



2014 Strategic Sustainability PERFORMANCE PLAN



Submission date: June 30, 2014

Point of contact: NASA Senior Sustainability Officer, 202.358.2800

Cover photos from left to right,

- **Hubble Space Telescope image of portion of the Monkey Head Nebula** - Carved knots of gas and dust are silhouetted against glowing gas. Image Credit: NASA, Hubble Heritage Team (STScI/AURA)
- **Autonomous Refueling Demonstration** - The pilot and flight test engineer were hands-off as NASA F/A-18 #845 flew itself during an autonomous refueling demonstration in 2007. Image Credit: NASA, Lori Losey
- **Orbital-1 Space Station Resupply Mission** - Orbital Sciences Corp. launched its Cygnus cargo spacecraft aboard its Antares rocket on Jan. 9, 2014, from the Mid-Atlantic Regional Spaceport Pad 0A at Wallops Flight Facility, beginning a resupply mission to the International Space Station. Image credit: NASA, Chris Perry
- **Jason-3 Satellite** - Artist's rendering of the Jason-3 satellite, scheduled to launch in 2015. This satellite will measure topography of the ocean's surface, providing scientists with critical information about circulation patterns in the ocean and about both global and regional changes in sea level and the climate implications of a warming world. Image credit: NASA/JPL-Caltech

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
2014 Strategic Sustainability Performance Plan

AGENCY POLICY STATEMENT

The world's citizens look to the National Aeronautics and Space Administration (NASA) for inspiration and leadership. It is NASA's mission to drive advances in science, technology, and exploration to enhance knowledge, education, innovation, economic vitality, and stewardship of the Earth. NASA is an agency that leads by example and will continue to spur profound changes in our knowledge, culture, and expectations. In its 2014 Strategic Plan, NASA commits to "environmental stewardship through Earth observation and science, and the development and use of green technologies and capabilities in NASA missions and facilities." The Strategic Plan adds further that "When we study the Earth from space, we not only reveal the marvelous complexity that enables our planet to support life, but we also gain valuable insight into climate change and weather patterns that translate into better warning and response times for dangerous weather events and natural disasters."

This is the fourth Strategic Sustainability Performance Plan (SSPP) submitted by NASA. What began as lofty goals is now closer to being engrained in the day-to-day culture at NASA. In December 2013, the Administrator formally adopted sustainability principles, including climate adaptation. NASA Policy Directive 8500, NASA Environmental Management, states that "NASA will execute the mission without compromising our planet's resources so that future generations can meet their needs." The policy directs every NASA employee and organizational element to comply with all federal, state, local, and territorial laws, and incorporate environmental risk reduction and sustainability practices into all phases of our work – planning, development, implementation, and operational phases. The policy further directs the implementation of practices to: increase energy efficiency, reduce energy consumption and greenhouse gas emissions, increase the use of renewable energy, reduce water consumption, purchase environmentally-preferable products and services, reduce the use of hazardous materials, increase recycling, build high-performance and sustainable buildings, operate an efficient fleet program, increase electronics stewarding and green engineering, and undertake climate change adaptation and encroachment protection actions.

To implement this policy and meet the requirements and targets outlined in this plan, NASA will be practical in the integration of sustainability and sustainable practices, supporting the economic growth and livability of the communities in which we conduct business. We will look for ways to leverage existing management systems, processes and decision-making, to influence both long-term planning and short-term actions, to enhance and strengthen our ability to perform our mission. We will continue to raise employee awareness and encourage each individual in the NASA community to apply the concepts of sustainability to every aspect of their daily work to achieve these goals. Finally, we pledge to maintain compliance with all applicable Federal, state, local or territorial law and regulations related to energy security, a healthy environment, and environmentally-sound operations.



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NASA Senior Sustainability Officer



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EXECUTIVE SUMMARY

VISION

NASA's sustainability policy is to execute the mission without compromising our planet's resources so that future generations can meet their needs. Sustainability provides a unique opportunity to continuously improve the resilience of NASA's space and ground asset operations and performance. NASA will continue to integrate sustainability principles into existing policies and procedures to demonstrate that we foster awareness, approaches and actions for a more sustainable world.

The culture at NASA is shifting to a more reflexive incorporation of sustainability principles into daily decision-making and strategic planning for the future. Sustainability is, after all, a newer term for the kind of comprehensive risk management that NASA has practiced for decades. The sustainability goals set forth in the Executive Order and those set by NASA help to ensure that NASA addresses its risk from changing environmental conditions and resource supplies, and does not negatively affect environmental systems and resource reserves.

Sustainability integration activities already under way at NASA include:

- Master Plans and Capital Improvement Program Plans inform construction and demolition investments;
- Designs recognize operational and mission risks, such as: direct mission risks (schedule, cost, technical); safety, security and health; legal requirements; and climate risks (short term, long term, and extreme events);
- Centers assess climate change vulnerabilities, with partners in the local community and state and federal neighbors; and
- A new land management policy incorporates flooding risks into evaluations of investments to create or renew facilities.

In addition to these ongoing actions, NASA is focusing on other activities that will contribute to positive trends in the SSPP goals.

NASA is focusing on its Energy and Water Security.

NASA is evaluating the impact of a sudden disruption to its energy and water supplies and developing priorities for temporarily reducing missions, production, services, and other programmatic or functional activities. In addition, NASA developed an Energy Security Plan (ESP) template to provide Centers with a guideline to generate their energy/water security plans based on their local conditions. This template addresses energy and water supply reliability due to unexpected events such as national disasters and other impacting events.

NASA is working to identify and respond to threats due to material obsolescence.

At NASA, material obsolescence is the inability to obtain or use (sometimes critical) coatings, solvents, foams and other materials due to one or more factors such as national or international policy driven material unavailability or market driven economic forces. NASA will continue to work with national and international partners to help mitigate these risks.

NASA continues to add green buildings to its portfolio. NASA operates over 1.8 million square feet of sustainable buildings, with 4 earning the LEED Platinum certification, 13 earning Gold, and 13 earning either Silver or certified designations. NASA will continue to incorporate green building principles into the design, construction, and operation of its facilities.

Internal partnership continues to yield better understanding of climate risks.

In 2005, launch capabilities, space operations and ground systems were deemed at risk from regional climate variability and were identified as a risk within NASA's risk management framework. Since that

time, a partnership between NASA's Office of Strategic Infrastructure (OSI) and NASA's Earth Science Division has yielded many benefits. NASA Center climate scientists on NASA's Climate Adaptation Science Investigators (CASI) team work collaboratively with Center institutional representatives to address adaptation issues. This partnership of on-site scientists and non-scientists also is instrumental in supporting climate risk workshops at NASA Centers and in the District of Columbia, where NASA is assisting with a series of workshops with federal and local stakeholders to identify and address climate vulnerabilities

Climate science experts from across the Agency provide NASA's facilities, workforce, emergency planning, and environmental stewards cutting-edge downscaled climate data and projections. This data allows asset stewards at NASA Centers, working closely with local and regional partners, to understand their current and future climate risks, develop adaptation strategies, and integrate climate considerations and solutions within existing management processes. Eight site-specific workshops have been conducted since May 2010. In addition, Centers located along coasts gathered for a workshop to together explore adaptation strategies for their common vulnerabilities. These workshops addressed conventional assets, such as built infrastructure and natural ecosystems, but also less tangible resources including workforce, emergency response, and information systems.

NASA's Energy Performance Contract Plan is fully underway.

NASA greatly exceeded the goals for Energy Savings Performance Contracts/Utility Energy Services Contracts. We pledged to invest \$19.6M in 2011-2013 for these contracts that guarantee energy savings and pay for project construction costs through the realized cost savings. NASA awarded \$45.3M in these contracts in 2011-2013, more than double what was pledged. These accomplishments are in response to the President's Performance Contracting Challenge, issued in a Presidential Memorandum entitled "Implementation of Energy Savings Projects and Performance-based Contracting for Energy Savings". In response to the Agency's success, NASA is now voluntarily increasing its pledge to \$73.9M.

NASA will continue to draw upon the creativity, experience and initiative of its workforce and partners to achieve NASA's mission, integrate sustainability into the NASA work ethic and enable the Agency to meet the goals and challenges of the Strategic Sustainability Performance Plan. NASA will also collaborate with both domestic and international partners to find new ways to implement sustainability.

LEADERSHIP

NASA's leadership embraces sustainability as a means to enable and enhance resilience of NASA's mission efforts. Sustainability has been incorporated beyond NASA's environmental management leadership as an Agency policy and requirement. Sustainability is integrated into delivering mission success through the Agency's master planning, procurement, communication and computing technologies, its infrastructure design, construction, and deconstruction of capabilities no longer required, in prioritization and budgeting of space mission assets, and in drafting Agency policies. By leveraging partnerships with international, intergovernmental, academic, industrial and entrepreneurial communities, NASA can improve mission assurance and resilience. These partners contribute innovation and technology to NASA's mission and extend sustainability principles globally.

In November 2009, Administrator Bolden named his Assistant Administrator (AA) for Strategic Infrastructure as NASA's Senior Sustainability Officer (SSO). The OSI provides executive and functional leadership, policy, technical expertise, and oversight for Agency infrastructure including facilities engineering and real property, environmental management, logistics management, aircraft management, strategic capabilities assets program, and integrated asset management. The Office's mission is to ensure that the right infrastructure assets and capabilities are available in the timeframe needed to support the Agency's mission. The AA's role, responsibility, and authority as senior leader of the OSI are well aligned with duties as NASA's SSO. The Center Sustainability Officers (CSOs), in many cases, parallel the responsibilities of the SSO at the Center level, thus extending accountability from the

Agency to Center level. The SSO and CSOs participate in quarterly video-teleconferences to provide updates on progress toward sustainability goals, with three or four Centers providing longer, more detailed slide presentations.

The SSO and CSOs consider infrastructure asset decisions to be a prime focus area to ensure NASA's sustainability. Recent revisions to master planning policies and a new land management directive compel institutional stewards at the Agency and Center levels to carefully evaluate risk factors relating to capital investments. New facility design guidelines take climate into account and Center climate vulnerability assessments enable better capital investments.

Headquarters (HQ) Sustainability Working Group (SWG) coordinates sustainability implementation, with valuable Center contributions

The goal of the Headquarters (HQ) SWG is to ensure an integrated strategy towards sustainability across the Agency, leveraging existing programs and teams. The SWG team is led by NASA's SSO and is composed of HQ leaders from each appropriate community of practice area. These HQ leaders coordinate Center activities to achieve goals, objectives, and targets contained within the annual SSPP. The HQ SWG meets monthly and has representatives from many NASA offices – OSI, Office of Procurement, and Office of the Chief Information Officer. More broadly, perspectives of other organizations (for instance the Chief Financial Officer or General Counsel) are consulted to ensure alignment, enabling sustainable progress. Thus the SWG includes participants with concerns broader than institutional infrastructure.

Successful implementation of NASA's sustainability vision and goals relies on individual leadership as well as the activities and leadership of multiple teams across the Agency. While the SWG ensures an integrated strategy towards sustainability within NASA, most of the work to truly become sustainable is executed by the Center level workforce. Because NASA is geographically dispersed, creating cross-Center teams has been an important method to spread and strengthen best practices across the NASA community. Many diverse disciplines and functional areas are needed to achieve all of the goals, requirements, and targets associated with sustainability. To execute, NASA has well established communities of practice – energy, water, transportation, recycling and sustainable acquisition, design and construction, maintenance and operations, master planning, climate change adaptation, electronic stewardship, and others. The pursuit of more sustainable practices requires the integration and coordination of these discipline-focused teams.

Communities of practice are coordinated by NASA HQ and staffed by one or more individuals from each Center or facility. In many cases, these individuals integrate across several communities. A common example is for a Center energy manager to have additional duties in water management.

