete.
- Climate Resilience Plan for the Bethesda Campus is in progress.

Progress on Administration Priorities

Performance Contracting Challenge

As noted above, HHS met the 2016 performance contracting target of \$92.6 million (M) with a total of \$102.2M awarded by the end of 2016, which was 13% more than the commitment. Another \$22.4M of contracts are in the pipeline. In 2016 alone, HHS awarded \$32M in performance contracts through NIH, CDC and FDA. Performance contract commitments in FY 2018 and FY 2019 are significantly less, as OPDIVs complete the construction of the contract ECMs.

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Performance contracts have enabled HHS to implement a wide array of energy and water efficiency projects that would not have otherwise been installed. The contracting vehicle has provided the agency with a means to upgrade facilities and infrastructure to include energy and water efficiency technologies.

Electric and Zero-Emission Vehicles

HHS had no additional funding to purchase zero-emission vehicles (ZEV) in FY 2016, but will be replacing several existing GSA leased fleet vehicles with ZEV and hybrid electric models. HHS will continue to install plug-in charging stations throughout our facilities, based upon HHS fleet vehicle replacements. CDC will install four electric charging stations in FY 2017. CDC initiated a program to replace 18 GSA gasoline vehicles with 8 electric golf carts in FY 2016. The program will be completed in FY 2018.

HHS' federal employee workplace electric vehicle (EV) charging program will support and contribute to reducing greenhouse gas emission produced by HHS outlined in the 2016 Strategic Sustainability Performance Plan (SSPP), in accordance with H.R. 22, the "Fixing America's Surface Transportation Act (FAST Act)."

OPDIVs have been active in implementing pilot programs to better understand the potential of EV charging stations on HHS campuses. CDC has drafted an employee electric vehicle charging implementation strategy along with running a pilot program to test the policy's effectiveness.

HHS sustainability team leaders are working together to establish electric vehicle charging station policies. Our interagency logistic meetings will develop:

- A survey to gauge HHS employee electric vehicle charging station needs.
- A framework that will allow HHS to recover the costs of installing EV charging stations.
- A methodology and cost-benefit analysis for unmetered locations.

OPDIV parking personnel will implement federal employee workplace EV charging guidelines, coordinated with their sustainability outreach groups.

Climate Preparedness and Resilience

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Size & Scope of Agency Operations

Agency Size and Scope	FY 2015	FY 2016
Total Number of Employees as Reported in the President's Budget	78,515	77,470
Total Acres of Land Managed	5,914	5,826
Total Number of Buildings Owned	2,718	2,611
Total Number of Buildings Leased (GSA and Non-GSA Lease)	1,010	955
Total Building Gross Square Feet (GSF)	54,962,232	54,867,065
Operates in Number of Locations Throughout U.S.	955	964
Operates in Number of Locations Outside of U.S.	14	13
Total Number of Fleet Vehicles Owned	814	1,122
Total Number of Fleet Vehicles Leased	3,856	4,354
Total Number of Exempted-Fleet Vehicles (Tactical, Law Enforcement, Emergency, Etc.)	1,149	784
Total Amount Contracts Awarded as Reported in FPDS (\$Millions)	21,400	24,083

Agency Progress and Strategies to Meet Federal Sustainability Goals

This section provides an overview of progress through FY 2016 as reported through the OMB Scorecard on sustainability/energy goals and agency strategies to implement E.O. 13693.

Goal 1: Greenhouse Gas (GHG) Reduction

Scope 1 & 2 GHG Reduction Goal

E.O. 13693 requires establishment of a Scope 1 & 2 GHG emissions reduction target to be achieved by FY 2025 compared to a 2008 baseline. HHS's 2025 Scope 1 & 2 GHG reduction target is 38.7%.



Chart: Progress Toward Scope 1 & 2 GHG Reduction Goal

FY 2016 HHS Scope 1 and 2 GHG emissions were 22.5% less than FY 2015 and 40.8% less than the FY 2008 baseline year, exceeding the FY 2025 target of 38.7%. The primary cause was the FY 2016 energy use intensity 6.5% below FY 2015. The FDA Muirkirk Road Complex, the FDA Jefferson Labs Complex and NIH exhibited the greatest reductions primarily in natural gas and steam due to mild winter temperatures. IHS transferred several hospitals to tribal operation thereby decreased reporting facilities square footage; including the Alaska Native Medical Center which was very energy intensive due to geographical location. Another factor that contributed to the Scope 1 & 2 GHG emissions reduction was a significant increase in REC purchases to meet the Clean Energy goal.

Strategy	Strategy Narrative	Targets and Metrics
Use the Federal Energy Management Program (FEMP) GHG emission report to identify/target high emission categories and implement specific actions to address high emission areas identified.	The OPDIVs' goal managers and sustainability offices review the OPDIV FEMP Workbook (WB) tabs to monitor progress in each GHG related target and their contributing factors. Priorities are established by the highest contributing sources.	 CDC monitors Scope 1&2 GHG reduction through the GHG WB and tracks the impact of ongoing performance contract measures on reductions. FDA GHG line item summary will be developed and shared with field energy managers, annually. NIH will reduce electricity by further implementing Ultra Low Temperature (ULT) Freezer policy to support compliance with new selection requirements and preventative maintenance on ULT Freezers. NIH will commission Chiller 21 and 23 steam turbines, adding two steam-operate chillers. NIH will install side stream filtration for Cooling Towers 16, 17, 18, and 19. OS energy projects outlined in Goal 2 address the high emissions of electricity and steam use. 5600 Fishers Lane facility management will refine operations to reflect full occupancy and continue to deploy internal analyses to ensure peak operations.
Identify and support management practices or training programs that encourage employee engagement in addressing GHG reduction.	OPDIVs encourage staff to pursue training and accreditations related to energy conservation and GHG reduction. Additionally, environmental staff, operational offices and general employees will be encouraged to participate in efforts to reduce GHG emissions.	 Ongoing efforts by staff to attend in-person and webinar training continue. CDC asset management and information technology staff participate regularly in GSA's DCIO Energy work group. HHS OPDIVs will hold Earth Day, America Recycles Day, and other expos to raise awareness, annually. By mid FY 2018, FDA will develop outreach materials such as posters, tent cards, newsletter articles, Power Points, and manager messages for employees. A presentation soliciting GHG reduction initiatives will be given to the NIH Office of Research Services/Office of Research Facilities Green Team. Quarterly employee awareness presentations are shown outside of the HHS Headquarters building cafeteria. PSC continues to remove unauthorized electrical devices and keep fan coil units clear for operational efficiency.

Scope 1 & 2 GHG Reduction Strategies for Fiscal Year 2018

Determine unsuccessful programs or measures to be discontinued to better allocate agency resources.	OPDIVs evaluate their programs and projects to ensure resource is allocated to meet its mission and sustainability goals.	 In FY 2017, CDC terminated a green power purchase in Ft. Collins Colorado after determining that the utilities' rate structure was non-competitive with the market. In FY 2016, IHS eliminated reporting for buildings not part of a covered facility, under 5,000 SF, because the cost of monitoring greatly outweighed potential savings. NIH will work with energy managers and central utility plant personnel to review and evaluate efficacy of initiatives for metered data collection. Due to lack of staff in OPDIVs, some measures, such as expos or outreach events, high analysis frequency of trend data, have been discontinued, and the speed of implementation of projects has decreased.
Employ operations and management (O&M) best practices for emission generating and energy consuming equipment.	HHS facility management and engineering staff at all HHS locations continuously assesses O&M practices for increased efficiency and savings.	 In FY 2017 and FY 2018, an ongoing project is improving CDC's Integrated Facilities Maintenance System, resulting in revised preventive maintenance procedures, additional equipment barcoding, and more detailed corrective action/close out descriptions. FDA facility managers continuously work closely with O&M contractors to improve operations and efficiency. FDA's FY 2017 and FY 2018UESC energy conservation measures at MRC, Irvine and Gulf Coast Seafood Laboratory include building automation system upgrades or retro-commissioning. FDA's JLC will continue to fine-tune BAS operations in FY 2017 and FY 2018, including a program to calibrate all BAS monitoring points throughout the campus. NIH CUP personnel implemented a computer monitoring maintenance information system. Information will be reviewed to evaluate opportunities for improvement. HIHH's O&M contractor will submit a quarterly report evaluating operations and efficiency projects. In 2017 and 2018, PSC will implement an initiative to reduce nighttime base electrical load in the building, reducing external nighttime lighting, and validating temperature set points.

Scope 3 GHG Reduction Goal

E.O. 13693 requires each agency to establish a Scope 3 GHG emission reduction target to be achieved by FY 2025 compared to a 2008 baseline. The HHS 2025 Scope 3 GHG reduction target is 25.4%.



Chart: Progress Toward Scope 3 GHG Reduction Goal

HHS FY 2016 Scope 3 GHG emissions were 22.7% below the FY 2008 baseline and on track to meet the FY 2025 goal of 25.4%. FY 2016 Scope 3 GHG emissions increased slightly over FY 2015, due to an increase in air travel. Employee commuting GHG emissions decreased by 5% compared to the previous year, due to an increase in the number of employees teleworking or commuting on mass transit.

