

Department of State 2018 Sustainability Report and Implementation Plan

Executive Summary

The Department of State's top four priorities for energy and environmental performance are:

- continued build-out of its Internet of Things (IoT) network for energy and environmental sensors to advance efficient and resilient operations for equipment and facilities;
- continued implementation of lifecycle cost-effective energy measures to reduce utility consumption and expenses and extend equipment lifespan;
- continued application of data-driven policies derived from the sensor network to increase utility efficiency in office and residential facilities; and
- continued development of, and participation in, innovative partnerships that improve the Department's sustainability footprint while also advancing U.S. environmental interests.

Around the world, the Department is leveraging data, technology, and behavior change to increase efficiency and modernize our physical and information technology infrastructure to help ensure security and operational resiliency. With 20,000 facilities in more than 190 countries, sustainability is a priority. Showcasing cost-effective innovative sustainability solutions at Department facilities around the world is an important – and tangible – way to demonstrate U.S. policy and economic priorities. It is also an avenue to modernize our infrastructure and operations.

One key way to do this is MeterNet. MeterNet is our smart metering program that collects and analyzes real-time data to identify opportunities to reduce cost, increase resilience, and plan for future investments. MeterNet is deployed domestically and is being deployed to overseas facilities. Already, in the first 35 participating U.S. diplomatic posts overseas, MeterNet has identified actions that could avoid consumption of 13GWh annually. In the next year, we will continue to deploy to more posts while expanding the utilities we can measure to diesel, gas, electricity and water.

Using data from our IoT network, we are reviewing the performance modeling used in design and development of our buildings and overlaying performance metrics identify opportunities for future buildings and equipment installations. The Department is also working to take advantage of cloud computing and artificial intelligence to further automate data collection, analysis, and planning.

Innovative partnerships are the critical to our success. Through a joint Power Purchase Agreement with other agencies, the Department now has 500 solar panels on the roof of our headquarters building in Washington, D.C. This array required no upfront costs. Overseas, the Department working with global partners anticipates the total of 40 separate photovoltaic systems and



Solar panels on the roof of the Department headquarters.

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three wind turbines at embassies and consulates by the end of FY2019. These efforts avoid costs and enhance facility resilience.

For all these reasons, it is an exciting time for sustainability at the Department. With the IoT infrastructure, the Department is preparing for better data availability worldwide. The Department is beginning a deliberative process to determine what overseas reporting can be done securely to further compliance with President Trump's *Executive Order Regarding Efficient Federal Operations* (E.O. 13834).

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Implementation Summary

1. Facility Management:

FACILITY ENERGY EFFICIENCY

Domestic FY 2017 Status: -16% compared to 2003 and -10% compared to 2015
Domestic Projected Progress in FY 2018: -16% compared to 2003 and -10% compared to 2015
Domestic Projected Progress for FY 2019: -17% compared to 2003 and -11% compared to 2015

Implementation Status	Operational Context	Priority Strategies & Planned Actions
<p>DOS awarded a \$13.7M UESC in FY 2017 to reduce energy and water consumption at our most energy intensive building. This UESC is expected to reduce energy consumption by 11.9% with more than \$1.17M in annual energy savings.</p> <p>The Department is incorporating energy efficiency into its contracting for facilities. In FY 2018, the Department awarded new facilities operation and maintenance contracts for nine buildings that include services for an energy manager, energy audits, and energy conservation measures.</p> <p>Overseas, new commercial facilities (embassies, consulates, and multi-family housing) are required to meet energy reduction requirements set forth in the Energy Independence & Security Act of 2007, 10 CFR 433, and Executive Order 13653.</p>	<p>Our mission critical activities often require 24/7 operation and redundant equipment, making it difficult to compare our buildings to other office buildings.</p>	<p>For domestic facilities, the Department will transition to using the 2016 Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings for new construction and renovation projects.</p> <p>The Department will leverage MeterNet to begin conducting remote energy audits to identify savings.</p> <p>The Department will continue to communicate about behavioral changes that personnel can make on its internal platform. In FY2019, an “eco-office” toolkit will be launched to help garner action.</p>

