U.S. Environmental Protection Agency

Sustainability Report and Implementation Plan

2019

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Executive Summary

The U.S. Environmental Protection Agency (EPA) continued to make progress on its sustainability goals in fiscal year (FY) 2018. In addition, the EPA is proud to have made significant progress over the past 15 years in the following areas:

- Energy efficiency
- Performance contracting
- Renewable energy
- Water efficiency
- High performance sustainable buildings
- Waste management and diversion
- Transportation/fleet management
- Sustainable acquisition
- Electronics stewardship
- Greenhouse gas emissions

Energy Efficiency

The EPA's 33 reporting facilities, located across the country, are laboratories; as research facilities, they have significant air quality requirements. The EPA's 13,800+ employees are also housed in 110 non-reporting offices and other facilities, where the EPA does not control the utilities. Because the EPA's labs employ single-pass air for both research integrity and employee safety, they are typically very energy-intensive. In FY 2018, the EPA's energy intensity was 260,186 British thermal units (Btus) per gross square foot (GSF). This was a decrease in energy intensity of 3.5 percent from FY 2015, and 34.9 percent lower than the agency's energy intensity in FY 2003. However, it was an increase of 3.3 percent from FY 2017. Since no significant capacity, employees or processes were added in FY 2018, the EPA attributes much of this increase to its heating and cooling loads. The agency's approach for reducing energy and other resource use in its facilities encompasses three strategies:

- Where possible, **consolidate** operations and facilities to reduce the overall footprint and utility use.
- Conduct facility **master planning** to identify cost-effective infrastructure and system improvements.
- Where feasible, consider **energy savings performance contracts** (ESPCs) to invest in energy projects.

To address the goals of Executive Order (EO) 13834 to reduce energy use each year, and to identify spikes in facility energy use earlier in the year, the agency also initiated an effort to identify and address fluctuations in facility energy performance on a quarterly basis in FY 2018 and beyond.

Performance Contracting

The EPA awarded an ESPC at one of its largest facilities in Research Triangle Park (RTP), North Carolina, in FY 2018. Two different energy conservation measures will be underway or completed in RTP by the end of the 2019 calendar year. Additionally, the agency has recently published a Notice of Opportunity for a new ESPC at the site of its first ESPC in Ann Arbor, Michigan.

Renewable Energy

Through a blanket purchase agreement (BPA) of renewable energy certificates (RECs) and existing green power contracts, the EPA purchased 13.4 million kilowatt-hours (kWh) of delivered green power and RECs in FY 2018, which was 13.4 percent of its annual electricity use in FY 2018.

Water Efficiency

The EPA's water intensity in its reporting laboratories was 22.3 gallons per GSF in FY 2018, which was a decrease of 4.5 percent from FY 2017. Compared to its FY 2007 water intensity of 35.7 gallons per GSF, the EPA reduced its water intensity by 37.7 percent. The agency will continue to conduct both onsite water assessments and "desk audits" to identify additional measures to reduce water intensity in its reporting laboratories.

High Performance Sustainable Buildings

While the EPA did not certify any additional buildings as meeting the *Guiding Principles for Sustainable Federal Buildings* in FY 2018, it had already met the *Guiding Principles* in more than 25 percent of its reporting laboratories, by GSF. The agency is now focused on meeting the *Guiding Principles* in facilities where it has major renovations underway, which could take longer than the next two years to accomplish.

Waste Management and Diversion

The EPA has set its own internal waste diversion goal of 60 percent. The agency met that target by diverting 60 percent of its solid waste through recycling and composting in FY 2018 and will focus on incrementally increasing its waste reduction and diversion rates through FY 2020 through its environmental management systems (EMSs) and other facility-level efforts.

Transportation/Fleet Management

In FY 2018, the EPA reported a total fleet petroleum consumption reduction of 41.2 percent since FY 2005; however, because the EPA had been incorrectly designating many vehicles as Emergency Response (ER) in the past, and thus exempting their petroleum consumption from federal petroleum reduction objectives, the agency realized a 1.1 percent increase in covered petroleum reported from FY 2017 to FY 2018 (though not an actual increase in petroleum use). The EPA is also implementing a new fleet management information system (FMIS), which will allow the agency to efficiently and accurately monitor and analyze vehicle utilization and fuel consumption.