CDC Transportation Services Office (TSO) managed the roll out of the HHS Go!Card® Program for disbursement of Federal transportation subsidies. Since the roll out in October 2016, CDC has seen a 24% increase in employees taking an alternate, green form of commute to work. As a result of these efforts, and due to updates to telework policies and training modules, CDC has consistently reduced commuter related Scope 3 GHG emissions.

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Scope 3 GHG Reduction Strateg	ies for Fiscal Year 2018
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Strategy	Strategy Narrative	Targets and Metrics
Reduce employee business ground and business air travel.	HHS OPDIVs continuously work to identify methods for reducing business ground and air travel.	 HHS will analyze air emission data with the travel office to determine the largest contributing offices in FY 2017. HHS will work with managers to raise awareness of air travel GHG emissions in FY 2018. FDA's Office of Budget, Division of Budget Execution and Control holds a monthly meeting with all center and office budget officers to review funding status. For FY 2017, FDA Centers and Offices are planning their fiscal year obligations and where possible, reducing or eliminating travel.
Develop and deploy an employee commuter emissions reduction plan.	HHS OPDIVs have an employee commuter emissions reduction plan that centers on maximizing telework, green commuting, and IT infrastructure to teleconference.	 CDC Transportation services works to increase CDC employee participation in green commuting solutions. The FDA Transportation Management Plan is being reviewed and updated in 2017 for submission with a new Master Plan. NIH will revise the existing commuter emissions reduction plans and finalize an updated plan in 2017. OS will continue outreach efforts to promote telework and public transportation to and from the HHH Building throughout FY 2017 and FY 2018.
Use an employee commuting survey to identify opportunities and strategies for reducing commuter emissions.	HHS deployed the 2016 GSA Carbon Footprint Commuter Survey to obtain commuting data from the OPDIVs. In addition, OPDIVs use additional commuter surveys to obtain information on employee commuting.	 A CDC commuter survey instrument will be updated and released in FY 2017. Data will be compared to FY 2016, analyzed and applied to commuter support decisions. In addition to the Montgomery County Commuter Survey, FDA plans additional surveys with the updating of the Transportation Management Plan. NIH will reevaluate and update survey forms and continue to promote low-emission commuting alternatives through surveys and targeted outreach events in FY 2017.

number of	HHS OPDIVs work to promote existing telework programs.	 CDC intends to expand education and resources dedicated to teleworking to increase percentages of teleworking employees. FDA plans to improve and update the New Employee Orientation Telework information to ensure what's communicated is more than a one-line announcement. Will ensure the new information communicated the salient points about the agencies incentivized program to include the current program Intranet page and POCs. IHS will continue to promote the use of telework as an efficient and effective means of performing work. This will include providing support and education. IHS will strive to increase telework participation by 10%. NIH will analyze Time and Attendance data to determine the current telework percentages. This data will be analyzed to identify opportunities for additional telework.
implement a program to support alternative/zero emissions commuting methods	HHS OPDIVs support alternative/zero emissions commuting by promoting electric vehicles (EV), developing an EV charging infrastructure and fostering bicycle commuting.	 CDC installs new, networked Level II EV chargers to complement existing chargers, on federally owned Metro Atlanta campuses. Facilities for EV and AFV parking and charging are included in base planning. FDA has EV charging stations installations underway since early 2017 and to be completed by late 2017. NIH will continue to advertise the bike commuter program by supporting the FY 2017 bike to work day and survey employees to identify opportunities to increase the bike commuter program. NIH will review charging station data and seek opportunities to expand this program to align with employee interest level. OS will meet with potential charging station vendor to determine feasibility of installing employee charging station by the end of FY 2017. CMS has 4 government car chargers (installed in 2012). CMS performed a survey to solicit employee interest in using these chargers and is developing policies and procedures to govern employee use.

Goal 2: Sustainable Buildings

Building Energy Conservation Goal

The Energy Independence and Security Act of 2007 (EISA) required each agency to reduce energy intensity 30% by FY 2015 as compared to FY 2003 baseline. Section 3(a) of E.O. 13693 requires agencies to promote building energy conservation, efficiency, and management and reduce building energy intensity by 2.5% annually through the end of FY 2025, relative to a FY 2015 baseline and taking into account agency progress to date, except where revised pursuant to Section 9(f) of E.O. 13693.



Chart: Progress Toward Facility Energy Intensity Reduction Goal

In FY 2016, the HHS energy intensity was 6.5% below the FY 2015 baseline year, meeting the target for FY 2016 of a 2.5% reduction. The most significant reductions were seen at FDA, IHS and NIH. The FDA Muirkirk Road Complex (MRC), the FDA Jefferson Labs Complex (JLC) and NIH exhibited the greatest reductions primarily in natural gas and steam due to mild winter temperatures and efficiency measures. IHS had several hospitals transfer to tribal operation and therefore decreased reporting facilities square footage including the Alaska Native Medical Center which was very energy intensive due to geographical location. IHS has also awarded over \$1.4 million in energy and sustainability projects in FY 2016, and will continue to fund those that implement energy and water conservation measures recommended in the Sustainability Audit Reports as deemed appropriate.

The NIH Bethesda Campus Central Utility Plant (CUP) focused on reducing electricity and natural gas or fuel consumption from its operations by completing the following projects:

- Chiller 22 steam turbine was repaired to allow the CUP to run the Chiller 22 compressor using excess steam that would otherwise be vented as opposed to electricity.
- Reverse osmosis system was repaired to reduce the total dissolved solids (TDS) in boiler feed water, in turn decreasing boiler blowdown and minimizing natural gas or fuel oil consumed to generate steam.
- CUP water softeners were replaced which minimizes hardness events and increases boiler reliability and efficiency to generate steam.
- Heat exchangers on the free cooling system for chillers 22 and 23 were repaired to reduce electricity consumption.
- A side stream filter was installed for main chilled water system that removes TDS which can reduce the heat transfer efficiency in chillers and facility fan coil units. As a result, the overall energy required to cool buildings was reduced.

Strategy	Strategy Narrative	Targets and Metrics
Make energy efficiency investments in agency buildings.	HHS OPDIVs will invest in energy efficiency projects and technologies through direct agency funding, performance contracting, and new construction.	 CDC will focus on performance contracting projects in upcoming year. IHS will ensure the new designs for Rapid City Health Center, PIMC Northeast, Dilkon, and Northern California YRTC facilities included energy efficiency. In FY 2017/2018, NIH will reduce electricity by further implementing ULT Freezer policy to support compliance with new selection requirements and preventative maintenance on ULT Freezers. In FY 2017/2018, NIH will commission Chiller 21 and 23 steam turbine, which will allow two more chillers to operate on steam. NIH will install side stream filtration for Cooling Towers 16, 17, 18, and 19. In FY 2017, NIH will survey at least 10% of existing buildings for energy and water improvement projects and continue to identify chilled water losses requiring corrective action. Pending funding, T8 fluorescent light bulbs will be replaced with LED bulbs in the HHH Building. Pending final GSA analysis, the HHH Building HVAC constant volume system will be converted to a variable volume system. OS will continue analysis and negotiation of installing dedicated boilers for the HHH Building and removing the building from the GSA district steam system.

Building Energy Conservation Strategies for Fiscal Year 2018

Use remote building energy performance assessment auditing technology	HHS OPDIVs use building automated systems (BAS) to monitor and assess energy consumption trends to make adjustments that provide more energy efficient operations while still meeting the building or function specific operation requirements.	 IHS is evaluating the viability of 3rd party services to streamline the upload of utility data from utility providers to PM. NIH will investigate remote building monitoring for all sites in FY 2017 and FY 2018. OS facility management will contact remote auditing vendors in FY 2017 to determine the cost and ability to perform an audit on one bldg.
Participate in demand management programs.	HHS OPDIVs continuously evaluate sites and their specific mission to determine if demand management programs are applicable.	 CDC will continue with "setback" program of the one building in 2016 and more will be added in 2017. PSC uses this strategy and will continue with the electric load demand program. PSC is actively working to encourage new occupants to conserve to the optimal amount during these events.
Redesign interior space to reduce energy use through daylighting, space optimization, and sensors and control systems.	HHS OPDIVs continuously investigate the redesign of interior spaces for energy savings through performance contracting, facility upgrades, and renovations.	 CDC will use ECMs to bring existing facilities closer to achieving Guiding Principles (GP) compliance. IHS will incorporate energy efficiency into renovation projects to the greatest extent possible. OS facility management will develop a checklist by the end of FY 2017 of energy efficiency best practices to follow when redesigning interior space. PSC will continue to fine tune both lighting sensor operations and HVAC control systems for optimal performance. More light sensors will either be relocated or added for proper coverage.
Install and monitor energy meters and sub-meters.	Per the HHS OPDIV metering plans updated in FY 2016, the installation, upgrade and monitoring of energy meters continues to be a strategy.	 CDC will be analyzing the first full year of compiled data from the first installed energy conservation measures (ECMs). Metering strategies are part of the design for Rapid City Health Center, Northern California YRTC, PIMC NE, and Dilkon planned for 2017/2018. Meters are being replaced at many IHS existing buildings as appropriate, pending funding availability. OS facility management and the O&M contractor continuously assess the need and economic feasibility of installing sub-meters in the bldg. PSC facility management will monitor new submeters in the 5600 Fishers Lane Building to ensure accuracy and monitor usage.