EFFICIENCY MEASURES, INVESTMENT, AND PERFORMANCE CONTRACTING

Domestic ESPC and UESC investment / number of projects FY 2017: \$13.7 M
Domestic Planned investment / number of projects FY 2018: \$2.0 M
Domestic Planned investment / number of projects FY 2019: \$0.5 M

<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned</i>
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		<i>Actions</i>
The Department awarded a \$13.7M UESC in FY 2017 to reduce energy and water consumption at our most energy intensive domestic facility. This UESC is expected to reduce energy consumption by 11.9% with more than \$1.17M in annual energy savings.	Our mission often requires 24/7 operation and redundant equipment.	<p>The Department, in conjunction with GSA, is undergoing a multi-year building modernization program. Energy and water efficiency measures are being incorporated.</p> <p>The Department will evaluate the possible use of UESCs or ESPCs at other domestic facilities.</p>

RENEWABLE ENERGY

Domestic FY 2017 Status: 31.5% renewable electricity
Domestic Projected FY 2018: 30.0%
Domestic Projected for FY 2019: 30.0%

<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned Actions</i>
<p>The Department exceeds its targets through renewable power purchase agreements.</p> <p>The Department participated in the Capital Solar Challenge and installed more than 500 solar panels on our headquarters building.</p> <p>The Department installed photovoltaic array for solar hot water heating on a newly constructed building in Charleston, SC.</p> <p>Overseas, the Department forecasts 40 separate photovoltaic systems and 3 wind turbines at embassies and consulates by the end of FY2019.</p>	<p>Power purchase agreements were selected due to highly concentrated energy demand within areas that do not allow for extensive energy production infrastructure to be built on-site, particularly in the National Capital Area Region.</p> <p>Within the District, the Department participated in a Power Purchase Agreement for rooftop solar, which was installed on top of the headquarters building. Panels were installed to the extent that the roof and solar aspect was practicable.</p> <p>Worldwide, energy markets and policy vary considerably, making it a challenge to project energy prices to calculate return on investment.</p>	<p>The Department will continue to renew power purchase agreements and incorporate additional facilities as life cycle costs dictate.</p> <p>The Department will continue to evaluate facilities, energy costs, and market realities for future cost-effective alternative energy opportunities.</p>

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WATER EFFICIENCY

Domestic FY 2017 Status: 26% reduction in potable water (Gal/GSF) compared to 2007
Domestic Projected FY 2018: 26% reduction compared to 2007
Domestic Projected for FY 2019: 27% reduction compared to 2007

<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned Actions</i>
<p>The Department is on track to meet its goals for domestic water conservation.</p> <p>The Department installs and monitors water meters in domestic facilities to ensure proper operation and infrastructure integrity.</p> <p>New construction and renovation activities are evaluated for adherence to appropriate long-term water reduction goals.</p> <p>The Department has been consulting with the U.S. Environmental Protection Agency and others to monitor new technology development that can match overseas use cases.</p>		<p>For all domestic new construction and major renovations the Department will evaluate the life cycle cost effectiveness of installing appropriate green infrastructure features to help with storm- and wastewater management.</p> <p>Domestic building managers have been instructed not to install new irrigation systems unless an alternative water source is available.</p> <p>Domestically, all new landscape design is required to be native/drought tolerant/low water consuming plants. Overseas, the Department encourages the preferential selection of native, adaptive, and drought tolerant landscape plantings as practicable.</p> <p>All new construction for Department facilities include advanced water conservation systems and features, as cost-effective.</p> <p>The Department will continue to share information about native species and drought tolerant landscaping to reduce water consumption on its internal platforms.</p>

HIGH PERFORMANCE SUSTAINABLE BUILDINGS

Domestic FY 2017 Status: 17% buildings and 6% by GSF
Domestic Projected FY 2018: 17% buildings and 6% by GSF
Domestic Projected for FY 2019: 18% buildings and 7% by GSF