PERFORMANCE REVIEW

Executive Order 13514 Federal Leadership in Environmental, Energy, and Economic Performance

GOALS		STATUS
	<p>Goal 1: Greenhouse Gases GOAL: Reduce direct GHG emissions (onsite or offsite) by 18.3% and indirect emissions (e.g., commuting, travel) by 12.3% by FY2020, compared to 2008</p>	
	<p>Goal 2: Sustainable Buildings GOALS: Facility Energy Intensity: Reduce energy consumption/GSF of building area by 3% annually from FY2003 baseline for FY2006 – FY2015 (30% Total) Sustainable Buildings: At least 15% of Agency's existing buildings meet Guiding Principles by FY 2015.</p>	 
	<p>Goal 3: Fleet Management GOAL: Reduce petroleum use by 2% annually, compared to 2005; increase use of alternative fuels by 10% annually through FY2015</p>	
	<p>Goal 4: Water Use GOAL: Reduce potable intensity (gallons/sq ft) by 2% each year, compared to 2007; reduce use for industrial, landscaping, and agricultural by 2% each year, compared to 2010</p>	
	<p>Goal 5: Waste Reduction GOAL: Divert 50% of solid waste (excluding construction and demolition debris); divert 50% of construction and demolition debris</p>	
	<p>Goal 6: Sustainable Acquisition GOAL: >95% of applicable new contract actions meet federal mandates for acquiring products that are energy efficient, water efficient, biobased, environmentally preferable, non-ozone depleting, recycled content, or are non-toxic or less toxic alternatives</p>	
	<p>Goal 7: Electronic Stewardship GOAL: Procure energy-efficient equipment rated per Electronic Product Environmental Assessment Tool (EPEAT); use best practices for computer operation and disposal</p>	
	<p>Goal 8: Renewable Energy GOAL: For FY13 and beyond, 7.5% of agency's total electricity consumption is from renewable energy sources</p>	
	<p>Goal 9: Climate Change Resilience GOAL: Evaluate climate change risks to identify and manage the effects of climate change on the agency's operations and mission in both the short and long term</p>	
	<p>Goal 10: Energy Performance Contracts GOAL: For NASA, commit \$19.6M in Energy Savings Performance/Utility Energy Service Contracts by December, 2013.</p>	



Goal 1: Greenhouse Gases

GOAL: Reduce direct GHG emissions (onsite or offsite) by 18.3% and indirect emissions (e.g., commuting, travel) by 12.3% by FY2020, compared to 2008



Status as of
September
30, 2013

- Reduced Scope 1 and 2 by 16.3% (Scope 1 includes direct GHG emissions from sources owned by NASA; Scope 2 includes indirect GHG from purchased electricity, heat, or steam)
- Reduced Scope 3 by 17.9% (Includes other indirect GHG emissions, e.g., travel in non-NASA vehicles)
- Reduced Scope 3 by 24.4% when including “Scope 3 percentage points” from a third-party operated project at a NASA Center

Summary NASA GHG emission reduction targets reflect: identified reductions in energy use and intensity; reduced use of fossil fuels and increased use of alternative fuels in fleet vehicles; increased application of green building principles and sustainable design; and innovative energy technologies and funding strategies that promote conservation and renewable energy use. NASA hosts a third-party operated renewable energy project at a Center for which NASA earned “Scope 3 percentage points” where NASA retains neither the renewable energy produced nor the associated renewable energy credits (RECs). Opportunities for achieving further reductions are becoming more difficult to identify, especially in the face of new mission activities or shifting mission tempo that results in increased activities and/or energy use at NASA Centers. Integration occurs via weekly meetings of the NASA Headquarters energy team and detailed review of the annual Environmental and Energy Functional Reviews. NASA Centers provide emissions data for analysis of Agency progress via an on-line tracking system. To help achieve Scope 1 & 2 reductions, NASA evaluated the top three emission categories identified in the Federal Energy Management Program (FEMP) GHG emission report and developed a chart to illustrate reductions over time. Reduction opportunities related to these sources are wholly implemented through energy efficiency and alternative energy initiatives. For the first time ever, fugitive fluorinated gases are the third largest source, but this is expected to be episodic and mission related.

Planned Actions NASA is on target to meet a NASA-developed FY 2015 GHG intensity goal for Scopes 1 and 2, in place since the Agency-wide FY 2003 energy intensity baseline. NASA will continue to reduce GHG emissions from on-site fossil-fuel consumption by installing more efficient boilers, generators, and furnaces, and by using renewable fuels. Electricity consumption will continue to be reduced through equipment upgrades and more efficient building designs. NASA will continue to implement designs for new construction and major renovations that are 30% more energy efficient than applicable code. For Scope 3, NASA is continuing efforts to reduce employee business travel by encouraging teleconference and remote interaction rather than travel and will continue to search for new opportunities for increased telework. This effort, in place for both business air and ground travel, will provide greater combined emission reductions from the baseline year than any other Scope 3 emission source.

Successes NASA examples of successes and pilots below:

- Replaced “canned air dusters” in laboratories with air from “mini air compressors”. The mini air compressors are an inexpensive, permanent and environmentally friendly alternative. One canned air duster has 3,000 times the impact on the atmosphere compared to CO₂ emissions of driving a vehicle 100 miles. One full charge of the mini air compressor is equal to more than 4 canned air dusters and will replace well over 1,000 cans in its lifetime.
- Conducting a pilot on electric and electric hybrid Privately Owned Vehicles (POVs) currently used by employees. Initial test group of 10 employees uses electric and e-hybrid vehicles. Results from the pilot are an estimated emission reduction of over 10 metric tons of CO₂e. Another Center is also investigating charging stations for employee vehicles.
- Started a pilot program where employees can choose one of two options: 1) work an hour extra each day and take every other Friday off, or 2) telework every other Friday. These options not only save the employees gasoline needed to commute, but also help reduce the associated GHG emissions.
- Decentralized a campus fuel-oil fired heat system and transitioned to building-level propane (LPG) heat realizing a 17% reduction in total facility scope 1+2 GHG emissions.

	<h2 style="margin: 0;">Goal 2: Sustainable Buildings</h2> <p style="margin: 0;">GOALS: <i>Facility Energy Intensity: Reduce energy consumption/GSF of building area by 3% annually from FY2003 baseline for FY2006 – FY2015 (30% Total)</i> <i>Sustainable Buildings: At least 15% of Agency's existing buildings meet Guiding Principles by FY 2015.</i></p>	
<p>Status as of September 30, 2013</p>	<ul style="list-style-type: none"> ● 26.4% reduction in facility energy intensity ● 14.2% of gross square footage of inventory meet Five Guiding Principles ● 9.2% of the number of total buildings meet Five Guiding Principles 	

Summary NASA continues to make progress on its energy intensity and sustainable building goals. The latter goal is measured both by the *number* of buildings and *gross square feet* of buildings meeting the Five Guiding Principles and NASA added another 186,000 square feet in FY 2013 meeting the Five Guiding Principles. NASA also conducted two Sustainable Facilities Training courses this year. Because Goal 2, Sustainable Buildings, contains multiple components relating to green buildings, energy intensity in buildings, master planning, and Energy Savings Performance Contracts, coordination and integration occurs across several NASA Headquarter-Center groups. These teams contribute to NASA's Energy Management and Sustainable Facility management strategies, updating internal requirements and guidance documents, and providing the coordination and outreach necessary to achieve the goals of the EO. NASA tracks its energy goals through the Annual DOE Energy/Water report, Semi-Annual OMB Scorecard, DOE Compliance System reporting on energy/water consumption, ECM implementation and tracking, and building benchmarking. In addition, HQ representatives participate in Interagency working groups and task forces. NASA's updated master planning requirements and recently-issued Handbook for Master Planning (containing specific reference to sustainable site development and stewardship practices) position the Agency for master plans that enable a more strategic, sustainable building set.

Planned Actions NASA Centers will continue to partner with utility companies and energy service companies during FY 2013/2014 to implement the awarded projects and conduct assessments and audits leading to proposals for potential additional projects. NASA plans installation of combined heat and power systems at three candidate Centers, depending on the results of feasibility studies, to increase energy efficiency, reduce GHG emissions and improve energy security. NASA HQ plans to revise the Sustainable Facilities Training course this year, prior to the next Center offering, in order to incorporate new Federal guidelines and industry updates. NASA is revising NASA Procedural Requirements NPR 8831.2E, *Facilities Maintenance and Operations Management*, to update and revise applicable areas including energy and water use reduction and building commissioning to effectively and more efficiently operate and maintain its facilities. NASA is planning to have nearly 650,000 square feet of facilities meeting the Guiding Principles, including three buildings that were also certified through LEED for Existing Buildings: Operations & Maintenance, by the end of fiscal year 2014.

Successes NASA examples of successes below:

- Four buildings, with a combined size of 186,000 square feet, received LEED Gold certification.
- Two Centers hosted a multi-day training course on sustainable facilities.
- NASA Procedural Requirements, NPR 8820.2G, *Facility Project Requirements*, revision completed which includes updated sustainability requirements for the Agency.



Goal 3: Fleet Management

GOAL: Reduce petroleum use by 2% annually, compared to 2005; increase use of alternative fuels by 10% annually through FY2015



Status as of September 30, 2013	<ul style="list-style-type: none">• Reduction in fleet petroleum use since 2005 is 36.7%.• Increase in Use of Alternative Fuels in Alternative Fuel Vehicles (AFVs) and Flex-Fuel Vehicles (FFVs) since 2005 is 297%, representing 35.3% of total fleet fuel use
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Summary NASA is currently exceeding both fleet management goals. Monthly fuel consumption tracking reports allow NASA to ensure it remains on track to meet fuel goals and NASA reduced its petroleum use by 4.4% from FY 2012 to FY 2013. Over the past year, NASA reduced its fleet inventory by 4.2 percent. NASA updates its Fleet Management Plan each fiscal year to ensure actions support the Petroleum Reduction and Alternative Fuel usage goals. Continued execution of its Fleet Management Plan maintains the following objectives: a) optimize use of the vehicle fleet; b) acquire and/or adjust the size and functional utility of each vehicle to match the program’s needs and/or mission’s requirement (right sizing the vehicle fleet); and c) acquire Alternative Fuel Vehicles (AFVs), Flex Fuel Vehicles (FFVs) or Low Greenhouse Gas (GHG) emitting vehicles during “end of life cycle” replacements, for current vehicle requirements. NASA Center Transportation Officers (CTOs) manage and control all assigned vehicles and annually evaluate NASA’s vehicle fleet for both existing vehicle assignments and new requests for transportation support. In FY 2011, Vehicle Utilization Review Boards (VURBs) projected a 10% reduction in vehicle fleet assets through FY 2015, and NASA represented this projected reduction as “NASA’s 2015 optimal fleet” within the Vehicle Allocation Methodology (VAM) submitted to the General Services Administration in FY 2012. One challenge to the use of alternative-fueled vehicles is the lack of commercial infrastructure. NASA considers increasing alternative fueling infrastructure within a Center’s campus, when such infrastructure allows for increased access to alternative fuel for NASA’s mostly campus type vehicle use.

Planned Actions NASA plans to continue its VAM process of annual review by Centers to evaluate vehicle requirements for both existing and new requests. VAM reviews ensure right sizing of the NASA fleet, allowing NASA to identify end of life vehicle assets and consider opportunities for optimal AFV, FFV and low GHG replacement selections.

Successes NASA examples of successes below:

- Exceeded petroleum reduction and alternative fuel usage goals.
- Eliminated Executive Fleet large sedans.
- Reduced the Agency vehicle inventory.
- Increased the Low Speed Electric Vehicle inventory.



Goal 4: Water Use

GOAL: Reduce potable intensity (gallons/sq ft) by 2% each year, compared to 2007; reduce use for industrial, landscaping, and agricultural by 2% each year, compared to 2010



Status as of
September
30, 2013

- Reduction of potable water intensity since 2007 is 30.5%
- Reduction of water for industrial and landscaping since 2010 is 70%.