Collect and utilize building and facility energy use data to improve building energy management and performance.	HHS OPDIVs continue initiatives identifying energy loss and taking corrective measures. Facilities management staff are further enhancing building data review for performance improvement.	 CDC will use data collected via EISA required reports and other audits to prioritize projects that bring existing facilities closer to achieving GP compliance. NIH will continue use of Green Buildings Action Team and Sustainability Management Team to identify energy improvement actions and to implement proactive programs like the Chilled Water Loss Investigation Team HHH Building O&M contractor will submit quarterly reports summarizes energy use and monitor energy use daily and weekly to prevent spikes in energy use. PSC will track all energy and water usage and make operational changes when opportunities for saving are realized.
Ensure that monthly performance data is entered into the EPA ENERGY STAR Portfolio Manager.	HHS OPDIVs are working to ensure all monthly building data is input into Portfolio Manager (PM) on a regular basis.	 CDC has developed a plan to implement monthly data into PM. Training modules have been developed for IHS facility and energy managers to improve data quality in PM. NIH plans to enhance energy data capture in PM by adding all NIH buildings on a quarterly basis. PSC will ensure the 5600 Fishers Lane building owner and their subcontractor are provided copies of utility bills so they can enter this information into PM.

Building Efficiency, Performance, and Management Goal

Section 3(h) of E.O. 13693 states that agencies will improve building efficiency, performance, and management and requires that agencies identify 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 FY 2025 and implementing actions that will allow those buildings to meet that target. The HHS 2025 target is 7.4% and is detailed as follows:

- Centers for Disease Control and Prevention (CDC) one net-zero building by 2025.
- Food and Drug Administration (FDA) 2% of stand-alone administrative buildings above 5,000 GSF by 2025.
- Indian Health Service (IHS) 0% net-zero buildings by 2025.
- National Institutes of Health (NIH) 20% net-zero of NIH buildings above 5,000 GSF by 2025.

Guiding Principles for Sustainable Federal Buildings

Section 3(h) of E.O. 13693 also states that agencies will identify a percentage, by number or total GSF, of existing buildings above 5,000 GSF that will comply with the *Guiding Principles for Sustainable Federal Buildings (Guiding Principles)* by FY 2025.

The HHS FY 2025 target is 15% of total GSF.



Chart: Percent of Buildings Meeting the Guiding Principles

In FY 2016, CDC and IHS increased their percentage of buildings that are compliant with the Guiding Principles. This was accomplished through a combination of new construction and renovations to existing buildings.

The IHS Environmental Steering Committee awarded over \$1.4 million in energy and sustainability projects in FY 2016, and will continue to fund those that implement energy and water conservation measures recommended in the Sustainability Audit Reports as deemed appropriate. Examples include:

- Energy audits (four)
- Sustainability audits (two)
- LED lighting retrofits (four)
- Building recommissioning (three)
- Xeriscaping water efficiency project (one)

In June 2016, the Centers for Medicare and Medicaid Services (CMS) headquarters building received LEED Gold Certification for existing buildings.

Sustainable Buildings Strategies for Fiscal Year 2018

Strategy	Strategy Narrative	Targets and Metrics
Include climate resilient design and management into the operation, repair, and renovation of existing agency buildings and the design of new buildings.	OPDIV design and construction guidelines include climate resiliency and Guiding Principles standards. OPDIV facility management ensure operations maximize efficiency reducing the use of fossil fuels.	 NIH will review and update Climate Change Resilience Plans. FDA will install PV systems as part of a utility energy services contract (UESC). OS will perform an assessment of headquarters by the end of FY 2017. PSC will review Facility Program Manual to ensure alignment.
In planning new facilities or leases, include cost- effective strategies to optimize sustainable space utilization and consideration of existing community transportation planning and infrastructure, including access to public transit.	OPDIVs make sustainable building design principles, the Guiding Principles, LEED, sustainable transportation, and space utilization is a priority.	 OPDIVs will continue to use LEED as a guideline for new designs. FDA will co-locate researchers in flexible laboratory space in major renovation projects. IHS will revise the site selection process to consider public transit.
Ensure all new construction of Federal buildings greater than 5,000 GSF that enters the planning process be designed to achieve energy net-zero and, where feasible, water or waste net- zero by FY 2030.	OPDIVs are beginning to implement programs and guidance for net-zero designs.	 CDC will use a UESC funded PV project for first energy net zero facility in 2017. NIH will include net-zero in facility Master Plans.
Incorporate green building specifications into all new construction, modernization, and major renovation projects.	These items are embedded in design and construction standards, which require certification and compliance with <i>Guiding Principles</i> in all new construction projects.	• Ongoing for all OPDIVs.
Implement space utilization and optimization practices and policies.	All HHS new facilities or leases have a maximum of 170 USF per person. IHS uses Health Systems Planning software to optimally allocate healthcare space.	• Ongoing in all OPDIVs.

Implement programs on occupant health and well- being in accordance with the <i>Guiding Principles</i> .	OPDIV facility and sustainability management work together to implement occupant health and well- being programs. OPDIVs continue the development of research into healthy buildings with the goal of establishing programs to implement appropriate health and well-being initiatives.	 CDC has incorporated the FitWel program at the Atlanta campuses. FDA will analyze the utilization of the FitWel program for FDA buildings. PSC continues to encourage use of stairs over elevators and use of natural daylight over electrical fluorescent lighting. IHS will develop and distribute flyers to promote healthy and sustainable principles in Indian Country. OS will consider FitWel to determine application to headquarters building. Considering implementation of additional occupant health programs.
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Goal 3: Clean & Renewable Energy

Clean Energy Goal

E.O. 13693 Section 3(b) requires that, at a minimum, the percentage of an agency's total electric and thermal energy accounted for by clean energy (i.e., renewable and alternative energy) shall be not less than: 10% in FY 2016-17; 13% in FY 2018-19; 16% in FY 2020-21; 20% in FY 2022-23; and 25% by FY 2025.

Chart: Use of Clean Energy as a Percentage of Total Electric Energy and Thermal Energy



HHS Clean Energy Use as a Percentage of Facility Energy Consumption

Renewable Electric Energy Goal

E.O. 13693 Section 3(c) requires that renewable energy account for not less than 10% of total electric energy consumed by an agency in FY 2016-17; 15% in FY 2018-19; 20% in FY 2020-21; 25% in FY 2022-23; and 30% by 2025.

Chart: Use of Renewable Energy as a Percentage of Total Electric Energy



HHS Renewable Electricity Use as a Percentage of Facility Electricity Consumption

HHS met the clean energy and renewable electricity FY 2016 targets of 10%, with percentages of 22.2% and 24.1%, respectively. In FY 2016, HHS increased the amount of renewable energy credits (RECs) purchased to meet the clean energy goal. HHS has also been working toward the installation of renewable energy projects on-site, with several projects installed and placed on-line in FY 2016, and others awarded in performance contracts or are being analyzed for installation in out-years.

In April 2016, CDC completed installation and energized a 9-kiloWatt (kW) canopy photovoltaic (PV) array at the Roybal campus Visitors Center (Building 45) in Atlanta, GA. This pilot project kicked-off onsite generation efforts to meet renewable and clean energy requirements of E.O. 13693.

A September 2016 project includes a 7-kW electric vehicle charging station canopy solar PV array.

The CDC 2016 UESC, awarded in November 2016, includes three substantial Solar PV ECMs:

- 1. Roybal Campus Building 19: ECM 11.02 Photovoltaic (90-kW Roof-top)
- 2. Chamblee Campus Building 106: ECM 11.02 Photovoltaic (100-kW Roof-top)
- 3. Lawrenceville Campus Site: ECM 11.02 Photovoltaic (249-kW Ground Mount)

The Office of the Secretary is partnering with GSA to install a PV system on the HHH Building roof as part of the Capital Solar Challenge Initiative. The system will be installed and maintained by a utility contractor. HHS will buy the energy at a rate cheaper than the local utility. GSA has awarded the contract, but it will not be completed until a new roof is installed. The PV array will cover approximately 90 percent of the roof surface and will be tied into the main switchgear so that excess power can be used elsewhere in the building. 20 additional panels will be added to the project after removal of the existing solar thermal system.

In FY 2016, IHS placed two new facilities with renewable electricity integrated in the initial construction into service. Those sites, the Kayenta Health Center and Southern California Youth Treatment Center, have a potential of 100-kW and 37,000 kW per year respectively. A new facility at Fort Yuma will include 319-kW renewable electricity that is projected to provide 466,665 kWh per year.

IHS is installing solar hot water heating systems on new facilities. The first facility will be the Fort Yuma Health Center in Winterhaven, CA. which utilizes roof mounted solar collectors to harvest solar energy that preheats domestic hot water for the facility. A 61% reduction in the annual domestic water heating energy is anticipated.