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<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned Actions</i>
<p>The Department's Sustainable Buildings Implementation Plan (SBIP) has required all new construction and major renovations over 5,000 square feet to achieve compliance with a minimum LEED® Silver rating since 2012.</p> <p>Overseas, the Department has over 40 LEED certified facilities. These facilities are often the first green certified building in the country or region.</p>	<p>During 2017-2018, DOS conducted analysis of the SBIP and cost-benefit analysis of using LEED®. Moving forward, the Department will use the 2016 Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (GP), instead of LEED for domestic facilities.</p> <p>DOS completed construction of a building this year in Charleston, SC that included a PV array for solar hot water heating.</p>	<p>The Department is working to ensure that future domestic activities are scoped to the GP standards and are appropriately documented.</p> <p>The Department continues to meet or exceed the target Utilization Rate (Usable Square Feet per Occupant) of 180.</p> <p>Review and update Sustainable Buildings Implementation Plan as needed.</p>

WASTE MANAGEMENT AND DIVERSION

Domestic FY 2017 Status: 51% waste diverted
Domestic Projected FY 2018: 51% waste diverted
Domestic Projected for FY 2019: 51% waste diverted

<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned Actions</i>
<p>The Department is meeting current waste diversion goals .</p> <p>All classified paper waste from the Department headquarters, representing 4% of the total waste, is converted to energy at a waste-to-energy plant or recycled as paper pulp.</p> <p>Domestically, the Department diverted 92% of ~2 million tons of construction and demolition waste from capital projects.</p>	<p>The Department continually implements and evaluates opportunities to increase waste diversion.</p> <p>The Department includes waste diversion as part of all construction and demolition activities and actively maintains recycling contracts that are appropriate to the type and quality of material being removed.</p>	<p>The Department will continue to utilize both targeted and single stream recycling/disposal contracts to ensure the maximum amount of material is diverted from the traditional waste stream.</p> <p>The Department is evaluating how to increase the amount of its waste that is converted to energy.</p> <p>The Department will strive to ensure contractors are properly reporting diverted material.</p>

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Overseas, new U.S. embassy and consulate facilities are constructed using base building materials containing high quantities of recycled content. Recycled and locally sourced materials are given preference in the design and construction process.	Overseas, recycling is non-existent in many locations.	<p>The Department will continue to support embassies and consulates working to enhance availability of municipal recycling in their host cities.</p> <p>The Department will continue to host communications materials for waste reduction and recycling campaigns on its internal platforms.</p>
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2. Fleet Management:

TRANSPORTATION / FLEET MANAGEMENT

Domestic FY 2017 Status: 1.3% reduction of Greenhouse Gas emissions (GHGe) from FY 2016

- Overall: 709.67 fleet-wide gCO₂e/mile Components: 12.7% petroleum reduction; 35.6% decrease in alternative fuel use

Domestic Projected FY 2018: 6.75% GHGe reduction from FY 2017

- Overall: 667.88 fleet-wide gCO₂e/mile

Domestic Projected for FY 2019: 9.5% GHGe reduction compared to FY 2018

- Overall: 648.18 fleet-wide gCO₂e/mile

<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned Actions</i>
<p>The Department has reduced total vehicular petroleum consumption.</p> <p>The Department has been working to increase the proportion of vehicular alternative fuel (AF) consumption.</p> <p>The Department evaluates the fleet annually to right-size its composition and distribution.</p>	<p>The lack of alternative fuel in the Washington area remains a barrier.</p> <p>Overseas, the lack of local expertise for maintaining electric cars is a hurdle for deployment.</p>	<p>The Department will continue with reduction measures, such as encouraging dual-fuel vehicle custodians to use alternative fuel (AF) and acquiring and locating alternative fuel vehicles to match AF infrastructure.</p> <p>The Department will continue working with owners of leased facilities for potential installation of level II charging where feasible.</p> <p>The Department will conduct a feasibility study for facility charging stations.</p> <p>The Department will continue to encourage all fleet operators to use existing tools, such as the Vehicle Allocation Methodology tool, to reduce fuel use.</p>