Summary NASA is well beyond the goal for potable water intensity reduction with reductions achieved thus far of 30.5% versus the goal of 26% by FY 2020. The Agency continued to implement water infrastructure upgrades, install meters, retrofit bathroom fixtures and reduce the use of landscaping water systems at multiple agency sites in FY 2013. NASA uses its annual DOE Energy/Water report, semi-annual OMB Scorecard, NETS database and results from triennial Environmental and Energy Functional Reviews and internal Baseline Performance reviews to track water use. NASA integrates water conservation into planning efforts through regularly scheduled meetings with the Center Sustainability Officers, Environmental Management Panel, Energy Efficiency Panel, the Sustainability Working Group, and the Community of Practice for Energy/Water. Centers are responsible for installing water efficient technologies in all new buildings and upgrades/maintenance of existing buildings. They conduct water conservation audits and leak detection programs and these efforts have resulted in water distribution system repairs at several Centers. NASA Centers are responsible for reducing the use of landscape irrigation to reduce water use, while considering safety (e.g., fire protection) and mission requirements. Many Centers, particularly those located in western States, already use water-efficient landscaping. NASA Centers review their current systems and deploy water closed-loop, capture, recharge, and/or reclamation systems as appropriate. Many Centers have already converted equipment to closed-loop systems and several Centers have partnered with local communities to use reclamation systems. Centers also are responsible for reviewing industrial and landscaping uses (no agricultural water uses) and installing meters where justified. Centers have some industrial and landscaping water uses, but most of this type of usage has historically been captured under potable water use. Landscaping is often associated with a building and is part of that building's water use. Some of the industrial water uses may merit separate metering and this will be evaluated. Repair of distribution systems often requires significant construction to facilities.

Planned Actions NASA Centers will continue to assess their water distribution systems, conduct leak detection audits, and replace/repair components, as appropriate, considering available resources. NASA Centers will continue to evaluate utilizing or expanding the use of water-efficient landscaping to reduce water use. For industrial water uses, NASA will continue to evaluate the need for additional metering. Centers will also continue to assess whether it is appropriate to deploy additional water closed-loop, capture, recharge, and/or reclamation systems.

Successes NASA examples of successes below:

- NASA is exceeding water intensity reduction and industrial, landscaping, and agriculture water reduction goals.
- Water infrastructure upgrades continue at many Centers.
- Eliminated one-pass cooling in one building, saving 3 million gallons/year.
- Installed a mist eliminator to a cooling tower, saving more than 500,000 gallons/year.
- Achieved 81.3% water intensity reduction at a Center through multiple actions, including: reducing duration of system flushes, monitoring freeze plan implementation, limiting geothermal well use, conducting water use audits and leak audits, installing meters, and replacing an area main water line.
- Saved 1 million gallons/year from completion of phase I of ESPP (faucet sensor and low flow restroom water closet/urinal fixtures).



Goal 5: Waste Reduction

GOAL: Divert 50% of solid waste (excluding construction and demolition debris); divert 50% of construction and demolition debris



Status as of
September
30, 2013

- Diversion of non-construction solid waste: 62%
- Diversion of construction and demolition waste: 65%

Summary NASA continued to exceed the EO diversion goals for construction and demolition debris and non-construction solid waste. Currently, the Agency tracks waste generation and disposition rates through the NASA Environmental Tracking System (NETS). Since recycling rates are the product of a complex interaction of multiple factors (e.g., maturity of the program, varying regional waste collection resources, type of commodities accepted, communication, and workforce engagement), these rates vary from Center to Center making a “one-size-fits-all” approach difficult. Successful implementation and continuous improvement of Center recycling programs depend on the Center’s flexibility to identify and to explore new waste stream opportunities as resources allow. These successes can then be modified to suit other Center’s needs and requirements (shared as best practices). NASA utilizes several avenues to support and improve solid waste diversion efforts: 1) the Recycling and Sustainable Acquisition (RSA) Principal Center provides technical resources and program implementation support for waste prevention, recycling, and sustainable acquisition; 2) a web-based collaboration tool is used to share RSA work and to organize program activities and initiatives on both individual and team levels; 3) an Environmental Management System is used to focus Center attention by employing a selection of priority aspects which are measured and evaluated on a continual basis; and 4) encouragement of the workforce is accomplished through the Agency’s Blue Marble Awards program which recognizes individuals and teams with exemplary environmental performance, including waste diversion goals.

Planned Actions NASA plans to continually improve the NETS data collection on solid waste diversion and hydrofluorocarbon (HFC) usage and expand the NASA dashboard within NETS to provide visual representation and trending analysis to identify opportunities for improvement. The Agency will continue to utilize other electronic means (e.g., paperless contracting and other internal web based systems) to streamline processes and enhance communication. Also, via the Environmental and Energy Functional Reviews, NASA will complete representative sample contract reviews of each Center to reference the use of language related to pollution prevention and solid waste diversion. The Agency will also investigate opportunities to provide additional training to environmental and procurement professionals.

Successes NASA examples of successes and pilots below:

- Currently recycling garnet and jet fuel which provides waste disposal cost savings.
- To encourage greater recycling participation, decreased the size of waste containers and increased the size of the recycling bins.
- Transitioned to single stream recycling, increasing employee participation and increasing diversion rates of non C&D solid waste. One Center program has increased non-construction and demolition diversion from 19% in FY 2012 to 69% in FY 2013.
- Based on the success of a Center pilot program - "Freecycle@NASA" - NASA implemented this program Agency-wide to encourage the reuse of office supply items (e.g., pencils, whiteboards, and notebooks).
- Custodial contract now uses a truck compactor to collect waste onsite, which allowed a Center to cut the number of dumpsters by two thirds and reduce disposal costs by 27%.
- Volunteers expanded shredded paper collection for compost in FY 2013 and initiated the Coffee-to-Compost program that expanded in FY 2014 to three drop-off stations resulting in 2,800 pounds of coffee grounds diverted from the landfill and used onsite for the Center gardens.
- Implemented paperless contracting, resulting in reductions in associated paper use and printing costs.
- Incorporating C&D waste diversion principles into day-to-day maintenance operations to increase diversion rates (e.g., concrete, scrap metal and wood recycling).



Goal 6: Sustainable Acquisition

GOAL: >95% of applicable new contract actions meet federal mandates for acquiring products that are energy efficient, water efficient, biobased, environmentally preferable, non-ozone depleting, recycled content, or are non-toxic or less toxic alternatives



Status as of
September
30, 2013

- >95% of applicable new contract actions meet federal mandates for acquiring products that are energy efficient, water efficient, biobased, environmentally preferable, non-ozone depleting, recycled content, or are non-toxic or less toxic alternatives, where these products meet performance requirements

Summary NASA currently meets the E.O. 13514 requirement that agencies ensure that 95 percent of applicable new contract actions meet federal procurement mandates for products that are energy efficient, water efficient, biobased, environmentally preferable, non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives. NASA performs semi-annual reviews of at least 5 percent of applicable new contract actions to determine if sustainable acquisition requirements are included. NASA's contracting officers examine environmental sections completed by the intended acquisition end users; NASA Centers have the option to perform additional pre-solicitation and pre-award reviews. Each Center has also investigated the potential issue of improper coding (for the Federal Procurement Data System (FPDS) database) and provided targeted training to the contracting officers who process the awards most impacted by sustainable acquisition requirements. This training covers proper inclusion of sustainability clauses/provisions in solicitations and awards, as well as proper FPDS reporting.

Planned Actions Based on changes to the Federal Acquisition Regulation (FAR), Part 23, NASA plans to complete a NASA FAR Supplement implementing policy to establish procedures to ensure appropriate FAR provisions and clauses are in solicitations and contracts, and accurately record sustainable acquisition activity in the FPDS database. NASA will also use another existing review mechanism – the comprehensive Environmental and Energy Functional Review (EEFR) conducted at each NASA Center on a 3-year cycle – to conduct additional contract reviews. NASA plans to utilize the lessons learned from these reviews to inform development of specific training tailored to ensure continual improvement at each Center. NASA will annually review 25 percent of the specifications under its control and revise them to ensure that sustainable products are included as appropriate. This number of reviews will result in 100 percent of the total specifications under NASA's control being reviewed for applicable sustainable products during a four year cycle.

Successes NASA examples of successes and pilots below:

- Completed EEFR reviews at five NASA facilities, which includes best practices for improving contract language relating to sustainable acquisition.
- Sustainable Acquisition training was provided to NASA staff through several training methods, from on-site delivery and online refresher training, to other types of Center-specific training. Participants included members of the contracting and procurement community, purchase card holders, administrative staff, engineers and construction managers, and general requisitioners.
- Several Centers are piloting paperless contracting resulting in reductions in associated paper use and printing costs.



Goal 7: Electronic Stewardship

GOAL: Procure energy-efficient equipment rated per Electronic Product Environmental Assessment Tool (EPEAT); use best practices for computer operation and disposal



Status as of
September
30, 2013

- EPEAT: 95% or more monitors and PCs/laptops purchased in FY2013 were Electronic Product Environmental Assessment Tool (EPEAT) compliant
- Power Management: 100% computers, laptops and monitors have power management enabled
- End of Life: 100% of electronics are disposed through GSA Xcess, CFL, Unicorn or a Certified Recycler

Summary NASA maintains a ‘green’ status for its Electronic Stewardship and Data Center goal, measured by: ensuring procurement preference for EPEAT-registered products; implementing policies to enable power management, duplex printing, and other energy-efficient features; employing environmentally sound practices with respect to the disposition of electronic products; procuring Energy Star and FEMP designated electronics; and implementing best management practices for data center operations. Strategic planning for data center consolidation is done at the Agency level and data center consolidation and data center power monitoring is linked to the OMB’s *25 Point Plan for Shift to a Cloud First and Develop a Strategy for Shared Services*. The data center power monitoring initiative has largely been abandoned due to budget reductions.

Challenges Several challenges remain with respect to metering data centers and measuring and achieving average data center CPU utilization percentages and power utilization effectiveness (PUE) targets (75% and 1.4, respectively). While NASA assessed its data centers in 2010 for meter placement, it has taken several years to install data center-specific meters; metering was typically done at the building level, not the room level. Other metering challenges remain, including: complexity of getting readings from chilled water feeds and isolating the energy for chilled water associated with data center room and building. Measuring average CPU utilization requires agents conducting continuous measurements rather than snapshot measurements, so NASA is able to only estimate that its supercomputing facilities and large science data production facilities operate at 65% or above. Other data centers will increase their utilization percentage as virtualization increases and more consolidation occurs. Once individual data center metering is complete, PUE measurement will be possible; however it is unlikely NASA will achieve the 1.4 PUE goal established. Buildings are old and the cost of modifications precludes making energy efficient improvements and changes that would improve PUE substantially. As NASA increases the density in data centers by consolidation and has the opportunity to implement more energy savings best practices over time, PUE will improve, but is unlikely to get below 2 in most facilities. Most investment in data center power monitoring has been abandoned due to budget reductions.

Planned Actions NASA plans to reduce to 29 data centers by the end of FY 2014 and 22 data Centers by the end of FY 2015. NASA continues to implement an enterprise contract for support of desktop services to include network printers, multifunction devices (MFDs), and other printing devices. The enterprise contract contains specific energy efficient compliance clauses. Additionally, standardized configurations are implemented to ensure energy efficient settings are managed and monitored. NASA continues to transition its office automation and end user services to this contract to ensure efficiencies in desktop services functions, costs, and compliance with federal initiatives. All NASA Enterprise IT Support and Services contracts contain clauses to ensure environmentally sound practices for disposition of all Agency excess or surplus equipment. As of May 2014, NASA achieved replacement of 95% of all office automation systems that comply with EPEAT standards and have been updated within the last 3 years. Note: Agency Consolidated End-User Services enterprise contract procured devices will be 100 percent.