The IHS Kotzebue Wind-to-Heat Project now under way utilizes excess wind energy from the local utility cooperative. The cooperative operates a 3-megaWatt (MW) wind farm to offset the consumption of diesel fuel. During periods of high wind, the wind generated energy can exceed the electrical load of the community. This presents an opportunity to utilize "dump loads" which convert electricity into heat that can be used for space and process heating. The hospital was identified as an ideal candidate for this excess energy because its heating loads are substantial and fairly constant. This project is expected to reduce hospital fuel oil consumption by up to 20% by directly offsetting an estimated 31,938 gallons annually. Another health center is developing a conceptual design to purchase excess hydroelectric electrical energy from the local utility. This energy will be used to power electric boilers, replacing inefficient fossil fuel fed boilers that have outlived their anticipated life.

Keweenaw Bay in the IHS Bemidji Area has installed two solar projects: one at a health center (80-kW) and one at the Alcohol and Substance Abuse Program clinic (60-kW) at a total cost of \$476,000. This project was completed in FY 2016. The Pokagon Health Center also completed a 63.6- kW solar project in FY 2016 at a cost of \$225,000.

In the IHS Nashville Area, a five-panel array of solar thermal collectors has been added to the roof of the Unity Healing Center in Cherokee, NC. Data is still being collected, but it appears that it will save a minimum of 50% of energy used to heat domestic water.

Strategy **Strategy Narrative Targets and Metrics** Install agency-funded HHS OPDIVs have • CDC will complete 3 solar PV arrays totaling 439-kW are renewable on-site and committed to installing in 2017 under a CDC UESC project. new PV systems in retain corresponding • An ongoing CDC energy savings performance contract 2017 and 2018, as well renewable energy (ESPC) project has issued a request for proposal (RFP) certificates (RECs). as analyzing additional for a ground mount solar PV array. opportunities for on-site FDA will install Irvine PV array ECM by mid-FY 2018. renewables. • FDA will pursue MRC PV system for UESC Phase 8 ECM in FY 2017/2018. • IHS Phoenix Indian Medical Center will install a PV system as an UESC ECM in FY 2017. The Fort Yuma Health Center PV system will be completed in FY 2018 and will generate 50% of the annual electrical load for the building. • Facility management will work with O&M contractor in FY 2017 and FY 2018 to investigate new on-site renewable energy (RE) projects. Purchase of energy HHS OPDIVs will • CDC awarded a new 12-month green energy contract with that includes examine the direct the local Atlanta utility in 2017. The amount of green installation of purchase of green electricity was increased to offset the termination of the renewable energy onpower as an alternative Ft. Collins contract due to non-competitive rates. site at a federal facility or in conjunction with • FDA energy manager will investigate the direct purchase or off-site from a RECs. of green power for FY 2018. federal facility. • NIH will investigate green power purchases should on-site PV become economically or technically problematic. • In FY 2018, OS will purchase roughly 1.6% renewable electricity via the GSA purchase power agreement (PPA) for solar energy. Install on-site thermal HHS OPDIVs will • An ongoing ESPC project at the CDC/NIOSH Pittsburgh renewable energy and analyze the life cycle site has issued an RFP which includes the possibility of retain corresponding cost effectiveness of utilizing multiple geothermal wells for facility heating. renewable attributes or on-site thermal • FDA will continue to work with energy services obtain equal value renewable energy companies to include thermal renewable energy projects replacement RECs. projects as part of in UESC ECMs. performance contracts. • The O&M contractor will continue to operate and finetune the thermal hear recovery system throughout FY 2017 and FY 2018. Install on-site HHS OPDIVs will • A new CDC laboratory is being designed that once a combined heat and analyze the life cycle contract is awarded and site chosen, life cycle cost power processes. cost effectiveness of analysis will be completed for a possible CHP generator. on-site combined heat • NIH plans to award a contract by the end of FY 2017 to and power (CHP) construct an 8-MW CHP. projects as part of performance contracts and new site designs.

Clean and Renewable Energy Strategies for Fiscal Year 2018

Explore new opportunities to install on-site fuel cell energy systems.	HHS OPDIVs will analyze the life cycle cost effectiveness of on-site fuel cell energy projects as part of performance contracts and new site designs.	•	CDC's new Building Y in Lawrenceville includes a net- zero energy requirement incorporating a fuel cell as part of the initial concept. The project funding request will be submitted in FY 2017. IN FY 2017, NIH will search for areas and loads that have all the variables needed, such as load, space, and fuel, to provide fuel cell installation opportunities. OS facility management will review the HHH Building fuel cell project in FY 2017/FY 2018 for feasibility. PSC will hold additional discussions with GSA, the local utility and the building owner on the possibility of installing an on-site fuel cell energy system.
Purchase RECs to supplement installations and purchases of renewable energy, when needed to achieve renewable goals.	To meet the increased renewable electric and clean energy targets outlined in E.O.13693, HHS OPDIVs will continue to purchase RECs.	•	To supplement on-site generation and green energy initiatives, CDC will issue an RFP and execute a contract for at least 10,000 MWs of open market REC's. FDA energy manager will purchase RECs to meet the clean energy and renewable electricity goal for FY 2017. IHS has entered into a 5-year plan (FY 2015 to 2020) to purchase renewable energy credits through DLA. With the collapse of Maryland's REC market, NIH is working with its local utilities to determine the best possible procurement methodology. In FY 2017, OS and PSC will determine the cost to purchase additional RECs to meet the clean energy goal and purchase if funding is available.

Goal 4: Water Use Efficiency & Management

Potable Water Consumption Intensity Goal

E.O. 13693 Section 3(f) requires agencies to improve water use efficiency and management, including stormwater management, and requires agencies to reduce potable water consumption intensity, measured in gallons per square foot, by 2% annually through FY 2025 relative to an FY 2007 baseline. A 36% reduction is required by FY 2025.

Industrial, Landscaping and Agricultural (ILA) Water Goal

E.O. 13693 Section 3(f) also requires that agencies reduce ILA water consumption, measured in gallons, by 2% annually through FY 2025 relative to a FY 2010 baseline.

Chart: Progress Toward the Potable Water Intensity Reduction Goal



HHS Progress Toward the Potable Water Intensity Reduction Goal

The HHS FY 2016 water use intensity was 58.3 gallons per square foot (gal/SF) as compared to the FY 2007 baseline of 64.4 gal/SF. This represents a 9.5% reduction from the baseline. While NIH, IHS and PSC increased consumption, NIH's small intensity increase had a larger effect on the HHS water intensity because it constitutes the bulk of the HHS water use. IHS's intensity increase resulted from a decrease in square footage due to the transfer of sites to tribal operations. PSC also reported an intensity increase due to the large increase in building occupants.

HHS has focused on water efficiency over the past few years, to overcome difficulty in obtaining accurate consumption data, identifying areas of high usage and waste, and controlling overall usage. HHS has a large amount of laboratory and vivarium space, which are water intensive. In addition, much of the research performed requires water in the research procedures. It is not uncommon for changes to the type of research or analytical testing performed, or the frequency of performance, changing the amount of water used in that facility.

CDC's FY 2016 water intensity reduction of 12.7% (as compared to FY 2015) can be attributed to several factors, such as close monitoring of building level and site meter readings from the BAS and WaterSignal systems, and repair of multiple steam leaks at the NIOSH/Pittsburgh site, reducing less boiler make-up requirements. In addition, continued savings from reduction measures initiated in FY 2015 contributed to the savings. These previous measures included reduced laboratory sand filter backwashing in laboratory and central utility plan buildings and close monitoring of laboratory vivarium flush use for area drains. Finally, in FY 2016, a cooling tower leak was repaired in B103 at the Chamblee campus.

Strategy	Strategy Narrative	Targets and Metrics
Install green infrastructure features to assist with storm and wastewater management.	Several HHS OPDIVs are incorporating green roofs, rainwater cisterns, minimizing impervious surfaces, and practicing green landscaping as priorities in capital project planning.	 The CDC Roybal Campus and Chamblee Campus master plans incorporate additional facilities, green space, and a parking structure that will include green infrastructure strategies. IHS minimizes site irrigation and manages stormwater flow at or near historical levels. At the PSC 5600 Fishers Lane multiple bioswales have been installed to remove silt and pollution from surface runoff water. In addition, a green roof was installed on the 4th floor. Both these features will be closely monitored to ensure they are properly maintained.
Utilize ESPC/UESCs to reduce water consumption and ensure all ESPC/UESCs consider water reduction strategies.	HHS OPDIVs require all performance contracts to include investigation of water conservation measures (WCMs).	 The CDC/NIOSH ESPC project will install new building level water meters at facilities decentralized from the existing boiler plant. Scheduled completion is targeted in FY18. Current FY 2017 and FY 2018 FDA MRC UESC projects include ECMs to the hot water system to improve efficiency and reduce load to save water. FDA Irvine FY 2017UESC ECMs include hot water system improvements, plumbing fixture retrofit to solar operated, and two-way toilet retrofits. NIH will initiate a study and design for installation and repair of thermal/hydraulic bridges at the Bethesda Campus buildings by September 30, 2017.