Sustainable Acquisition

In FY 2018, the EPA had a total of $483 million in contract actions that included at least one applicable statutory sustainable procurement requirement. That represented 36.4 percent of the agency's FY 2018 contract actions and 40.3 percent of obligations (in dollars). The EPA is employing a number of strategies such as Category Management, training, and monitoring and tracking, as well as collaborating with the agency's Environmentally Preferable Purchasing program, ENERGY STAR, WaterSense, Safer Choice, Significant New Alternatives Policy (SNAP), the Comprehensive Procurement Guideline program, and other programs to continue to enhance its sustainable acquisition efforts.

Electronics Stewardship

The EPA continues to improve its electronics stewardship and comply with the Federal Acquisition Regulation (FAR) Part 11.002(d), as well as ensure at least 95 percent of computers and displays, cell phones, servers, imaging equipment, and televisions are registered through the Electronic Product Environmental Assessment Tool (EPEAT). It also works through its EMSs to ensure that electronics acquisitions achieve 100 percent power management enabling for eligible products.

Greenhouse Gas Emissions

Compared to FY 2008, the EPA reduced its Scope 1 and 2 GHG emissions 44.2 percent; however, the agency's Scope 1 and 2 emissions increased from FY 2017 to FY 2018, due to energy intensity and petroleum fuel use increases. To continue to make progress in this area, the EPA will focus on energy-saving performance contracting measures, right-sizing its fleet and purchasing green power and RECs where advantageous to do so.

Implementation Summary: Facility Management

1. FACILITY ENERGY EFFICIENCY

FY18 Energy Intensity Progress (Btu/GSF):

34.9% reduction from FY03
3.3% increase from FY17

FY19-FY20 Plan:

1.75% reduction in FY19 from FY18
1.75% reduction in FY20 from FY19

Implementation Status:

Having far exceeded the requirements of the Energy Independence and Security Act (EISA) to reduce energy intensity 30 percent by 2015, the EPA is now looking for less "low-hanging fruit" to reduce energy intensity on an annual basis at its facilities, which included consolidating the regional laboratory in Colorado into a nearby facility in the state in FY 2019. In addition to using advanced metering and master planning to monitor and consolidate its building portfolio, the agency is using ESPCs, EISA energy assessments and desk audits to identify and implement energy conservation measures in its reporting laboratories.

In the short term, because energy intensity increased in most of its facilities from FY 2017 to FY 2018, the EPA has instituted an effort to flag year-to-year significant energy increases on a quarterly basis, contacting facility managers when necessary to talk about ways to bring energy intensity back on track. The EPA's approach to energy efficiency improvement has been longer term in nature, comprising the following three strategies:

- Where possible, **consolidate** operations and facilities to reduce the overall footprint and utility use.
- Conduct facility **master planning** to identify cost-effective infrastructure and system improvements.
- Where feasible, consider **ESPCs** to invest in energy projects.

Priority Strategies & Planned Actions

In FY 2020 and FY 2021, the EPA will continue its three-part approach to improving the energy efficiency of its facilities, recognizing that much of its building stock is aging and that its laboratories require energy-intensive, single-pass air for research integrity and employee safety:

- **Consolidation:** The EPA will continue its trend of identifying and consolidating facilities that are underutilized into more energy-efficient laboratories with the capacity to serve additional researchers' efforts. The EPA is conducting the process to excess its lab in Grosse Ile, Michigan. It is estimated that the property will be vacated and utilities discontinued during FY 2020.
- **Master Planning:** Sixty percent of the agency's energy intensity footprint comes from its four largest facilities, with campuses in RTP, North Carolina; Cincinnati, Ohio; Fort Meade, Maryland; and Ann Arbor, Michigan. The EPA will continue to make significant progress on its master plans in Cincinnati and Fort Meade.
- **ESPCs:** The EPA will continue to focus on completing projects with an ESPC in RTP, North Carolina, and is in the process of selecting an energy services company (ESCO) to succeed its existing ESPC in Ann Arbor, Michigan, which expires at the end of 2022. In RTP, the ESCO has committed to complete the construction phase by the end of FY 2020 and begin the measurement and verification phase in FY 2021.