Successes NASA examples of successes and pilots below:

- Using new virtual technologies to reduce the need for physical servers and replacing old servers with energy efficient models.
- Developing a life cycle analysis of direct water cooled (DWC) supercomputer hardware, which will eliminate cooling energy demand and produces heat. It could save up to \$350,000/yr in electricity and natural gas costs at one Center.



Goal 8: Renewable Energy

GOAL: For FY13 and beyond, 7.5% of agency's total electricity consumption is from renewable energy sources



Status as of
September
30, 2013

- 7.6% or 89,418 megawatt hours of NASA's total electricity consumption came from renewable energy; 4.4% is from new sources

Summary NASA successfully exceeded this fiscal year's goal of 7.5%, building on NASA's Agency-wide strategy of emphasizing identification of large projects that can make a significant difference for the Agency, rather than initiating smaller projects at each Center. More than 65% of NASA's renewable energy is from REC purchases; about 11% comes from direct purchases. NASA completed its feasibility study for a solar plant installation at one facility and is awaiting a final report from the National Renewable Energy Laboratory (NREL). Due to funding issues, NASA will install a smaller system (0.5 – 1.4 MW), pending funding availability. NASA completed a Phase 1 combined heat and power (CHP) feasibility study for another Center, which will use natural gas and landfill gas to generate electricity and steam. NASA is a member of the FEMP Renewable Energy Working Group and contributed to the development of the FEMP Playbook for Large-Scale Renewable Energy Projects. Internal NASA teams are reviewing a revised NASA Energy Management Program procedural document and associated Energy Guidance Handbook.

Challenges NASA continues to address issues relating to the lack of authority to enter into long term (10+ years) Power Purchase Agreements (PPAs) with vendors for renewable energy contracts (unless within an ESPC). In addition, an OMB policy - *'the Federal government must retain title to the installed capital goods at the conclusion of the contract'* - lessens the financial incentive of third party investors or providers to enter into ESPCs with a renewable energy component¹. NASA is working through NREL to resolve these issues. Furthermore, although NASA is successfully using several renewable energy technologies - solar thermal, geothermal, and steam generation from renewable sources – some of these renewables energies cannot be counted in the renewable energy metric because they do not generate electricity. The Energy Policy Act of 2005 requires that no less than 7.5% in FY 2013 and thereafter, of *total electricity consumed* by the Federal Government come from renewable energy. A Presidential Memorandum issued December 5, 2013 added a provision that 20% of electricity must be from renewable sources by 2020. NASA is reviewing its renewable energy policies regarding this new requirement. Unless barriers to implement on-site renewable energy generation are removed, NASA may not be able to meet the new requirements as REC costs increase and budget limitations may not permit the purchase of a sufficient number of RECs needed to meet the goal.

Planned Actions NASA will continue to work with DOE, FEMP, NREL, and other agencies to implement renewable energy projects by installing onsite renewable energy on its sites. NASA will initiate a Phase 2 feasibility study for the CHP project, which - using landfill gas supplemented with natural gas - could produce roughly 95% of electricity for the Center. Another facility continues to work on incorporating a solar project into their ESPC. NASA is considering buying RECs at the HQ level, with Centers providing funding according to their local electricity use and other renewable resources.

Successes NASA examples of successes below:

- NASA Centers are including renewable energy projects in ESPC projects to leverage high capital investment and average out long payback periods.
- One Center is using recycling funds to install a 0.4 - 0.5 MW solar system; NASA HQ is trying to add 0.5 MW to bolster the system's capacity.
- Large renewable energy projects are underway at three NASA facilities for wind (one facility) and solar (two facilities).

¹ OMB Memorandum M-12-21 dated 9/28/2012, Subject: Addendum to OMB Memorandum M-98-13 on Federal Use of Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs)



Goal 9: Climate Change Resilience

GOAL: Evaluate climate change risks to identify and manage the effects of climate change on the agency's operations and mission in both the short and long term



Status as of
September 30,
2013

- Six of NASA's coastal facilities had hosted multi-day climate adaptation workshops
- Cosponsoring/facilitating DC-area climate adaptation series with federal and non-federal neighbors.
- Quarterly Center Sustainability Officer meetings include climate adaptation progress as an agenda item
- NASA is incorporating climate change factors into its sustainable facilities design program and its master planning policies

Summary Recognizing climate risks as a potential impediment to a sustainable NASA and the importance of “walking the talk” to drive culture change, science and institutional leaders have made adapting to climate risks a focus, participating actively in workshops, advocating for applicable research, and advancing relevant policies. NASA has developed and is applying a robust local adaptation workshop process at its installations, and now has partnered with key partners in the Washington, DC area to sponsor a community-wide adaptation process. In the workshops, NASA partners with local and regional entities to help other Agencies and local communities benefit from the adaptation expertise it is developing and Center staff discuss possible adaptation strategies to address priority risks. In addition to participating in these workshops to provide data, projections, and their expertise at understanding climate, NASA's Climate Adaptation Science Investigator (CASI) team also conducts applied research and toolset development of direct benefit to institutional climate risk managers. NASA remains on the forefront of climate science, research, and computational modeling, providing vital information to the public and NASA institutional managers.

Planned Actions During FY 2014, NASA will build on the value of its adaptation workshops to reinforce early progress and extend momentum towards a more climate-resilient Agency. NASA also will continue to participate in and facilitate at least two workshops in the Washington, D.C. area. Scientists will continue making contributions to climate research and to assessments such as the National Climate Assessment and the Intergovernmental Panel on Climate Change efforts. CASI scientists will update climate projections for NASA Centers, incorporating advancements in climate models.

Successes NASA examples of successes and pilots below:

- NASA is integrating climate factors into existing management plans through the adaptation process.
- NASA has issued its first Land Management Policy, identifying flooding risk as a key vulnerability, protecting the high ground should managed retreat be advised, and limiting development in areas of greatest vulnerability.
- The Master Planning Community of Practice and Senior/Center Sustainability Officers are discussing climate design and other climate adaptation policies at regularly scheduled meetings.
- One Center is addressing its downstream stormwater runoff quality, erosion and flooding impacts - that are expected to worsen with climate change - by installing a pilot rain garden and bioretention basin; the Center is currently gaining maintenance experience with these adaptation measures to develop tools to strategically manage stormwater center-wide.
- A sea wall and expanded beach construction project and a current post-Sandy replenishment project are major steps towards climate resilience in the face of increasingly severe storms in the mid-Atlantic region.

PROGRESS ON ADMINISTRATION PRIORITIES

Climate Change Adaptation Plan NASA updated its Climate Risk Management Plan for 2014; it is attached as an Appendix. NASA has completed climate adaptation workshops at eight of its ten primary Centers and one component facility. Another Center is utilizing a modified process, following the risk identification and adaptation strategy process without a workshop. NASA's coastal facilities convened in 2013 to discuss shared vulnerabilities and possible solutions. NASA continues to make progress on capacity building and integrating climate risk management within the Agency. NASA co-sponsored and facilitated a series of webinars and workshops with local and federal stakeholders in Washington, D.C. to address climate risks to the National Capital Region. NASA also plans to explore supply chain climate risks of its strategic suppliers. NASA received no public comments on its 2013 Climate Risk Management Plan and Report.

Fleet Management Plan In accordance with Presidential Memorandum: Federal Fleet Performance (dated May 24, 2011) Federal Agencies should operate only as many fleet vehicles as needed to work efficiently, leveraging Federal purchasing dollars to build manufacturing capacity for more alternative fueled vehicles, and reducing petroleum consumption through efficiency and alternative fuels. NASA submitted its Fleet Management Plan highlighting the policies and processes to achieve the presidential guidance and metrics set forth in Executive Order 13514 as an appendix to its 2013 SSPP (<http://www.nasa.gov/agency/sustainability/sspp.html>). NASA is currently exceeding the required petroleum consumption reduction and increase in alternative fuel consumption goals. Therefore, it continues to execute its Fleet Management Plan, maintaining the following objectives: a) optimize use of the vehicle fleet; b) acquire and/or adjust the size and functional utility of each vehicle to match the program's needs and/or mission's requirement (right sizing the vehicle fleet); and c) acquire Alternative Fuel Vehicles, Flex Fuel Vehicles or Low Greenhouse Gas emitting vehicles during "end of life cycle" replacements, for the current vehicle requirements.

Energy Performance Contracts NASA pledged \$19.6 million investment value for the December 2011 Presidential Memorandum requiring the Federal Government to contract for \$2 billion of energy efficiency investments by the end of 2013. NASA became the first agency to meet its investment value pledge, and Centers awarded energy projects totaling nearly \$45.7 million investment value under Energy Savings Performance Contracts and Utility Energy Services Contracts in FY 2012 – FY 2013. NASA increased its pledge to \$73.9 million total investment value in response to the Administration's extension/expansion of the energy performance contracting goal to \$4 billion by the end of 2016. In FY 2014 - FY 2015, Centers will continue to collaborate with utility companies and energy service companies to implement the awarded projects and conduct assessments and audits leading to proposals for potential additional projects.

Biobased Purchasing Strategies Currently, elements are in place to ensure sustainable acquisition, including biobased products. The Federal Acquisition Regulations (FAR) references sustainable acquisition. NASA annually reviews and updates related specifications and also completes Center environmental reviews of contracts to ensure the inclusion of sustainable acquisition language.

Cover photos from left to right,

- **Hubble Space Telescope image of portion of the Monkey Head Nebula** - Carved knots of gas and dust are silhouetted against glowing gas. Image Credit: NASA, Hubble Heritage Team (STScI/AURA)
- **Autonomous Refueling Demonstration** - The pilot and flight test engineer were hands-off as NASA F/A-18 #845 flew itself during an autonomous refueling demonstration in 2007. Image Credit: NASA, Lori Losey
- **Orbital-1 Space Station Resupply Mission** - Orbital Sciences Corp. launched its Cygnus cargo spacecraft aboard its Antares rocket on Jan. 9, 2014, from the Mid-Atlantic Regional Spaceport Pad 0A at Wallops Flight Facility, beginning a resupply mission to the International Space Station. Image credit: NASA, Chris Perry
- **Jason-3 Satellite** - Artist's rendering of the Jason-3 satellite, scheduled to launch in 2015. This satellite will measure topography of the ocean's surface, providing scientists with critical information about circulation patterns in the ocean and about both global and regional changes in sea level and the climate implications of a warming world. Image credit: NASA/JPL-Caltech

Size & Scope of Agency Operations

Table 1: Agency Size & Scope

Agency Size and Scope	FY 2012	FY 2013
Total Number of Employees as Reported in the President's Budget	18,216	17,964
Total Acres of Land Managed	329,395	329,395
Total Number of Buildings Owned	2,370	2,427
Total Number of Buildings Leased (GSA and Non-GSA Lease)	16	13
Total Building Gross Square Feet (GSF)	46,992,591	46,741,087
Operates in Number of Locations Throughout U.S.	42	42
Operates in Number of Locations Outside of U.S.	14	14
Total Number of Fleet Vehicles Owned	911	913
Total Number of Fleet Vehicles Leased	2,365	2,226
Total Number of Exempted-Fleet Vehicles (Tactical, Law Enforcement, Emergency, Etc.)	112	115
Total Amount Contracts Awarded as Reported in FPDS (\$Millions)	1,291.2	1,281.3

Evaluating Previous Year Strategies

Evaluation of the strategies implemented for the nine goals represented in NASA's 2013 SSPP are contained in the tables below. Two of the four columns provided in the Council on Environmental Quality template (CEQ) are represented - the strategies implemented last year (A) and whether and how the strategy will be used again (D). Columns (B) "Did you implement this strategy?" and (C) "Was the strategy successful for you?" are not shown; the answer is "Yes" for every goal strategy.