Water Use Efficiency & Management Strategies for Fiscal Year 2018

Install and monitor water meters and utilize data to advance water conservation and management.	In early FY 2016, HHS OPDIVs updated their metering plans in accordance with current mandates. The plans outlined remaining meters to be installed.	 OPDIVs will continue to follow Metering Plans for FY 2017/FY 2018 to install identified water meters. CDC will renew the annual monitoring contract with WaterSignal in August 2017. The CDC/NIOSH ESPC project will install new building-level water meters at facilities decentralized from the existing boiler plant. Scheduled completion is targeted in FY 2018. Facility managers will continue to monitor water use for leaks and spikes and high usage areas will continue to be analyzed for savings. NIH will follow up on the recommissioning project of all meters, by replacing broken meters by 12/31/17. The OS HHH Bldg. O&M contractor will provide quarterly reports on water usage and water conservation measures in FY 2017 and FY 2018. PSC will continue to monitor 5600 Fishers Lane water usage to establish a new baseline and track trends now that the building is fully occupied.
Install high efficiency technologies, e.g. WaterSense fixtures.	Water reducing measures and high efficiency fixtures/products are specified in the HHS OPDIV Design and Construction Manuals.	 CDC's Design and Construction Standards requires high-efficiency low water use fixtures where life-cycle cost effective and applicable. FDA Irvine UESC ECMs to be installed in FY2017 include plumbing fixture retrofit to solar operated and two-way toilets. Water saving plumbing fixtures will be used in the FDA JLC renovation and new WEAC buildings. Water urinals will be analyzed in FY 2017 for installation in the OS HHH Bldg. restrooms.
Minimize outdoor water use and use alternative water sources as much as possible.	HHS OPDIVs ensure irrigation and outdoor water use minimizes potable water use through use of cisterns, well water and sustainable landscaping practices.	 HHS OPDIVs maintain vigilant monitoring and enforcement to minimize outdoor potable water use. CDC collects and uses non-potable water in cisterns, and well water for most outdoor water use. The IHS hospital at Crow Agency, MT, is designing a rain water capture system that will eliminate the use of potable water for irrigation, freeing up much needed potable water for the local public systems.

Design and deploy water closed-loop, capture, recharge, and/or reclamation systems.	HHS OPDIV project designs are reviewed to include closed loop and reclamation systems.	 CDC will continue market research to develop a business case for infrastructure investment and purchasing reclaimed water from Emory University's "Water Hub" for Central Utility Plant process uses at the Roybal Campus. FDA has upgraded all once-through or open loop systems to closed-loop wherever possible. Closed-loop systems are part of all new designs and major renovations. FDA will fine-tune JLC boiler control strategies in FY 2017 to use more condensate return to save water. FDA will continue aggressive JLC maintenance initiative to repair coils and steam traps to increase the capture of condensate return. FDA JLC working to recover air-handler condensate in FY 2017 for use in cooling tower operations. AHU condensate recovery will be analyzed for the OS HHH Bldg. HVAC system by mid-FY 2018.
Develop and implement programs to educate employees about methods to minimize water use.	HHS OPDIVs continuously focus on areas to improve employee engagement and raise water efficiency awareness.	 Displays will be set-up at OPDIV Earth Day expos and other events to raise water efficiency awareness. A water conservation training video and educational outreach information are distributed to CDC employees through the CDC Connects intranet site and Sustainability Newsletter announcements. PSC will monitor cafeteria and custodial water usage to develop best practices policy.
Assess the interconnections and dependencies of energy and water on agency operations, particularly climate change's effects on water which may impact energy use.	HHS OPDIVs are assessing the interconnections of energy and water at their facilities, and identifying climate change effects that concern their facilities.	 CDC is considering a project for FY 2017 to study its entire owned portfolio to incorporate climate change and E.O. 13693 requirements through 2025. NIH will complete the design and construction of chilled water storage and industrial water storage tanks to maintain service through emergency conditions, by FY 2018,
Ensure that planned energy efficiency improvements consider associated opportunities for water conservation.	HHS OPDIVs design, project and facility management ensure that all design, renovation, upgrade and performance contracting projects include opportunities for water conservation.	• OPDIVs continuously analyze water reducing measures in every energy project, including ESPC and UESC projects.

Where appropriate, identify and implement regional and local drought management and preparedness strategies that reduce agency water consumption	HHS OPDIVs follow drought and emergency management and preparedness strategies where appropriate. HHS OPDIVs are assessing the interconnections of energy and water at their facilities, and identifying climate change effects that concern their facilities to address preparedness.	• CDC requires the use of native, low maintenance, noninvasive, climate appropriate, and drought/pest resistant plants for improvements and capital projects.
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Goal 5: Fleet Management

Fleet Per-Mile Greenhouse Gas (GHG) Emissions Goal

E.O. 13693 Section 3(g) requires agencies with at least 20 motor vehicles to improve fleet and vehicle efficiency and management. E.O. 13693 Section 3(g)(ii) requires agencies to reduce fleet-wide per-mile GHG emissions from agency fleet vehicles relative to a FY 2014 baseline, and sets new goals for percentage reductions: not less than 4% by FY 2017; not less than 15 % by FY 2020; and not less than 30% by FY 2025.

E.O. 13693 Section 3(g)(i) requires that agencies determine the optimum fleet inventory, emphasizing eliminating unnecessary or non-essential vehicles. The HHS Fleet Management Plan and Vehicle Allocation Methodology (VAM) Report are included as appendices to this plan.



Chart: Fleet-wide Per-mile GHG Emissions

Fleet Alternative Fuel Consumption Goal

The Energy Independence and Security Act 2007 (EISA) requires each Federal agency achieve a 10 percent increase in annual alternative fuel consumption by October 1, 2015, compared to a FY 2005 baseline. By FY 2016, agencies were to have increased alternative fuel use by 175.3% relative to FY 2005. Office of Management and Budget (OMB) has asked all agencies to achieve a minimum of 5% alternative fuel use of their total fuel consumption.
In FY 2016, HHS use of alternative fuel equaled 2.3% of total fuel use. HHS has increased its alternative fuel use by 266.3% since FY 2005. HHS has achieved reductions in fuel use each year by decreasing the number of total vehicles in the motor pool, properly distributing newly acquired alternative fuel vehicles and encouraging ridesharing for employees who utilize fleet resources.

HHS has been replacing high usage motor pool vehicles with hybrids and alternative fuel vehicles in order to achieve the reduction in fleet petroleum use outlined in E.O. 13693. Total fleet fuel consumption (gasoline and alternative) decreased slightly from FY2015 to FY 2016, with HHS consuming 1,786,633 gallons during the current year as compared to 1,842,077 gallons in FY 2015. HHS's most efficient vehicles serve offices that more heavily utilize fleet automobiles. Additionally, HHS continues its "right-sizing" initiative to ensure that the Agency is utilizing resources as efficiently as possible and thus reducing its environmental footprint. As a result of this effort, as well as smart trip planning, HHS has continuously reduced its total miles operated each year.

Strategy	Strategy Strategy Narrative	
Collect and utilize agency fleet operational data through deployment of vehicle telematics.	Telematics is used in 417 domestic fleet vehicles. Internationally, HHS has 191 vehicles with telematics. In some regions, HHS is taking advantage of the BPA with GSA and AT&T Mobility in reference to telematics.	• The plan is to have 75 light duty and medium duty vehicles installed with telematics by the end of 2017. We have 14 locations with a total of 60 vehicles that we expect to install telematics starting in FY 2018.
Ensure that agency annual asset- level fleet data is properly and accurately accounted for in a formal Fleet Management Information System as well as submitted to the Federal Automotive Statistical Tool reporting database, the Federal Motor Vehicle Registration System, and the Fleet Sustainability Dashboard (FLEETDASH) system.	HHS currently uses the Motor Vehicle Management Information System (MVMIS) owned by the Department of Energy. This system is fleet dedicated and not intergraded with any other agency systems. This current system does not allow for ALD reporting.	• The department will move from the Motor Vehicle Management Information System (MVMIS)to GSA's Federal Fleet Management System (FedFMS) in FY 2017. This system change will improve fleet data integrity and position the department to meet the Asset Level Data (ALD) requirements.
Issue agency policy and a plan to install appropriate charging or refueling infrastructure for zero emission or plug-in hybrid vehicles and opportunities for ancillary services to support vehicle-to-grid technology.	CDC provided projected charging station requirement by locations to AMSO. Projections are based on vehicle replacement for all CDC domestic fleet.	• FY 2017: Replacing 2 single ports for 2 dual ports. In addition to adding 1 dual port and 1 dual port solar station within the CDC community.