Each of these strategies requires significant investment of the agency's financial and staff resources. Specific milestones and investments in the projects described above will be determined upon receipt of the EPA's specific annual budgets. The EPA is unable to commit to specific milestones until funding is confirmed.

2. EFFICIENCY MEASURES, INVESTMENT, AND PERFORMANCE CONTRACTING

FY18 Performance Contracting – Investment value and number of new projects awarded:

$35.9M / 1 ESPC awarded in FY18

FY19-FY20 Plan:

$0 awarded/1 project underway in FY19

$0 awarded/1 project underway in FY20

Implementation Status

In FY 2018, the EPA completed construction on a solar array procured through a power purchase agreement at its Edison, New Jersey, laboratory. More recently, the agency awarded an ESPC for its RTP, North Carolina, campus that will help the EPA avoid more than $50 million in planned facilities projects, and energy conservation measures are already underway. A lighting upgrade project should be completed and a high-temperature hot water project will be underway by the end of calendar year 2019.

Priority Strategies & Planned Actions

As described in the previous section, the two ESPC efforts the EPA has underway include the following milestones:

- **RTP, North Carolina:** The ESCO has committed to complete the construction phase by the end of FY 2020 and begin the measurement and verification phase in FY 2021.
- **Ann Arbor, Michigan:** An existing ESPC at the National Vehicle Fuel Emissions Laboratory expires at the end of 2022; the EPA is in the process of selecting an ESCO to succeed the existing contract.

3. RENEWABLE ENERGY

FY18 Renewable Electricity Use:

13.4% of total electricity in FY18

FY19-FY20 Plan:

7.5% of total electricity in FY19
7.5% of total electricity in FY20

Implementation Status

In August 2018, the EPA procured a BPA through the Defense Logistics Agency for a total of more than 13 million kWh of RECs that supported renewable energy generation in Louisiana. Combined with two additional green power contracts, the EPA purchased 13.4 million kWh of delivered green power and RECs for FY 2018. For onsite renewable energy generation in FY 2018, the EPA commissioned and activated a solar array at its laboratory in Edison, New Jersey, which now generates electricity equivalent to approximately 40 percent of the facility's electricity needs.

In recent years, EPA has reduced its green power and REC purchases to a level that is more economically advantageous to the agency. These purchases more than cover the 7.5 percent requirement under the Energy Policy Act.

Priority Strategies & Planned Actions

The EPA plans to complete another BPA of RECs for FY 2019. With other small green power contracts and onsite renewable energy generation, the EPA will ensure it more than meets the Energy Policy Act requirement that at least 7.5 percent of annual agency-wide electricity use be from renewables.

Given the location and acreage of the EPA's facilities, the agency has determined that most additional onsite renewable energy projects would require significant investment without a high rate of return. The agency is focusing on energy efficiency improvements to reduce its overall energy requirements; however, the agency will continue to explore options to cost-effectively implement site renewable energy projects at its facilities.

4. WATER EFFICIENCY

FY18 Water Intensity Progress (Gal/GSF):

37.7% reduction from FY07
4.5% reduction from FY17

FY19-FY20 Plan:

2.0% reduction in FY19 from FY18
2.0% reduction in FY20 from FY 19

Implementation Status

After a slight increase in water intensity in previous years, in FY 2018 the EPA reduced its water intensity 4.5 percent from FY 2017 (and achieved a 37.7 percent reduction from FY 2007). The agency has also continued to meet its target of assessing EISA-covered facilities every four years for potential water conservation measures and updating its facility Water Management Plans accordingly. In FY 2018, the agency completed six desk audits and one in-person water assessment to identify and follow up on previously identified water conservation measures.

Priority Strategies & Planned Actions

The EPA will review facility Water Management Plans in FY 2020 and FY 2021 for potential projects to reduce water intensity on an annual basis. The EPA has an in-person water assessment planned in one laboratory and desk audits planned for other facilities to assess one quarter of its EISA-covered facilities between July 1, 2019, and June 30, 2020.