Goal 1: Greenhouse Gas (GHG) Reduction – Scope 1 & 2	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Use the FEMP GHG emission report to identify/target high emission categories and implement specific actions to resolve high emission areas identified.	Yes. 1) NASA will continue to implement energy efficiency and alternative energy projects. 2) To address fugitive emission reductions, NASA will continue a detailed analysis of the types and uses of HFC while working towards strategic partnerships with other Agencies to form better strategies for reducing HFC emissions.
Ensure that all major renovations and new building designs are 30% more efficient than applicable code.	Yes. 1) NASA will continue to implement 30% more energy efficient designs for new construction and major renovations. 2) NASA will utilize data in the NETS database to allow a more quantitative understanding of the resulting GHG reductions and other related impacts.
Reduce on-site fossil-fuel consumption by installing more efficient boilers, generators, furnaces, etc. and/or use renewable fuels.	Yes. 1) NASA hopes to implement cogeneration (CHP) using landfill gas for energy/steam generation at a Center. 2) NASA will continue to work with other agencies to create volume discount incentives for increased renewable energy purchases.
Reduce grid-supplied electricity consumption by improving/upgrading motors, boilers, HVAC, chillers, compressors, lighting, etc.	Yes. 1) NASA is planning to include solar installations in two ESPCs and continues to evaluate potential locations to utilize wind power. 2) NASA will continue to engage in collaborative efforts with other Agencies, researching long-term contract options that incentivize renewable energy implementation.
Install building utility meters and benchmark performance to track energy and continuously optimize performance.	Yes. 1) Having installed meters at all Centers, NASA will use building level data to refine analytical capabilities for energy usage and resulting GHG emissions. 2) NASA will use this more granular data to identify and prioritize potential GHG emission reduction opportunities involving both electricity and natural gas consumption.
Goal 1: Greenhouse Gas (GHG) Reduction – Scope 3	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Reduce employee business ground travel.	Yes. 1) Will continue to look for alternative metrics for measuring success other than reduced emissions through the Workplace Strategies working group. 2) Will also look at additional information sources, if available.
Reduce employee business air travel.	Yes. 1) Will continue to look for alternative metrics for measuring success other than reduced emissions through the Workplace Strategies working group. 2) Will also look at additional information sources, if available.
Use employee commuting survey to identify opportunities and strategies for reducing commuter emissions.	Yes. 1) Continue to assist with more detailed analysis at additional Centers regarding commuting incentives and strategies. 2) Will perform a more detailed review of the Agency-wide dataset, including producing statistical data to prepare for the next survey.
Increase number of employees eligible for telework and/or the total number of days teleworked.	Yes. 1) Continue to utilize Workplace Strategies meetings and discuss with Centers their successes and challenges related to initial testing activities. 2) During the biennial commuter survey process, engage NASA HR more thoroughly and directly to improve strategies.
Provide bicycle commuting infrastructure.	Yes. 1) NASA will continue to add new projects in a steady and long-term fashion to increase bicycle infrastructure, eventually moving beyond the pilot phase. 2) NASA HQ may be able to assess participation rates in the DC Capital Bikeshare program.

Goal 2: Sustainable Buildings	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Incorporate green building specifications into all new construction and major renovation projects.	Yes. Directs the Agency to meet federal goals while allowing Centers to follow a single set of requirements.
Redesign or lease interior space to reduce energy use by daylighting, space optimization, sensors/control system installation, etc.	Yes. Allows the Agency to meet federal goals.
Deploy CEQ's Implementing Instructions – Sustainable Locations for Federal Facilities.	Yes. NASA's Handbook for Master Planning was issued in May 2013 with specific reference to sustainable site development and stewardship practices. While master planning isn't judged on an annual timetable, by collaborating in its development, NASA's master planning community of practice broadens the coalition that enables sustainability.
Include in every construction contract all applicable sustainable acquisition requirements for recycled, biobased, energy efficient, and environmentally preferable products.	Yes. Directs the Agency to meet federal goals while allowing Centers to follow a single set of requirements.
Develop own system of assessing, addressing, documenting and certifying Existing Buildings as meeting the Guiding Principles.	Yes. NASA has developed and will continue to use a Commissioning Handbook that surveys designers, constructors, maintainers, and users to determine beneficial and disadvantageous methods of new facilities to develop best practices and lessons learned for future facilities.
Goal 3: Fleet Management	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Optimize/Right-size the composition of the fleet (e.g., reduce vehicle size, eliminate underutilized vehicles, acquire and locate vehicles to match local fuel infrastructure).	Yes. During life cycle replacement, vehicle assets are right-sized to match current program requirements.
Acquire only highly fuel-efficient, low greenhouse gas-emitting vehicles and alternative fuel vehicles (AFVs).	Yes. During life cycle replacement, vehicle assets are acquired to ensure the highest percentage possible of LGHG models are obtained.
Increase utilization of alternative fuel in dual-fuel vehicles	Yes. NASA will continue to utilize DOE's FleetDash Board to identify Missed Opportunities related to AF acquisitions.
Use a Fleet Management Information System to track fuel consumption throughout the year for agency-owned, GSA-leased, and commercially-leased vehicles.	Yes. NASA is developing a FMIS to be fully operational by end of FY 2014.
Increase GSA leased vehicles and decrease agency-owned fleet vehicles, when cost effective.	Yes. NASA conducts life cycle cost reviews to acquire only the most cost effective vehicle assets.

Goal 4: Water Use Efficiency & Management	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Purchase and install water efficient technologies (e.g., Waterwise, low-flow water fixtures and aeration devices).	Yes. NASA Centers are responsible for purchase and installation of water efficient technologies for new buildings and during upgrades and maintenance of existing buildings. NASA HQs will monitor for continual improvement.
Develop and deploy operational controls for leak detection including a distribution system audit, leak detection, and repair programs.	Yes. NASA Centers are responsible for utilizing water-efficient landscaping to reduce water use, while considering safety (e.g., fire protection) and mission requirements. NASA HQs will monitor for continual improvement.
Minimize outdoor water use and use alternative water sources as much as possible.	Yes. NASA Centers are responsible for reducing the use of landscape irrigation to reduce water use, while considering safety (e.g., fire protection) and mission requirements. NASA HQs will monitor for continual improvement.
Design and deploy water closed-loop, capture, recharge, and/or reclamation systems.	Yes. NASA Centers are responsible for reviewing their current systems and deploying water closed-loop capture, recharge, and/or reclamation systems. NASA HQs will monitor for continual improvement.
Install advanced meters to measure and monitor (1) potable and (2) industrial, landscaping, and agricultural water use.	Yes. NASA Centers are responsible for installing meters to measure and monitor potable and industrial water use where the activity justifies metering. NASA Centers have no agricultural water use. NASA HQs will monitor for continual improvement.
Goal 5: Pollution Prevention & Waste Reduction	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Reduce waste generation through elimination, source reduction, and recycling.	Yes. NASA will continue to utilize two tools found to be successful. 1) Agency Award program (Blue Marble) provides recognition to those Centers which demonstrate excellence in solid waste diversion practices which may be replicated at other Centers. In turn, this helps to maintain and/or increase the Agency's overall solid waste diversion rate. 2) NASA recently implemented Sustainable tracking Tool for Automated Recycling (STAR) which is an on-line program that increases recycling by allowing individuals more opportunities to engage in the actual recycling process.
Establish a tracking and reporting system for construction and demolition debris elimination	Yes. NASA will continue to perform continual maintenance, annual data call, review of Center data (data review and analysis), and reporting. An enhanced dashboard will continue being used at Agency and Center level.
Include within the existing Environmental and Energy Functional Reviews (EEFR's) contract reviews to ensure appropriate solid waste reduction language.	Yes. Complete EEFR reviews at GRC, PBS, MSFC, JSC, JPL/Goldstone. Reviews will also include best practices for improving contract language relating to the reduction of solid waste.
Maintain and improve Agency Internal Website for Recycling and Sustainable (RSA) Acquisition Community of Practice.	Yes. Centers will continue use of RSA website for related resources, program updates, training, contract language, and link to GSA Green Procurement Compilation (GPC) guideline.
Host Webinar based training sessions for Agency environmental and procurement professionals.	Yes. Complete 6 sessions for Agency/Center updates, RSA related training.

Goal 6: Sustainable Acquisition	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Update and deploy agency procurement policies and programs to ensure that federally-mandated designated sustainable products are included in all relevant procurements and services.	Yes. Policy will be updated if new Federal acquisition regulations are issued.
Include biobased and other FAR sustainability clauses in all applicable construction and other relevant service contracts.	Yes. Various Centers will continue to provide Contracting Officer training.
Review and update agency specifications to include and encourage biobased and other designated green products to enable meeting sustainable acquisition goals.	Yes. Annually 25% of NASA controlled specifications are updated.
Use Federal Strategic Sourcing Initiatives, such as Blanket Purchase Agreements (BPAs) for office products and imaging equipment, which include sustainable acquisition requirements.	Yes. Some Centers will continue use of Federal Strategic Sourcing Initiative for office products. NASA strategic sourcing contracts include applicable FAR Part 23 requirements.
Complete representative sample of contract reviews for biobased and FAR sustainability requirements during selected Center Environmental & Energy Functional Reviews (EEFRs).	Yes. Complete EEFR reviews at GRC, PBS, MSFC, JSC, JPL/Goldstone which validates Center input to the 6 month OMB scorecard review. Reviews also include best practices for improving contract language relating to sustainable acquisition.
Goal 7: Electronic Stewardship & Data Centers	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Identify agency “Core” and “Non-Core” Data.	No. Implementation is complete.
Consolidate 40% of agency non-core data centers.	Yes. This will continue until the Data Center Consolidation Plan established in 2011 has been fully executed.
Ensure that power management, duplex printing, and other energy efficiency or environmentally preferable options and features are enabled on all eligible electronics and monitor compliance.	Yes. The strategy associated with defaulting IT devices to power management and EPEAT optimizing functions is now implemented in standard operating procedures for the Agency’s desktop computing outsourcing contract.
Update and deploy policies to use environmentally sound practices for disposition of all agency excess or surplus electronic products, including use of certified eSteward and/or R2 electronic recyclers, and monitor compliance.	Yes. NASA continues to use eSteward and R2 electronic recyclers.
Ensure acquisition of 95% EPEAT registered and 100% of ENERGY STAR qualified and FEMP designated electronic office products.	Yes. As per our Desktop outsourcing contract all acquired systems are EPEAT and Energy Star qualified. As per FAR Clause 52.223-15, Energy Efficiency in Energy-Consuming Products (Dec 2007) (42 U.S.C. 8259b).

Goal 8: Renewable Energy	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
Purchase renewable energy directly or through Renewable Energy Credits (RECs).	Yes. NASA plans to purchase about 10% of RE directly and 60% in RECs to meet RE requirements.
Install onsite renewable energy on federal sites.	Yes. NASA will continue to work on-site renewable projects. Currently local and federal issues are being addressed with ongoing projects.
Lease land for renewable energy infrastructure.	Yes. NASA will continue current efforts and look for new opportunities to lease NASA land for renewable infrastructure.
Utilize performance contracting methodologies for implementing ECMs and increasing renewable energy.	Yes. NASA is currently working on two ESPCs for implementing ECMs that include solar projects.
[NASA]: Determine feasibility of Combined Heat & Power (CHP) generation facility on federal sites.	Yes. 1) Initiated CHP project through ESPC contract. Awaiting IGA estimates. 2) Completed Level 1 feasibility study with EPA for CHP opportunity with landfill gas for energy/steam generation.
Goal 9: Climate Change Resilience	
(A) Strategy	(D) Will you use this strategy again next year? (Explain in 1-2 sentences)
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.	Yes. NASA continues to share science and process expertise with federal and non-federal neighbors.
Update agency emergency response procedures and protocols to account for projected climate change, including extreme weather events.	Yes. Emergency readiness and resilience is area of focus of workshops.
Ensure agency principals demonstrate commitment to adaptation efforts through internal communications and policies.	Yes. Science and institutional leaders remain active leaders in planning, preparing for, and conducting adaptation workshops. Have provided our policy to federal peers as potential model/best practice.
Ensure that agency climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary.	Yes. Continue making contributions to climate research and assessments and update climate projections for NASA Centers.
Design and construct new or modify/manage existing agency facilities and/or infrastructure to account for the potential impacts of projected climate change.	Yes. Establish adaptive design standards working group and update capital investment requirements (NPR 8820, Facility Project).