Fleet Management Strategies for Fiscal Year 2018

Optimize and right-size fleet composition, by reducing vehicle size, eliminating underutilized vehicles, and acquiring and locating vehicles to match local fuel infrastructure.	The fleet size is temporarily increasing from the baseline due to the Zika response. Additionally, the makeup of the fleet may change due to the expected increase of our shuttle buses/vans services. However, we are mitigating fleet size and cost, by replacing some conventional fuel vehicles with more fuel efficient hybrids and electric.	• Future plans are to continue with this type of compositions of fuel efficient vehicles and more zero emitting vehicles to the fleet.
Increase utilization of alternative fuel in dual-fuel vehicles.	HHS provides instructions/directions to drivers of the nearest alternative fueling stations to ensure compliance.	• Ongoing.
Use a FMIS to track real-time fuel consumption throughout the year for agency-owned, GSA-leased, and commercially-leased vehicles.	This data is captured by the current HHS system of record, MVMIS.	• Ongoing.
Implement vehicle idle mitigation technologies.	HHS is gradually implementing telematics systems for domestic fleet vehicles. OPDIV's are given the opportunity to select their own telematics systems based upon their budget.	• Selected telematics systems must be compatible with the HHS system of record.
Minimize use of law enforcement exemptions by implementing GSA Bulletin FMR B-33, Motor Vehicle Management, Alternative Fuel Vehicle Guidance for Law Enforcement and Emergency Vehicle Fleets.	Law enforcement vehicles are often low greenhouse gas (LGHG) vehicle leases where practical as long as the agency's mission is not jeopardized.	 HHS constantly monitors changes in daily mission and turn-in's and switches out vehicles accordingly.
Establish policy/plan to reduce miles traveled, e.g. through vehicle sharing, improving routing with telematics, eliminating trips, improving scheduling, and using shuttles, etc.	Vehicles are assigned to motor pools on major campuses. NIH has its own shuttle system for all buildings which require very limited daily rental use from the motor pool. OI employees who are traveling to the same location for a meeting are able to either ride the public transit together, or utilize an available pool vehicle.	• Overall there is not a vehicle sharing program or process in place for agencies to share with each other; however, HHS has a centralized approach to manage the fleet and utilize the assets in a shared capacity where and when their mission allows.

Goal 6: Sustainable Acquisition

Sustainable Acquisition Goal

E.O. 13693 Section 3(i) requires agencies to promote sustainable acquisition by ensuring that environmental performance and sustainability factors are considered to the maximum extent practicable for all applicable procurements in the planning, award and execution phases of acquisition.

Biobased Purchasing Targets

The Agricultural Act of 2014 (Public Law 113-79) amends Section 9002 (a)(2)(A)(i) of the Farm Security and Rural Investment Act of 2002 to establish a targeted biobased-only procurement requirement under which the procuring agency shall issue a certain number of biobased-only contracts when the procuring agency is purchasing products, or purchasing services that include the use of products, that are included in a biobased product category. Therefore, agencies are to establish an annual target for increasing the number of contracts to be awarded with BioPreferred and biobased criteria and the dollar value of BioPreferred and biobased products to be delivered and reported under those contracts in the following fiscal year.

For FY 2018, HHS has established a target of 18 contracts and \$300,000 in biobased products to be delivered.

Chart: Percent of Applicable Contracts Containing Sustainable Acquisition Requirements



In accordance with FAR Part 23 (95%) goal, HHS has achieved 95.7% compliance of new contract actions including applicable sustainability requirements. In FY 2017 and FY 2018, HHS will continue outreach and verification efforts in order to maintain the goal of 95%.

In FY 2017, HHS participates on the Federal Sustainable Acquisition and Materials Management (SAMM) Working Group and continues to engage GSA and other Federal partners on healthy/green procurement initiatives. In doing so, best practices and lessons learned are gathered and then passed along to the Divisions through the HHS's Sustainable Green Acquisition Workgroup email distribution.

To support sustainable acquisition, HHS issued guidance through the HHSAR to the acquisition workforce that emphasizes the inclusion of biobased products and all applicable Federal Acquisition Regulation (FAR) sustainability clauses in construction and other relevant service contracts. HHS provided the acquisition workforce with sustainable acquisition training, focusing on biobased products, further supporting the inclusion of sustainability requirements in applicable contracts

For FY 2018, HHS plans to achieve 100% compliance across all quarters of contracts reviewed. HHS also plans to fully utilize the sustainable facilities tools by asking OPDIVs to go to SFTools.gov more frequently to further ensure proper clauses and language are inserted in the contracts, and explore other sustainable software platform options. In order to meet FY 2018 biobased contracting targets, more biobased contracts will be awarded across the entire biobased spectrum of attributes.

Strategy	Strategy Narrative	Targets and Metrics
Establish and implement policies to meet statutory mandates requiring purchasing preference for recycled content products, ENERGY STAR qualified and FEMP-designated products, and BioPreferred and biobased products designated by USDA.	Include FAR clauses for energy and water efficient products and services, such as ENERGY STAR qualified and FEMP- designated products by EPA and DOE in all new applicable requirements.	In FY 2017, relative to FY 2016, HHS will increase by 5%, purchases of energy and water efficient products and services, such as ENERGY STAR qualified and FEMP- designated products, identified by EPA and DOE.
Use Category Management Initiatives and government-wide acquisition vehicles that already include sustainable acquisition criteria.	HHS will continue to utilize Category Management OMB Memorandum 16-02, "Category Management Policy 15-1, identified NITAAC as one of the purchasing vehicles through which the majority of purchases of basic desktops and laptops computers in standard configuration. The NITAAC GWAC incorporates "Energy Star", EPEAT, and FEMP standards in all applicable commodities.	In FY 2017, relative to FY 2016, HHS will increase purchases of services and products using Category Management vehicles and principles, which include sustainable requirements, by 5%.
Ensure contractors submit timely annual reports of their BioPreferred and biobased purchases.	Include FAR provisions and clauses pertaining to BioPreferred and biobased acquisitions in all new applicable requirements.	In early October, send email reminder to the Head of the Contracting Activity (HCA) informing them to inform their Contractors, who are required to report annually in SAM by October 31.
Improve quality of data and tracking of sustainable acquisition through the Federal Procurement Data System (FPDS).	Update current review process established for reporting.	Review reporting bi-weekly for open Sustainable PSC codes from a Contracts Intelligence Tool, which FPDS feeds into.

Sustainable Acquisition Strategies for Fiscal Year 2018

Goal 7: Pollution Prevention & Waste Reduction

Pollution Prevention & Waste Reduction Goal

E.O. 13693 Section 3(j) requires that Federal agencies advance waste prevention and pollution prevention and to annually divert at least 50% of non-hazardous construction and demolition debris. Section 3(j)(ii) further requires agencies to divert at least 50% of non-hazardous solid waste, including food and compostable material, and to pursue opportunities for net-zero waste or additional diversion.





HHS continues to advance in Waste Reduction and Pollution Prevention as evidenced by the following representative efforts:

- CDC has intensified collaboration between its Engineering, Maintenance, and Operations Services Office (EMOSO) and its Office of the Associate Director for Laboratory Science and Safety (OADLSS) to improve laboratory worker training, management of chemical stocks and waste materials, and implementation of waste reductions for its many laboratories. In the same manner, EMOSO is closely working with the Real Property and Space Management staff to improve oversight of its recycling efforts in leased space and enhance its data collection.
- IHS has issued a technical bulletin and conducted training regarding the inclusion of specifications in the scopes of work for basic maintenance and construction projects that require

the diversion of construction and demolition debris from landfills and the collection of data on those diversions. These efforts are proving to be very successful; e.g., the construction of the Kayenta Health Center in June 2016 resulted in the diversion of 85% of the construction and demolition debris.

• FDA has reassigned its Employee Safety and Environmental Management Office (ESEMO) to the Office of Laboratory Safety and Science, which directly reports to the FDA Commissioner, with the goal of centralizing safety and environmental compliance for all of FDA. The ESEMO is on track to reach its goal of auditing all FDA facilities in the U.S. that contain laboratories by December 2018.

Pollution Prevention & Waste Reduction Strategies for Fiscal Year 2018

Strategy	Strategy Narrative	Targets and Metrics
Reduce or minimize the quantity of toxic and hazardous chemicals acquired, used, or disposed of, particularly where such reduction will assist the agency in pursuing agency greenhouse gas reduction targets.	The Operational Divisions (OPDIVs) continue their efforts reduce or eliminate toxic and hazardous chemicals.	 CDC has replaced ethidium bromide gel stain with safer alternatives; e.g., GelRed. CDC Persistent Organic Pesticides lab is developing a protocol that may reduce solvent waste by 75%. FDA is updating its Chemical Hygiene Plan and Chemical Management standard operating procedures in 2017 to promote chemical reduction. IHS's ongoing program takes advantage of the medical equipment replacement to minimize toxic and hazardous chemicals required for its operations. NIH's Waste Discharge Authorization system is used for liquid waste disposal to the sanitary sewer. NIH developed the Substances of Concern (SOC) database as well as the Toxic Reduction Initiative (TCRI) and a public web interface for the SOC. NIH continues its waste management and recycling programs including office/lab recycling-composting (RTP), NIH Free Stuff, Empty Chemical Bottle Recycling, Mercury Amnesty, and Styrofoam Cooler/ice-pack take back. NIH/NIEHS continues its battery, used toner cartridge recycling, used pen recycling, etc. NIH has implemented pre-consumer cafeteria waste composting (12-24 tons/yr). NIH has a construction and demolition debris outreach program for Construction Project Managers.