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		The Department will continue to evaluate lifecycle costs for determining investments in electric vehicles.
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3. Cross-Cutting:

SUSTAINABLE ACQUISITION / PROCUREMENT

Domestic FY 2017 Status: \$131M in total Sustainable Dollars, which is 5% of total contracts and 1.2% of overall contract dollars with environmental clauses

Domestic Projected FY 2018: .5% increase in total sustainable actions

Domestic Projected for FY 2019: 1% increase in total sustainable actions

<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned Actions</i>
Agency's previous strategy to building the category management initiative has been satisfied through creating new initiatives, an advisory board, and obtaining new requirements to satisfy sustainable acquisition criteria, as well as creating a new chapter in our Department's Guide/Manual on Category Management (i.e. 14FAM250)		<p>The Department is undertaking an initiative to update its procurement tracking system to focus on greening elements in FPDS review data and highlight areas of applicability in reporting. This effort will help ensure inclusion of sustainable acquisition language in contracts. Once fully implemented, the Department will have better visibility in tracking and managing sustainable acquisitions in our contract and COR E-Filing system.</p> <p>The Department will train and educate procurement professionals on green acquisition through utilizing existing courses and materials. The Department will also issue guidance regarding contractors and bio-preferred and bio-based annual reports.</p>

ELECTRONICS STEWARDSHIP

FY 2017 Status: 100% equipment acquisition meeting EPEAT requirements, 100% equipment with power management, & 100% compliance with disposal guidelines

Projected FY 2018: 100%

Projected for FY 2019: 100%

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<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned Actions</i>
<p>The Department implements the following strategies:</p> <ul style="list-style-type: none"> • Use government-wide strategic sourcing vehicles to ensure procurement of equipment that meets sustainable electronics criteria. • Enable and maintain power management on all eligible electronics and measure and report compliance. Implement automatic duplexing and other print management features on all eligible agency computers and imaging equipment; measure and report compliance. • Ensure environmentally sound disposition of all agency excess and surplus electronics, consistent with Federal policies on disposal of electronic assets, and measure and report compliance. 	N/A	<p>The Department will focus on major actions to drive success in FY 2019 – 2020, including but not limited to continuing to ensure that:</p> <ul style="list-style-type: none"> • 100% of the Department’s equipment acquisition meets EPEAT requirements. • Power management is enabled on all eligible equipment. • GSA Xcess is used to dispose of all equipment that is at end-of-life. • Additionally, the Department will continue to communicate about actions that employees can take to reduce their footprint and comply with existing policy on printing, electronics, and more.

GREENHOUSE GAS EMISSIONS

FY 2017 Status: 48% reduction in Scope 1 & 2 emissions

<i>Implementation Status</i>	<i>Operational Context</i>	<i>Priority Strategies & Planned Actions</i>
<p>The Department is well positioned to continue to exceed its domestic reduction goal of 38.5% for Scope 1 and 2 Greenhouse Gases. The Department achieved this goal primarily through reductions in the Steam and Hot Water and Net Electricity Emissions categories.</p> <p>Cumulatively, from 2005 to 2015, overseas Department renewable energy systems have avoided 6,277 metric tons of carbon</p>	<p>The Department has seen an uptick in Scope 3 emissions due to business air travel. The Department has already reduced nonessential air travel, and continues to encourage DVCs, teleconferencing, and other methods to reduce air travel. However, given the nature of diplomatic work, in-person meetings are often</p>	<p>Review annual Federal Energy Management Program (FEMP) GHG emission report to identify/target high emission categories. Take action and implement specific programs or projects to address high emission areas.</p> <p>The Department will continue to advertise tools like alternative commuting and virtual business meetings to reduce non-essential</p>

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emissions.	needed.	<p>business travel. In addition, the Department will leverage MeterNet and other IoT data to maintain and monitor systems remotely as much as possible.</p> <p>The Department will continue to monitor efficiencies gained from consolidating servers and using cloud computing.</p>
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