GOAL PROGRESS & STRATEGIES

NASA tracks progress and strategies for 10 goals, with the addition of new Goal 10 - Energy Performance Contracts – in this year’s SSPP. The following sections highlight NASA’s progress to date and list the goal strategies it has chosen to implement during government fiscal year 2014.

Goal 1: Greenhouse Gas (GHG) Reduction	Figure 1-1: Progress toward Scope 1 & 2 GHG Goals Table 1-1: Goal 1 Strategies - Scope 1 & 2 GHG Goals Figure 1-2: Progress toward Scope 3 GHG Goal Table 1-2: Goal 1 Strategies - Scope 3 GHG Goal
Goal 2: Sustainable Buildings	Figure 2-1: Progress toward Facility Energy Intensity Reduction Goal Figure 2-2: Progress toward Total Buildings Meeting Guiding Principles Table 2: Goal 2 Strategies – Sustainable Buildings
Goal 3: Fleet Management	Figure 3-1: Progress toward Fleet Petroleum Use Reduction Goal Figure 3-2: Progress toward Fleet Alternative Fuel Consumption Goal Table 3: Goal 3 Strategies – Fleet Management
Goal 4: Water Use Efficiency & Management	Figure 4-1: Progress toward Potable Water Intensity Reduction Goal Table 4: Goal 4 Strategies – Water Use Efficiency & Management
Goal 5: Pollution Prevention & Waste Reduction	Progress toward Pollution Prevention & Waste Reduction Table 5: Goal 5 Strategies – Pollution Prevention & Waste Reduction
Goal 6: Sustainable Acquisition	Figure 6-1: Progress toward Sustainable Acquisition Goal Table 6: Goal 6 Strategies – Sustainable Acquisition
Goal 7: Electronic Stewardship & Data Centers	Figure 7-1: Progress toward EPEAT, Power Management & End of Life Goals Table 7: Goal 7 Strategies – Electronic Stewardship & Data Centers
Goal 8: Renewable Energy	Figure 8-1: Renewable Energy Percentage of Total Electricity Usage Table 8: Goal 8 Strategies – Renewable Energy
Goal 9: Climate Change Resilience	Table 9: Goal 9 Strategies – Climate Change Resilience
Goal 10: Energy Performance Contracts	Figure 10-1: Progress in Meeting President’s Performance Contracting Challenge (PPCC) Goal Table 10: Goal 10 Strategies – Energy Performance Contracting

GOAL 1: GREENHOUSE GAS (GHG) REDUCTION

Progress toward Scope 1 & 2 GHG Goal

E.O. 13514 requires each agency establish a Scope 1 & 2 GHG emission reduction target to be achieved by FY 2020. The red bar represents the agency's FY 2008 baseline. The green bar represents the FY 2020 target reduction. The blue bars represent annual agency progress towards achieving this target. The percentage at the top of each bar represents the reduction or increase from the FY 2008 baseline. A negative percentage value indicates that the emissions have decreased compared to the 2008 baseline.

Figure 1-1

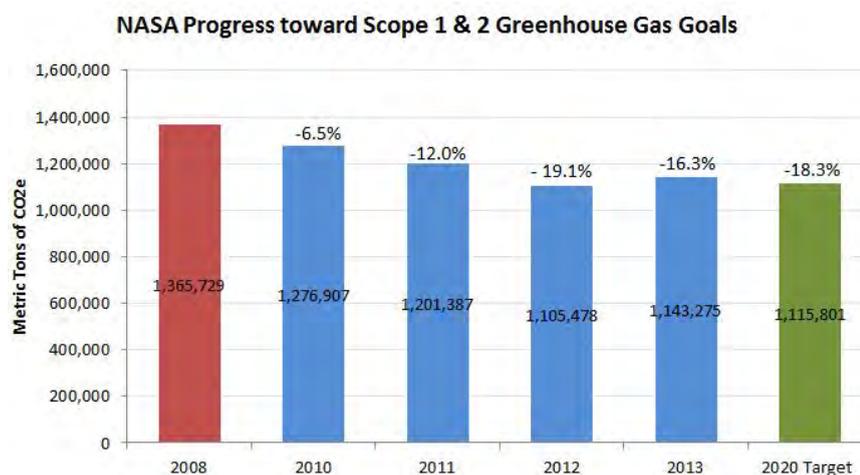


Table 1-1: Goal 1 Strategies – Scope 1 & 2 GHG Reductions

Please note: Strategies in Column A are those provided by CEQ (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Use the FEMP GHG emission report to identify/target high emission categories and implement specific actions to resolve high emission areas identified.	Yes	NASA will evaluate the FEMP GHG emission report annually to determine the top 3 emission categories and investigate alternatives for implementation. NASA will also continue to implement energy efficiency and alternative energy projects.	1) Evaluation of FEMP GHG emission report and alternatives completed in 12 months. 2) To address fugitive emission reductions, continue the more detailed analysis of the types and uses of HFC while working towards strategic partnerships with other Agencies to form better strategies for reducing HFCs.
Ensure that all major renovations and new building designs are 30% more efficient than applicable code.	Yes	Continue efforts on current or planned broad-based facility improvements across the full facilities lifecycle, and measure results using recorded 12-month energy data in NETS.	Leverage parallel GHG emissions reduction opportunities driven by facility improvement programs, including LEED accreditation efforts.
Implement in EISA 432 covered facilities all lifecycle cost effective ECMs identified.	No	NASA is currently on the path to achieving the target through existing means and does not see the need to utilize this strategy at this time.	

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Reduce on-site fossil-fuel consumption by installing more efficient boilers, generators, furnaces, etc. and/or use renewable fuels.	Yes	Favor high efficiency and renewable fuel optioned equipment purchases, as well as investigate larger Center-level and Agency-wide opportunities to implement energy efficiency or renewable energy programs.	1) Evaluate the purchase of equipment that offers a renewable fuel use option when available. 2) Investigate potential Center CHP capabilities and Agency-wide volume discount purchases for renewable energy.
Reduce grid-supplied electricity consumption by improving/upgrading motors, boilers, HVAC, chillers, compressors, lighting, etc.	Yes	Favor high efficiency and renewable fuel optioned equipment purchases, as well as investigate larger Center-level and Agency-wide opportunities to implement energy efficiency or renewable energy programs.	1) Evaluate the purchase of equipment that offers a renewable fuel use option when available. 2) Investigate potential Center-level solar and wind capabilities, as well as ESPC and other contract options that incentivize renewable energy opportunities
Employ operations and management best practices for energy consuming and emission generating equipment.	No	NASA is currently on the path to achieving the target through existing means and does not see the need to utilize this strategy at this time.	
Install building utility meters and benchmark performance to track energy and continuously optimize performance.	Yes	Utilize NETS meter-level data tracking and benchmark building performance using Energy Portfolio Manager to reduce GHG intensity.	1) Align NETS energy metering capabilities and benchmarking with GHG reduction strategies. 2) Enable more detailed analysis of high priority GHG emission sources at the building level using available NETS data.

Progress toward Scope 3 GHG Goal

E.O. 13514 requires each agency establish a Scope 3 GHG emission reduction target to be achieved by FY 2020. The red bar represents the agency’s FY 2008 baseline. The green bar represents the FY 2020 reduction target. The blue bars represent annual agency progress on achieving this target. The percentage at the top of each bar represents the reduction or increase from the FY 2008 baseline. A negative percentage value indicates that the emissions have decreased compared to the FY 2008 baseline.

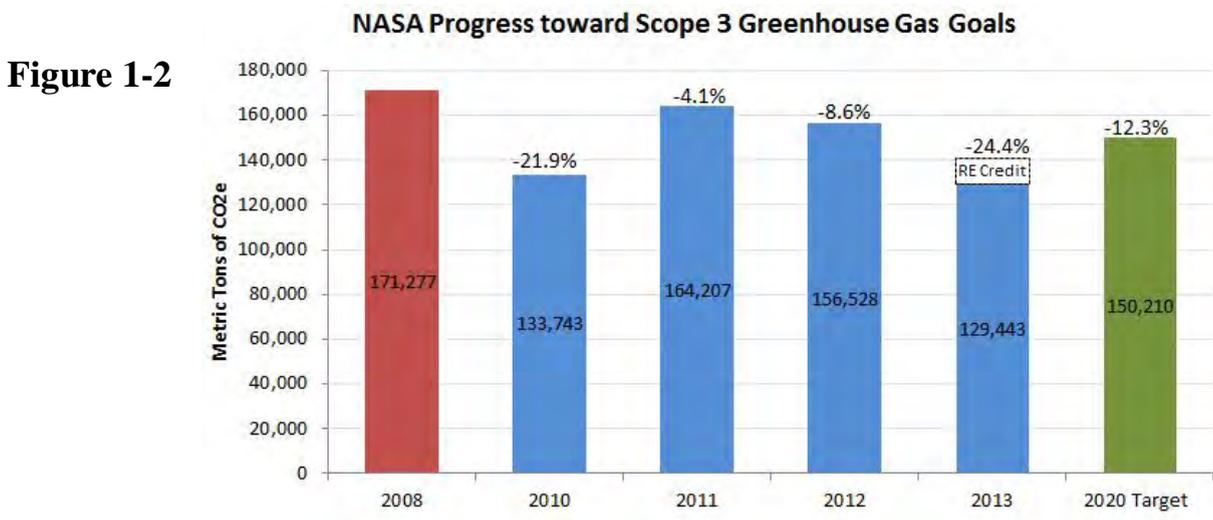


Table 1-2: Goal 1 Strategies – Scope 3 GHG Reductions

Please note: Strategies in Column A are those provided by CEO (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Reduce employee business ground travel.	Yes	1) Reductions will be implemented through telework and remote meetings. 2) Will continue to look for alternative metrics for measuring success other than reduced emissions through the Workplace Strategies working group.	1) Current success metric is emissions in the FEMP Portal. 2) Identifying potential new metrics through Workplace Strategies working group and will also look at addition information sources, as available.
Reduce employee business air travel.	Yes	1) Reductions will be implemented through telework and remote meetings. 2) Will continue to look for alternative metrics for measuring success other than reduced emissions through the Workplace Strategies working group.	1) Current success metric is emissions in the FEMP Portal. 2) Identifying potential new metrics through Workplace Strategies working group and will also look at addition information sources, as available.
Develop and deploy employee commuter reduction plan.	No	NASA is currently on the path to achieving the target through existing means and does not see the need to specifically identify this strategy at this time.	
Use employee commuting survey to identify opportunities and strategies for reducing commuter emissions.	Yes	1) Continue to assist with more detailed analysis at additional Centers regarding commuting incentives and strategies. 2) Continue to determine potential Center level opportunities and strategies in keeping with individual Center needs or limitations.	1) Will perform a more detailed review of the Agency-wide dataset, including producing statistical data to prepare for the next survey. 2) During the biennial commuter survey process, engage NASA HR more thoroughly and directly to improve strategies.
Increase number of employees eligible for telework and/or the total number of days teleworked.	Yes	1) Engage with Human Resources and other NASA policy experts to identify opportunities for increased telework. 2) Utilize Workplace Strategies working group meetings to increase awareness and participation.	1) Discuss with Centers their successes and challenges related to initial testing activities. 2) During the biennial commuter survey process, engage NASA HR more thoroughly and directly to improve strategies.
Develop and implement bicycle commuter program.	No	NASA is currently on the path to achieving the target through existing means and does not see the need to specifically identify this strategy at this time.	