Reduce waste generation through elimination, source reduction, and recycling.	The HHS OPDIVs are pursuing and implementing a broad and growing variety of source reduction, reuse, and recycling strategies. These efforts are promoted via Earth Day and America Recycles Day in addition to a steady stream of agency websites, webinars, and newsletters.	 CDC is conducting an agency-wide Waste Characterization Study to identify gaps and engage local staffs in recycling. FDA continues to engage in America Recycles Day and Earth Day to vigorously promote recycling. NIH conducts waste reduction efforts on a number of fronts including updating the NIH Waste Disposal Guide, surveying employees to determine and improve effectiveness of messages and signage, acquiring upper management support, providing Universal Waste training, conducting non-regulatory "10 Point" laboratory checkups, and completing reviews of Medical Pathological Waste/Special Medical Waste alternative treatment technologies.
Implement integrated pest management and improved landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals and materials.	Integrated Pest Management (IPM) is mature at some OPDIVs and in development and implementation at others.	 CDC continues to actively implement the reduction and elimination of toxic chemicals and promotes use of the most environmentally protective products, in strict accordance with application requirements. IHS provides advice on IPM to its field operations. NIH continues to implement and improve its comprehensive IPM (initiated 1991) by conducting ongoing reviews of IPMs at all NIH facilities, collaborating and supporting efforts in operations peripheral to IPM (e.g., animal feeding/bedding, SW management), and evaluation of new IPM techniques.
Develop or revise Agency Chemicals Inventory Plans and identify and deploy chemical elimination, substitution, and/or management opportunities.	The HHS OPDIVs continue to improve and expand Chemicals Inventory Plans (CIPs).	 CDC is interfacing its CIP with its online waste ticket system to improve accountability. FDA is incorporating its CIP into its Chemical Hygiene Plan and Chemical Management SOPs to improve efficiency. IHS has incorporated CIP assessment into its environmental audits. NIH promotes the Chemical Hygiene Plan through its safety community through routine safety consultations.
Ensure HFC management training and recycling equipment are available.	FDA and NIH are the primary HFC using facilities in HHS	 FDA will complete its audit of all U.S. based facilities in 2018 which will provide a complete inventory of its HFC training programs and recycling equipment. NIH will continue conducting EPA 608 initial and refresher training annually.

NIH expanding and enhancing its extensive waste management programs, which include construction and demolition debris outreach to Project Managers, training for Universal Wastes management, a pilot recovery program for soft plastic/film sheets, pre-consumer cafeteria composting, Styrofoam collection and reuse, Mercury Amnesty collection events, a Surplus Chemical Redistribution Program, a Solvent Recovery Program, and myriad similar activities. These activities, in concert with its Environmental Audit Program and Environmental Management System, combine to form a dynamic, comprehensive, and ever-improving pollution prevention and waste reduction program.

• In FY 2016 CMS achieved a total recycling rate of 56.50% and a total of 83.50% diversion away from landfills including waste to energy burning and recycling.

Goal 8: Energy Performance Contracts

Performance Contracting Goal

E.O. 13693 section 3(k) requires that agencies implement performance contracts for Federal buildings and provide annual targets for performance contracting. HHS targets for the next two fiscal years are:

FY 2018: \$2.3M

- CDC = \$300K
- FDA = TBD (2 potential projects)
- IHS = \$2,000K
- NIH = \$25,000K (existing pipeline)

FY 2019: \$9.3M

- CDC = \$300K
- FDA = TBD
- IHS = \$2,000K
- NIH = \$7,000K

Targets set by HHS for CDC was \$6.75M. This goal was surpassed in 2016 with award of UESC and ESPC contracts totaling over \$30M. With this commitment on the front end, CDC has committed steady, building goals of 1% of this total for each of two following years.

FDA MRC Phase 9 and Irvine Phase 3 are currently under development and investment estimates have not been finalized at this time.

Due to challenges relating to implementing Energy Savings Performance Contracts for small facilities at remote locations and failed ventures in recent years, IHS has not pursued energy performance contracting. A \$4.5 million Utility Energy Savings Contract at Phoenix Indian Medical Center is being used as a pilot to encourage other facilities to reconsider use of performance contracting. This contract is expected to be approved in the second half of FY2017. As such, IHS plans to pursue additional performance contracts over the next two years, with the possibility of significant increases over the next several years.

The 2019 target levels are based on bidding and executing an ESPC or UESC contract for a thermal bridge projects in approximately 20 buildings at the NIH campus. Rough estimate of this is \$7,000,000. Engineering and design need to be completed to 30% level for a more accurate estimate.



Chart: Progress Toward Target under the 2016 Performance Contracting Challenge¹

HHS met the 2016 performance contracting target of \$92.6 million (M) with a total of \$102.2M awarded by the end of 2016, which was 13% more than the commitment. Another \$22.4M of contracts are in the pipeline. In 2016 alone, HHS awarded \$32M of performance contracts. NIH, CDC and FDA have been the contributing OPDIVs to the awards. Performance contracts commitments in FY 2018 and FY 2019 are significantly less as OPDIVs are completing the construction of the contract ECMs.

¹ This is the only chart that will include progress through 12/31/2016 versus FY16 performance.

Performance Contracting Strategies for Fiscal Year 2018

Strategy	Strategy Narrative	Targets and Metrics
Utilize performance contracting and incorporate use of ESPCs and UESCs into planning activities to meet identified energy & water efficiency and Administration objectives while deploying life-cycle cost effective infrastructure projects, with clean energy technology, energy and water & other savings measures.	HHS OPDIVs are pursuing performance contracting to the maximum extent possible to install energy efficiency technologies.	 CDC's first UESC/ESPC projects are in construction and continued use is expected in future projects. FDA will install awarded MRC Phase 7 and Irvine Phase 2 UESC ECMs in FY 2017 and FY 2018. FDA will award MRC Phase 8 and GCSL Phase 1 UESCs in FY 2017. FDA will continue development of MRC Phase 9 and Irvine Phase 3 UESCs. IHS will complete construction activities for the Phoenix Indian Medical Center project during the last half of FY2017. NIH will solicit all internal sources for energy and water efficiency opportunities and act upon technically and economically feasible alternatives through performance contracting. PSC 5600 Fishers Lane will continue to seek UESC opportunities in the leased facility.
Evaluate the top 25% of agency's most energy intensive buildings for opportunities to implement comprehensive ESPC/UESC projects.	HHS maintains compliance with EISA auditing intervals, which is 25% each year, or 100% per four years. Action plans to implement ECMs include performance contracting.	 CDC will continue to use the ESPC/UESC vehicle to complete EISA audits. Current UESCs are being implemented at CDC's most energy intensive buildings. NIH will continue to review completed sustainability audits for potential energy and water conservation opportunities for implementation via performance contracting.
Identify potential onsite renewable energy projects in a specified percentage of performance contracts.	All HHS performance contracts include renewable energy projects where cost effective.	 CDC will finish installation of a 9-kW and 400-kW PV system in FY 2017. FDA will install Irvine PV array ECM mid-FY 2018. FDA will pursue MRC PV system for UESC Phase 8 ECM in FY 2017/2018. Additional on-site renewable energy projects are being considered at NIH for UESC/ESPC construction and/or purchase power agreements. OS supports FY 2018 installation of PV at HHH.
Ensure agency legal and procurement staff are trained to use performance contracts effectively.	HHS OPDIVs work to ensure appropriate staff are trained by the FEMP curriculum.	 HHS OPDIVs will continue to train procurement staff based on assigned roles and projects. All new OPDIV facilities management or contracting staff will receive FEMP performance contracting training in FY 2017 and FY 2018. IHS will continue to gain proficiency with performance contracting as staff complete FEMP ESPC/UESC training.

Goal 9: Electronics Stewardship & Data Centers

Electronics Stewardship Goals

E.O. 13693 Section 3(1) requires that agencies promote electronics stewardship, including procurement preference for environmentally sustainable electronic products; 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 employing environmentally sound practices with respect to the agency's disposition of all agency excess or surplus electronic products.

Agency Progress in Meeting Electronics Stewardship Goals

Chart: Electronics Stewardship



HHS is currently on track with both the procurement and end-of-life goals. The Department reached 100% in FY 2016 for the power management goal of 100% of electronics with power management features enabled. This showed an improvement from the FY 2015 report, where HHS reported 97.8% of non-exempted electronics had power management features enabled. HHS also reported 100% compliance with end-of-life goals. EPEAT procurement compliance improved from 95.6% in FY 2015 to 98.9% in FY 2016.

Data Center Optimization Goal

E.O. 13693 Section 3(a) states that agencies must improve data center efficiency at agency facilities, and requires that agencies establish a power usage effectiveness target in the range of 1.2-1.4 for new data centers and less than 1.5 for existing data centers.

HHS's existing data centers meet the stated goal for power usage effectiveness (PUE). The current rating is 1.5 for its existing data centers and there are no existing plans for new data centers. HHS is working to consolidate its data centers, especially non-tiered data centers, to make more efficient use of its facilities.