Similar to its approach for improving the energy efficiency of its facilities, and because it has already completed all the “low-hanging fruit” and significantly reduced its potable and non-potable water use, the EPA is using the following approach to identify additional water conservation opportunities:

- Where possible, **consolidate** operations and facilities to reduce the overall footprint and utility use.
- Conduct facility **master planning** to identify cost-effective infrastructure and system improvements.
- Where feasible, consider **ESPCs and/or UESCs** to invest in energy- and water-saving projects.

5. HIGH PERFORMANCE SUSTAINABLE BUILDINGS

FY18 Sustainable Buildings Progress:

8 sustainable Federal buildings
22.9% of buildings / 26.2% of gross square footage (GSF)

FY19-FY20 Plan:

26.2% of GSF in FY19
25.5% of GSF in FY20

Implementation Status

The EPA developed the GreenCheck process as a checklist to evaluate new construction and renovation/alteration projects exceeding $150,000 or 5,000 GSF during project inception, planning, design, and construction for sustainable building requirements, statutes, and guidance such as the *Guiding Principles for Sustainable Federal Buildings*. In FY 2018, the agency upgraded the checklist into an online SharePoint form to promote collaboration and tracking of project sustainability compliance. The new process is currently being initiated on the design of a major mechanical and electrical upgrade at the EPA's laboratory in Duluth, Minnesota.

Priority Strategies & Planned Actions

The EPA is in the design or construction phase for major renovations at four buildings to be completed beyond FY 2020. High performance sustainable building renovations are underway at EPA laboratories in the following locations:

- Corvallis, Oregon: Under construction
- Athens, Georgia: In design phase
- Duluth, Minnesota: In design phase
- Narragansett, Rhode Island: In design phase

Each of these renovations requires significant investment of the agency's financial and staff resources; the Corvallis, Oregon, renovation is well underway. Specific milestones and investments in the design phase of the project will be determined upon receipt of the EPA's FY 2020 budget.

The EPA will continue toward achieving the *Guiding Principles* in these four facilities. The *Guiding Principles* will be incorporated into these projects to the maximum extent practicable, using the GreenCheck process to ensure federal sustainability mandates and goals are addressed; however, these projects will not be completed before FY 2020. Due to that fact, and the EPA's consolidation efforts that will close facilities that previously met the *Guiding Principles*, the agency's rate of high performance sustainable buildings will decrease or remain steady for the next two years.

6. WASTE MANAGEMENT AND DIVERSION

FY18 Non-hazardous Waste Management and Diversion:

2,068 metric tons of non-hazardous solid waste generated*

40% sent to treatment and disposal facilities

*not including construction and demolition waste

Implementation Status

In FY 2018, EPA employees continued to implement a variety of strategies to reduce the amount of non-hazardous waste they generate, including shifting to paperless best practices, setting up internal employee exchanges to reuse excess supplies, donating unwanted supplies and proactively preventing junk mail delivery, and they also improved their recycling program awareness and expanded the types of materials they collect for recycling. In FY 2018, 81 percent of the EPA's major offices and laboratories (including both owned and leased facilities) had composting programs in place to keep food, yard waste and other organic materials out of landfills. In addition, EPA laboratories continued to transition to new analytical methods that use less solvents and reagents, therefore producing less hazardous waste.

Priority Strategies & Planned Actions

Working through their EMSs, EPA locations will continue building on the waste reduction strategies mentioned above, expanding the type of materials they recycle and compost, and collecting ideas and lessons learned to replicate waste reduction and diversion best practices across the agency. Using FY 2018 as a baseline, the EPA will strive to ensure that the amount of non-hazardous solid waste it generates and the percentage sent to the landfill does not increase in FY 2019 and that reductions are realized in FY 2020. The goal will be to reduce the amount of total non-hazardous solid waste generated across the agency by 1.5 percent and the percentage sent to landfills by 1 percent in FY 2020.