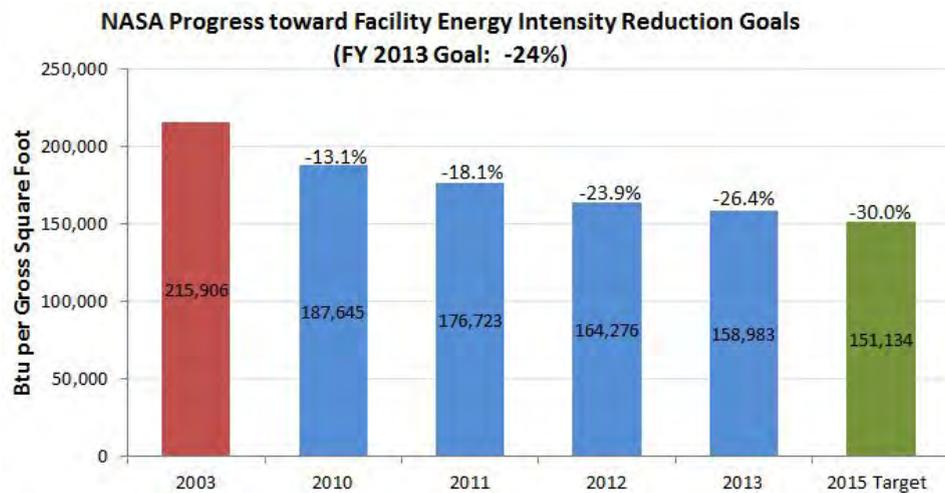
(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Provide bicycle commuting infrastructure.	Yes	NASA will continue to add new projects in a steady and long-term program to increase bicycle infrastructure, eventually moving beyond the pilot phase.	1) NASA will highlight in its quarterly meetings with Center Sustainability Officers the opportunity to reduce GHGs through bicycle infrastructure. Concept is also included in NASA's Sustainable Facilities training course. 2) NASA HQ may be able to assess participation rates in the DC Capital Bikeshare program.

GOAL 2: SUSTAINABLE BUILDINGS

Progress toward Facility Energy Intensity Reduction Goal

E.O. 13514 Section 2 requires that agencies consider building energy intensity reductions. Further, the Energy Independence and Security Act of 2007 (EISA) requires each agency to reduce energy intensity 30 percent by FY 2015 as compared to the FY 2003 baseline. Agencies are expected to reduce energy intensity by 3 percent annually to meet the goal. The red bar represents the agency's FY 2003 baseline. The green bar represents the FY 2015 target reduction. The blue bars show annual agency progress on achieving this target. The percentage at the top of each bar represents the reduction or increase from the FY 2003 baseline. A negative percentage value indicates that the energy intensity has decreased compared to the FY 2003 baseline.

Figure 2-1



Progress toward Total Buildings Meeting the Guiding Principles

E.O. 13514 requires that by FY 2015, 15 percent of agencies' new, existing, and leased buildings greater than 5,000 square feet meet the Guiding Principles. In order to meet the FY 2015 goal, agencies should have increased the percentage of conforming buildings by approximately 2 percent annually from their FY 2007 baseline. The green bar represents the FY 2015 target. The blue bars represent annual agency progress on achieving this target.

With the addition of another 186,000 square feet meeting the Five Guiding Principles in FY 2013, NASA achieved 14.2% of its inventory meeting the Five Guiding Principles when measured by gross square feet.

Figure 2-2

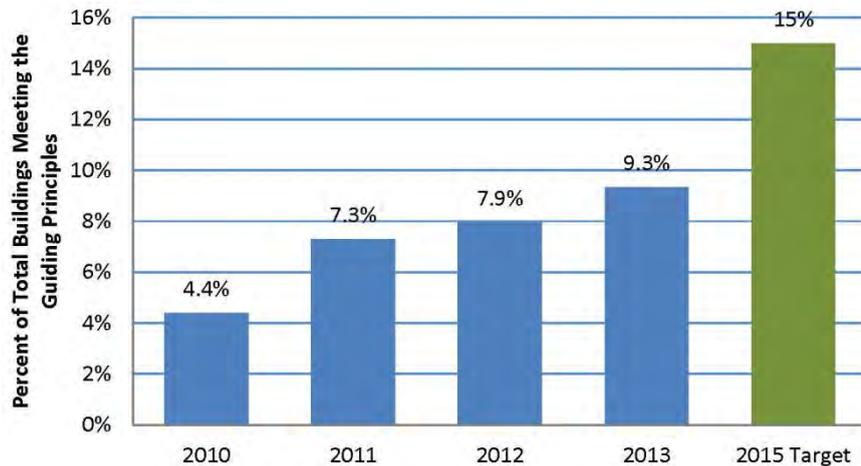


Table 2: Goal 2 Strategies – Sustainable Buildings

Please note: Strategies in Column A are those provided by CEQ (some new in 2014), unless otherwise noted.

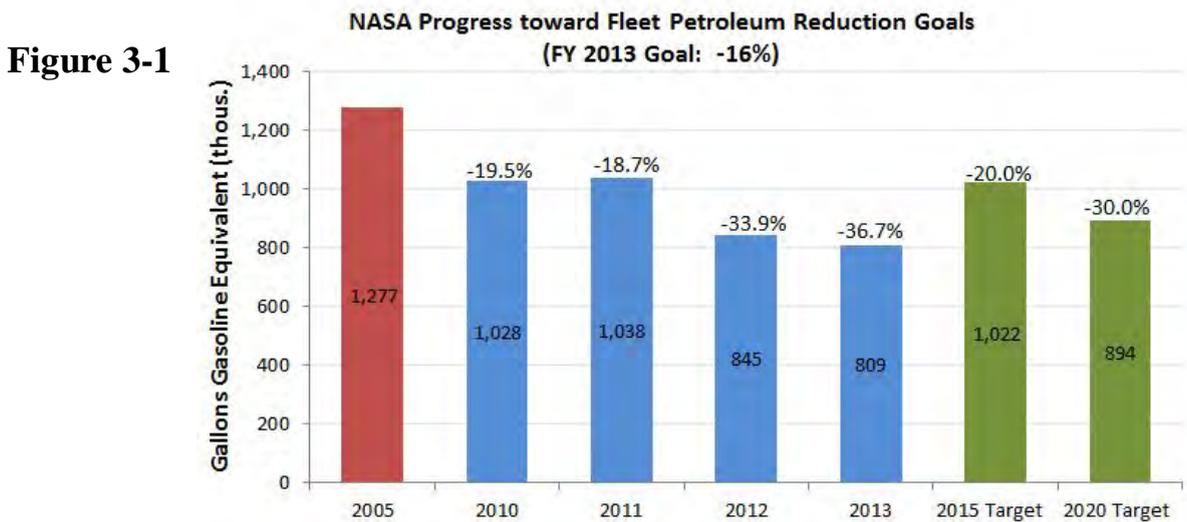
(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Incorporate green building specifications into all new construction and major renovation projects.	Yes	NASA continues to apply Agency sustainable building policies for all new construction and major renovation projects, with updated policy most recently issued in 2012 and calendar year 2014.	Increase the percentage of conforming buildings by approximately 2 percent in next 12 months from the FY 2007 baseline and meet the 2015 EO target.
Redesign or lease interior space to reduce energy use by daylighting, space optimization, sensors/control system installation, etc.	Yes	NASA will continue to utilize this strategy and is meeting, at minimum, energy reduction goals as directed by EISA 2007.	Continue to show agency progress on achieving this target of reducing energy intensity by 3 percent in next 12 months.
Deploy CEQ's Implementing Instructions – Sustainable Locations for Federal Facilities.	Yes	The Agency evaluates Center Master Plan updates according to internal regulations and its <i>NASA Handbook for Master Planning</i> , incorporating the principles outlined in the Implementing Instructions.	Review master plan updates to ensure conformance with the recent policy updates that highlight sustainability principles.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Include in every construction contract all applicable sustainable acquisition requirements for recycled, biobased, energy efficient, and environmentally preferable products.	Yes	NASA applies a multi-disciplinary approach to advancing its sustainable facilities design program in every new construction and major renovation project.	Continue to show agency progress by increasing the percentage of conforming sustainable building materials used.
Develop and deploy energy and sustainability training for all facility and energy managers.	Yes	Sustainable Facilities training course continues to be refined and updated after each course offering to meet emerging sustainable practices and strategies.	Training course will undergo a revision to further develop methods used through Green Building Initiative and ASHRAE standards.

GOAL 3: FLEET MANAGEMENT

Progress toward Fleet Petroleum Use Reduction Goal

E.O. 13514 and the Energy Independence and Security Act of 2007 (EISA) require that by FY 2015 agencies reduce fleet petroleum use by 20 percent compared to a FY 2005 baseline. Agencies are expected to achieve at least a 2 percent annual reduction and a 30 percent reduction is required by FY 2020. The red bar represents the agency’s FY 2005 baseline. The green bars represent the FY 2015 and FY 2020 target reductions. The blue bars represent annual agency progress on achieving these targets. The percentage at the top of each bar represents the reduction or increase from the FY 2005 baseline. A negative percentage indicates a decrease in fleet petroleum use.



Progress toward Fleet Alternative Fuel Consumption Goal

E.O. 13423 requires that agencies increase total alternative fuel consumption by 10 percent annually from the prior year starting in FY 2005. By FY 2015, agencies must increase alternative fuel use by 159.4 percent, relative to FY 2005. The red bar represents the agency’s FY 2005 baseline. The green bar represents the FY 2015 target. The blue bars represent annual agency progress on achieving this target. The percentage at the top of each bar represents the reduction or increase from the FY 2005 baseline. A positive percentage indicates an increase in fleet alternative fuel use.

Figure 3-2

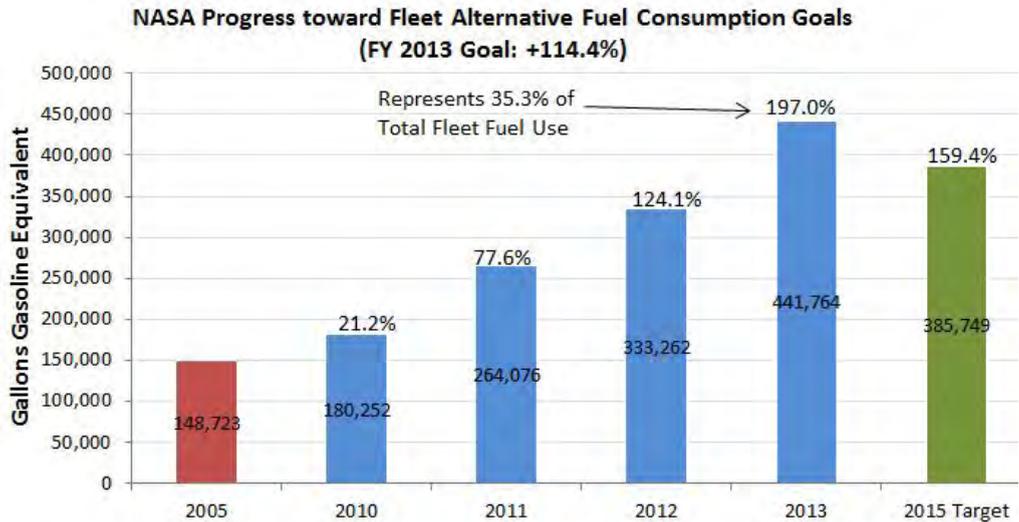


Table 3: Goal 3 Strategies – Fleet Management

Please note: Strategies in Column A are those provided by CEQ (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Optimize/Right-size the composition of the fleet (e.g., reduce vehicle size, eliminate underutilized vehicles, acquire and locate vehicles to match local fuel infrastructure).	Yes	Each NASA Center conducts annual reviews of fleet vehicle utilization during the third quarter of the fiscal year. The reviews identify individual vehicles which fail to meet minimum utilization goals and then recommend actions to relocate, resize or disposition the subject vehicle(s).	Increase Alternative Fuel usage and reduce Petroleum usage to meet E.O. goals for FY 2015.
Reduce miles traveled (e.g., share vehicles, improve routing with telematics, eliminate trips, improve scheduling, use shuttles, etc.).	No	Not among the top five strategies selected by NASA.	
Acquire only highly fuel- efficient, low greenhouse gas-emitting vehicles and alternative fuel vehicles (AFVs).	Yes	NASA policies require the provisions of the Energy Policy Act (EPAct) of 1992 and 2005, Energy Independent & Security Act 2007 and E.O.s 13423 and 13514 be enforced when identifying proper vehicle acquisitions.	Increase Alternative Fuel usage and reduce Petroleum usage to meet E.O. goals for FY 2015.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Increase utilization of alternative fuel in dual-fuel vehicles.	Yes	NASA considers increasing alternative fueling infrastructure within a Center's campus, when such infrastructure allows for increased access to alternative fuel for NASA's mostly campus type vehicle use.	Increase Alternative Fuel usage and reduce Petroleum usage to meet E.O. goals for FY 2015.
Use a Fleet Management Information System to track fuel consumption throughout the year for agency-owned, GSA-leased, and commercially-leased vehicles.	Yes	Monthly fuel consumption tracking reports allow NASA to ensure it remains on track to meet fuel consumption goals. However, no single fleet management system allows for total fueling data; tracking requires use of multiple systems in concert to track entire fleet fueling activity.	Increase Alternative Fuel usage and reduce Petroleum usage to meet E.O. goals for FY 2015.
Increase GSA leased vehicles and decrease agency-owned fleet vehicles, when cost effective.	Yes	Please see strategies noted in NASA's 2013 SSPP Appendix 2: Fleet Management Plan (http://www.nasa.gov/agency/sustainability/sspp.html)	Increase Alternative Fuel usage and reduce Petroleum usage to meet E.O. goals for FY 2015.