Electronics Stewardship Strategies for Fiscal Year 2018

Strategy	Strategy Narrative	Targets and Metrics
Use government-wide category management vehicles to ensure procurement of equipment that meets sustainable electronics criteria.	Review HHS and OPDIV procurement language to ensure EPEAT, Energy Star, FEMP, and other necessary clauses are included in future procurements.	• Continue to work with any OPDIVs not currently meeting this metric.
Enable and maintain power management on all eligible electronics; measure and report compliance.	Review HHS and OPDIV policies for enabling power management features on eligible agency electronic products and revise as needed.	 100%, for eligible electronic products with power management (as outlined by OMB and CEQ). Continue to work with OPDIVs to meet this metric.
Implement automatic duplexing and other print management features on all eligible agency computers and imaging equipment; measure and report compliance.	Review HHS/OPDIV policies for enabling duplex printing and other print management features on eligible agency electronic products and revise as needed.	 100% for eligible desktop and network printers (as outlined by OMB and CEQ). Continue to work with any OPDIVs not currently meeting this metric.
Ensure environmentally sound disposition of all agency excess and surplus electronics, consistent with Federal policies on recycling & disposal of electronic assets, and measure and report compliance.	Review HHS and OPDIV practices and policies for disposition of excess or surplus electronic products and identify best practices and areas for improvement.	 100% for all disposition of excess and surplus (as outlined by OMB and CEQ). Continue to work with any OPDIVs not currently meeting this metric.
Work with CIO counterparts to improve tracking and reporting systems for electronics stewardship requirements throughout lifecycle.	HHS will continue to improve tracking and reporting for electronics stewardship through the lifecycle.	 Track all electronic stewardship data for all laptops, monitors, and printers. Continue to work with any OPDIVs not currently meeting this metric.

Data Center Optimization Strategies for Fiscal Year 2018

Strategy	Strategy Narrative	Targets and Metrics
Install and monitor advanced energy meters in all tiered data centers (by FY18) and actively manage energy and power usage effectiveness.	HHS will begin procurement and installation of physical energy metering in tiered data centers not currently metered as budgetary constraints allow.	• FY 2018 Power Metering Goal: 80% of all tiered data centers monitored.
Minimize total cost of ownership in data center and cloud computing operations.	HHS is moving to the cloud and virtualized environments where feasible.	• FY 2018 Virtualization Goal: Ratio of 2 or higher.

Identify, consolidate and migrate obsolete, underutilized and inefficient data centers to more efficient data centers or cloud providers; close unneeded data centers.	HHS will consolidate non-tiered and tiered data centers as much as possible, including the consolidation of single servers that now constitute a data center.	 FY 2018 Tiered Closure Goal: 6 Data Centers FY 2018 Non-Tiered Closure Goal: 11 Data Centers
Improve facility utilization of existing data centers.	HHS will reduce as much as possible the physical footprint of its existing data centers through consolidation efforts.	• FY 2018 Goal: 62%

Goal 10: Climate Change Adaptation and Resilience

E.O. 13693 Section 3(h)(viii) states that, as part of building efficiency, performance, and management, agencies should incorporate climate-resilient design and management elements into the operation, repair, and renovation of existing agency buildings and the design of new agency buildings. Section 13(a) requires agencies to identify and address projected impacts of climate change on mission critical water, energy, communication, and transportation demands and consider those climate impacts in operational preparedness planning for major agency facilities and operations. Section 13(b) requires agencies to calculate the potential cost and risk to mission associated with agency operations that do not take into account such information and consider that cost in agency decision-making.

HHS OPDIVs strive to incorporate climate adaptation and resilience solutions into the design of their built environment through master planning. HHS OPDIVs continue to develop and implement programs to address the health impacts of climate change on a national, regional and community scale.

CDC National Center for Environmental Health (NCEH) has developed the *Building Resilience Against Climate Effects* (BRACE) framework, a five-step process that allows health officials to develop strategies and programs to help communities prepare for the health effects of climate change. Part of this effort involves incorporating complex atmospheric data and both short and long range climate projections into public health planning and response activities. Combining atmospheric data and projections with epidemiologic analysis allows health officials to more effectively anticipate, prepare for, and respond to a range of climate sensitive health impacts.

FDA is incorporating climate-resilient design and management elements in the design of the \$30 million renovation to JLC Buildings 14 and 53A and the WEAC's new, 75,000 square foot laboratory. Both projects are being designed and constructed to meet LEED® Silver standards.

IHS incorporates climate change resiliency design elements into new construction and major renovation projects. The Site Selection Evaluation Process in the OEHE Architect/Engineering Design Guide considers the impact the facility will have on the environment, and the impacts the environment will have on the structures and occupants. The IHS also considers the potential impact on the social environment, including the local population and existing infrastructure. Many healthcare facilities actively coordinate and cooperate with the local agencies and multiple entities to prepare for climate, and other, events.

Climate Change Resilience continues to be developed at NIH to take actions in preparing for potential changes that could negatively impact operations and the medical community. NIH continues to promote

global health and encourage preparations for extreme weather events induced by climate change as exhibited in the following accomplishments:

- NIH has supported the maintenance and expansion of the health sections of the US Climate Resilience Toolkit at toolkit.climate.gov.
- NIH Office of Research Facilities:
 - Construction underway of an industrial water storage tank to support the campus in the event of temporary water supply loss was started;
 - Construction underway of a chilled water storage system reducing the number of chillers;
 - Utilization of improved management techniques for using scales to weigh refrigerants in the CUP and maintain detailed logs of usage and loss; and
 - Climate Resilience Plan for Research Triangle Park is complete.
 - o Climate Resilience Plan for the Bethesda Campus is in progress.

Strategy	Strategy Narrative	Targets and Metrics
Update and strengthen agency <i>internal</i> mission, programs, policies, and operations to align with the Guiding Principles, including facility acquisition, planning, design, training, and asset management processes, to incentivize planning for and addressing the impacts of climate change.	HHS OPDIVs incorporate sustainable building design principles and the Guiding Principles, and comply with the HHS Policy for Sustainable and High Performance Buildings when designing new construction and renovations. Major renovations and new construction are designed and constructed to a minimum of LEED Silver specifications.	 Periodic revisions of CDC Design standards will incorporate relevant resilient design principles; CDC master plan updates every five years. In FY 2018, FDA facility design will assess design standards to determine the inclusion of additional requirements, studies or initiatives to address the potential impact of climate change. A seawall retention project for the GCSL will be designed by the end of FY 2018. NIH develops internal formal climate change plans (CCP) for NIH operations. Climate Resilience Plan for Research Triangle Park is complete and Climate Resilience Plan for the Bethesda Campus is in progress.

Climate Change Adaptation and Resilience Strategies for Fiscal Year 2018

Ensure climate change adaptation is integrated into both agency-wide and regional planning efforts, in coordination with other Federal agencies as well as state and local partners, Tribal governments, and private stakeholders.	FDA transportation offices will assess the transportation and commuting needs of various geographical employee populations and work to plan for future needs, with consideration for climate change effects. NIH proposes to continue the climate change challenges to promote health changing actions to mitigate climate change and extend the CCP to regional facilities.	•	FDA White Oak transit office will continue to work with local partners to address employee commuting needs and lessen community impact. NIH will promote previously identified tools through the website with new tools developed through the challenge. The NIH CCP will provide a framework that can be easily modified to each of the regional facilities.
Identify interagency climate tools and platforms used in updating agency programs and policies to encourage or require planning for, and addressing the impacts of, climate change.	HHS OPDIVs are analyzing and utilizing the Fitwel program for application to HHS buildings with the intent of establishing healthy buildings that minimize the secondary effects of climate change on occupants. During the NIH CCP planning process, additional tools from other agencies are identified and will be incorporated into an NIH website promoting the sites as additional resources.	•	CDC has incorporated the Fitwel program at the Atlanta campuses. By mid-FY 2018, FDA facilities management will assess the application of the Fitwel program to FDA buildings. NIH will create a website consolidating government tools and programs to support NIH and stakeholder response to climate change.
Update emergency response, health, and safety procedures and protocols to account for projected climate change, including extreme weather events.	FDA provides consumers with guidelines and checklists for emergency preparedness due to natural disasters. IHS facilities across the nation are part of the local emergency response networks and involved in healthcare preparedness.	•	FDA provides consumers with guidelines and checklists for emergency preparedness due to natural disasters. IHS facilities across the nation are part of the local emergency response networks and involved in healthcare preparedness. NIH will revise Continuity of Operations Planning plans to incorporate additional procedures for extreme weather events.

Strengthen agency <i>external</i> mission, programs, policies and operations (including grants, loans, technical assistance, etc.) to incentivize planning for, and addressing the impacts of, climate change.	Where applicable, external FDA programs and initiatives encourage the analysis of the impact of climate change events or occurrences on food and drug production or consumption. IHS will develop a Sustainability Progress Report to explain how the IHS addresses the impacts of climate change and incentivize planning for it NIH will leverage Climate Resilience website to help grantees prepare for Climate Change	 The Medical Counter Measures Initiative continues to work on ensuring collaboration between federal and private sectors to coordinate medical countermeasure development, preparedness, and response to issues that could be due to or exacerbated by climate change such as airborne or infectious diseases. https://www.fda.gov/EmergencyPreparednesss/Counterterrorism/MedicalCountermeasures/d efault.htm The IHS 2014 -2015 Sustainability Progress Report is available. The IHS has started compiling information for the 2016-2017 report. NIH has supported the maintenance and expansion of the health sections of the US Climate Resilience Toolkit at toolkit.climate.gov. NIH has continued to partner with the health care sector in evaluating and refining the risk management guidance for health care facilities, the Sustainable and Climate Resilience Health Care Facilities Toolkit, at toolkit.climate.gov.
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