Implementation Summary: Fleet Management

7. TRANSPORTATION / FLEET MANAGEMENT

FY18 Petroleum Reduction Progress (Gal):

41.2% reduction in petroleum fuel since 2005
1.1% increase in petroleum fuel since FY17

FY19-FY20 Plan:

2.0% reduction in FY19 from FY18
2.0% reduction in FY20 from FY19

Implementation Status

During FY 2018, the EPA implemented its new FMIS in locations covering about half of its agency-wide fleet, resulting in greater fleet data accuracy and granularity; however, greater FMIS accuracy also highlighted some problems with prior years' reporting methods (namely, that the EPA had been incorrectly designating many vehicles as Emergency Response and thus exempting their petroleum consumption from federal petroleum reduction objectives). Under guidance, the EPA corrected the ER designation inaccuracy in FY 2018 reporting and for the first time counted these vehicles' petroleum consumption (which is about 5 percent of the agency's total petroleum use) in its covered petroleum totals. From FY 2005 to FY 2017, the EPA demonstrated consistent annual reductions in covered petroleum consumption even with this error. EPA would continue to report reductions through FY 2018 of about 4 percent had reporting methods not changed.

Priority Strategies & Planned Actions

The EPA has developed a coordinated approach to fleet data collection and analysis to improve the fuel efficiency of its vehicles and right-size its fleet:

- **Data Collection:** The agency plans to fully implement the FMIS in all fleet locations by June 30, 2020.
- **Data Analysis:** In FY 2020, the EPA plans to complete a data visualization tool initiated in FY 2019 to bring more useful information to fleet managers, who will begin using this information to assist them in optimizing vehicle utilization.
- **Fleet Efficiency and Right-Sizing:** By June 30, 2020, the agency plans to initiate a new Vehicle Acquisition Methodology to ensure that fleet purchases are both necessary and focused on alternative fuel vehicles.

Implementation Summary: Cross-Cutting Operations

8. SUSTAINABLE ACQUISITION / PROCUREMENT

FY18 Sustainable Acquisition Progress:

36.44% of contract actions and 40.31% of obligations (in dollars), for a total of $483.8M in contract actions with statutory environmental requirements

Implementation Status

Effective October 1, 2019, the EPA has restructured its Office of Acquisition Solutions (OAS) to better align with Category Management principles and provide commodity- and service-based acquisition management support agency-wide. Realigning in this fashion allows the agency to increase sustainable acquisition compliance via building industry-specific expertise, streamline acquisition processes, and better monitor and track EPA efforts to leverage greater sustainable, effective, and efficient methods for fulfilling agency requirements for goods and services.

To further enhance the EPA's strategy to provide commodity- and service-based acquisition support, the EPA is investigating extending its implementation of Category Management beyond the current mandatory use of Common Contract Solutions via an enterprise-wide contracts initiative.

Efforts are still underway to promote sustainable acquisition training. On March 28, 2019, the OAS distributed an internal flash notice reminding the EPA's contracting community regarding the Sustainable Acquisition and Materials Management Practices Working Group's comprehensive list of sustainable acquisition training for federal employees and contractors is available on FedCenter.gov. The OAS will continue to promote, monitor, track and report progress with sustainable acquisition training.

Effective FY 2013 to date, the EPA has realized $16.4 million in savings via utilization of Common Contract Solutions (CCS) that include EPA and federal strategic sourced solutions, Category Management solutions and OMB-mandated, Best-In-Class (BIC) solutions. When applicable, CCS incorporate high quality, technically sound green language in the Statement of Work and/or FAR sustainable acquisition clause(s) in the EPA's contract writing system to ensure compliance with EO 13834 requirements for procurement.

The EPA has identified and will deploy corrective actions to help ensure consistent progress with meeting sustainable acquisition goals. As part of the Independent Verification and Validation (IV&V) debriefing and training scheduled for the fourth quarter of FY 2019, contracting officers will receive specific guidance/training on the appropriate designation and recording of FAR sustainable acquisition clauses in EPA Acquisition System (EAS)/Federal Procurement Data System-Next Generation (FPDS-NG).

Priority Strategies & Planned Actions

By FY 2020 and FY 2021, the EPA anticipates that full implementation of Category Management strategies to provide commodity- and service-based acquisition support that incorporate energy-efficient, recycled content, biobased and environmentally preferable products when applicable will significantly contribute to increased compliance with statutory requirements for procurement preference.

The EPA has established a target for FY 2019 and FY 2020 of 1 percentage point increase of sustainable contract actions and obligation dollars with sustainable requirements from the prior year. The EPA's target number of biobased-only contracts to be awarded in FY 2020 is 201, with an estimated dollar value of $3.8 million.

As part of the EPA's IV&V debriefing and training scheduled for the fourth quarter of FY 2019, contracting officers will receive specific guidance/training on the appropriate designation and recording of FAR sustainable acquisition clauses in EAS/FPDS-NG.

9. ELECTRONICS STEWARDSHIP

FY18 Electronics Stewardship Progress:

91% of newly purchased or leased equipment met energy efficiency requirements
100% of equipment with power management enabled*
100% of electronic equipment disposed using environmentally sound methods
**excluding exempted equipment*

Implementation Status

Under FAR Part 11.002(d), agencies are required to consider sustainable acquisitions when purchasing products and services; the EPEAT tool is a resource for purchasers to identify and acquire environmentally preferable electronic products. The EPA's EMS requires all applicable electronics purchases to meet the requirements of EPEAT-registered products with an agency-wide 5 percent variance. The agency's performance in this regard improved from 89 percent in FY 2017 to 91 percent in FY 2018. Over their lifetime, compared to products that do not meet EPEAT criteria, the 7,133 EPEAT-registered electronic products purchased by the EPA in FY 2017 resulted in reductions to the agency's environmental footprint, energy-related savings (960,000 kWh of electricity) and $91,457 in lifetime cost savings.

Further, the EPA's agency-wide EMS Objectives, Targets and Metrics (OTMs) ensure that new electronics acquisitions achieve 100 percent power management enabling for eligible products, and that policies are updated and maintained to ensure environmentally sound disposal practices are used for end-of-life electronics.

Priority Strategies & Planned Actions

As EO 13834 affirms that the acquisition and use of electronics be in accordance with statutory mandates under FAR requirements, the EPA will continue complying with FAR Part 11.002(d) and ensuring that at least 95 percent of applicable electronics purchased are EPEAT-registered items through FY 2021. The agency-wide OTMs will continue to require reuse of electronics whenever possible and contracts with vendors that are certified recyclers using Responsible Recycling (R2) or e-Stewards standards. The EPA will comply with the GSA's Personal Property Disposal Guide and the Federal Energy Management Program (FEMP) guideline to maintain 100 percent of standby power level of one watt or less in FY 2020 and FY 2021. To raise employee awareness of these requirements, the EPA will conduct trainings such as the EMS Local Awareness Training and continue working to improve tracking and reporting of electronics acquisition data.

10. GREENHOUSE GAS EMISSIONS

FY18 Scope 1&2 Greenhouse Gas (GHG) Emissions:

44.2% reduction from FY 2008
13.5% increase from FY 2017

Implementation Status

While agency GHG emissions have significantly decreased over the past decade, the EPA's Scope 1 and 2 emissions increased from FY 2017 to FY 2018 in part due to the agency's energy and fleet performance described earlier. The agency's overall energy intensity increased from FY 2017 to FY 2018; the EPA's renewable energy purchases decreased from FY 2017 to FY 2018; and the addition of vehicles previously classified as emergency response accounted for an increase in fuel use reported in FY 2018. The EPA continues to translate and track its data on energy use and other sources into direct and indirect emissions associated with facility energy consumption; emissions from its fleet and equipment; fugitive emissions associated with building fire suppression and mobile air conditioning equipment; research process emissions; and emissions from activities at its leased office and support space. As the agency's ability to monitor these items improves, Scope 1 and 2 emissions measurements are becoming clearer, and the EPA can target specific areas for improvement such as energy intensity and fleet management.

Priority Strategies & Planned Actions

The strategies described in previous sections to reduce energy intensity and improve fleet petroleum use will contribute to helping the EPA continue reducing its Scope 1 and 2 emissions in FY 2020 and FY 2021.