GOAL 4: WATER USE EFFICIENCY & MANAGEMENT

Progress toward Potable Water Intensity Reduction Goal

E.O. 13514 requires agencies to reduce potable water intensity by 2 percent annually through FY 2020 compared to an FY 2007 baseline. A 16 percent reduction is required by FY 2015 and a 26 percent reduction is required by FY 2020. The red bar represents the agency's FY 2007 baseline. The green bars represent the FY 2015 and FY 2020 target reductions. The blue bars represent annual agency progress on achieving these targets. The percentage at the top of each bar represents the reduction or increase from the FY 2007 baseline. A negative percentage value indicates that potable water use intensity has decreased compared to the FY 2007 baseline.

Figure 4-1

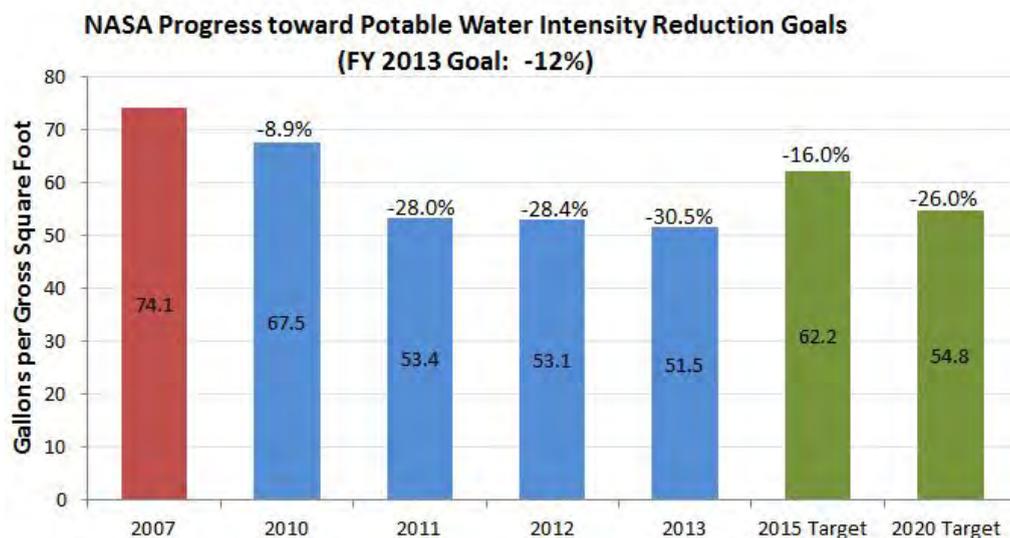


Table 4: Goal 4 Strategies – Water Use Efficiency & Management

Please note: Strategies in Column A are those provided by CEQ (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Purchase and install high efficiency technologies (e.g., WaterSense).	Yes	NASA Centers are responsible for purchase and installation of water efficient technologies for new buildings, and during upgrades and maintenance of existing buildings. NASA Centers have built numerous LEED certified buildings and also installed many water efficient fixtures during building upgrades and maintenance projects. These efforts will continue with available resources.	Since NASA is meeting its water goals, NASA HQs will monitor for continual improvement through the Annual Energy/Water Report, NETS data base, and the triennial Environmental and Energy Functional Reviews (4-5 Centers/year).
[New in 2014] Prepare and implement a water asset management plan to maintain desired level of service at lowest life cycle cost (for best practices from the EPA, go to http://go.usa.gov/KvbF)	No	NASA Centers are already required to develop a management plan for both energy and water. These plans address overall strategy, the needs of Center programs, the budget process, and organizational roles and responsibilities. The plans are reviewed during the triennial Environmental and Energy Functional Reviews (4-5 Centers/year). Since NASA is meeting its water goals, we do not believe an additional plan is needed.	
Minimize outdoor water use and use alternative water sources as much as possible.	Yes	NASA Centers are responsible for reducing the use of landscape irrigation to reduce water use, while considering safety (e.g., fire protection) and mission requirements. Many Centers, particularly those located in western states, are already utilizing water efficient landscaping.	Since NASA is meeting its water goals, NASA HQs will monitor for continual improvement through the Annual Energy/Water Report, NETS data base, and the triennial Environmental and Energy Functional Reviews (4-5 Centers/year).
Design and deploy water closed-loop, capture, recharge, and/or reclamation systems.	Yes	NASA Centers are responsible for reviewing their current systems and deploying water closed-loop, capture, recharge, and/or reclamation systems as appropriate. Many Centers have converted equipment to closed-loop systems. A couple of Centers have partnered with local communities to utilize reclamation systems.	Since NASA is meeting its water goals, NASA HQs will monitor for continual improvement through the Annual Energy/Water Report, NETS data base, and the triennial Environmental and Energy Functional Reviews (4-5 Centers/year).

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Install advanced meters to measure and monitor (1) potable and (2) industrial, landscaping and agricultural water use.	Yes	NASA Centers are responsible for installing meters to measure and monitor potable and industrial and landscaping water use where the activity justifies metering. NASA Centers have no agricultural water use. The Centers have some industrial and landscaping water uses, but most of this type of usage has historically been captured under potable water use. Landscaping is often associated with a building and would be part of that building's water use. Some of the industrial water uses may merit separate metering and this will be evaluated.	Since NASA is meeting its water goals, NASA HQs will monitor for continual improvement through the Annual Energy/Water Report, NETS data base, and the triennial Environmental and Energy Functional Reviews (4-5 Centers/year).
[New in 2014] Develop and implement programs to educate employees about methods to minimize water use	Yes	NASA Centers utilize various communication tools and develop new programs to educate employees about sustainable practices, including methods to minimize water use. Tools include formal training on the NASA SATERN on-line training system, newsletters, bulletins, and events such as Earth Day. Centers also maintain environmental websites that provide information on sustainability to employees.	Since NASA is meeting its water goals, NASA HQs will monitor for continual improvement through the Annual Energy/Water Report, NETS data base, and the triennial Environmental and Energy Functional Reviews (4-5 Centers/year).
[New in 2014] Assess agency water strategy to determine the impact of water use on the agency's energy use and efficiency	No	NASA Centers are already required to develop a management plan for both energy and water. These plans address overall strategy, the needs of Center programs, the budget process, and organizational roles and responsibilities. The plans are reviewed during the triennial Environmental and Energy Functional Reviews (4- 5 Centers/year). Since NASA is meeting its water and energy goals, we do not believe an additional strategy is needed.	

GOAL 5: POLLUTION PREVENTION & WASTE REDUCTION

Progress toward Pollution Prevention & Waste Reduction

E.O. 13514 requires that Federal agencies promote pollution prevention and eliminate waste. The E.O. requires agencies to minimize the use of toxic and hazardous chemicals and pursue acceptable alternatives. It also requires agencies minimize waste generation through source reduction, increase diversion of compostable materials, and by the end of FY 2015 divert at least 50% of non-hazardous and 50% of construction and demolition debris.

NASA exceeds these goals; as of September 30, 2013, the diversion of non-construction solid waste is 62% and the diversion of construction and demolition waste is 65%.

Table 5: Goal 5 Strategies – Pollution Prevention & Waste Reduction

Please note: Strategies in Column A are those provided by CEQ (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Eliminate, reduce, or recover refrigerants and other fugitive emissions.	No	Goal is embedded in Agency routine operations.	
Reduce waste generation through elimination, source reduction, and recycling.	Yes	Implement Agency-wide paperless contracting system.	Evaluate pilot implementation progress for lessons learned.
Implement integrated pest management and improved landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals/materials.	No	Goal is embedded in Agency routine operations.	
Establish a tracking and reporting system for construction and demolition debris elimination.	Yes	1) Maintain NASA Environmental Tracking System (NETS) to include a comprehensive tracking and reporting database. 2) Continue to expand/refine NASA dashboard within NETS to provide visual representation and trending analysis for NETS information to identify opportunities for improvement.	1) Completion of annual data call by March, 2015. 2) Additional development of modules as requested by Centers for solid waste diversion, including construction and demolition debris.
Develop/revise Agency Chemicals Inventory Plans and identify and deploy chemical elimination, substitution, and/or management opportunities.	No	Goal is embedded in Agency routine operations.	
[NASA] Include within the existing Environmental and Energy Functional Reviews (EEFR's) contract reviews to ensure appropriate solid waste reduction language.	Yes	Complete representative sample contract reviews for selected Center EEFRs. Agency EEFR is a comprehensive environmental and energy review conducted at each NASA Center on a three year cycle.	Will complete EEFR reviews at selected Centers.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
[NASA] Maintain and improve Agency Websites for Recycling and Sustainable (RSA) Acquisition Community of Practice.	Yes	Maintain and improve websites for RSA activities. Websites are a comprehensive collection of information for Center use.	Websites include external RSA site and internal SharePoint site. Periodically update websites as appropriate.
[NASA] Increase training opportunities for Agency environmental and procurement professionals.	Yes	Investigate opportunities to provide additional training to Agency environmental and procurement professionals.	Potential training venues may include: classroom training, online webinar sessions, and/or face-to-face meetings.
[New in 2014] Take inventory of current HFC use and purchases.	Yes	Modify NETS to capture more comprehensive HFC purchase and use data.	Work with NETS staff to include additional analytical capabilities for HFC, including details on specific uses.
[New in 2014] Require high-level waiver or contract approval for any agency use of HFCs.	No	Until more comprehensive HFC data is obtained, it is unknown at this time if high level waiver or contract approval is required.	
[New in 2014] Ensure HFC management training and recycling equipment are available.	Yes	Ensure that all required staff members have proper training on management and recycling.	QA/QC information from EEFs and Center EMSs, and a record of required training or certifications.

GOAL 6: SUSTAINABLE ACQUISITION

Progress toward Sustainable Acquisition Goal

E.O. 13514 requires agencies to advance sustainable acquisition and ensure that 95 percent of applicable new contract actions meet federal mandates for acquiring products that are energy efficient, water efficient, biobased, environmentally preferable, non-ozone depleting, recycled content, or are non-toxic or less toxic alternatives, where these products meet performance requirements. To monitor performance, agencies perform quarterly reviews of at least 5 percent of applicable new contract actions to determine if sustainable acquisition requirements are included.

Figure 6-1

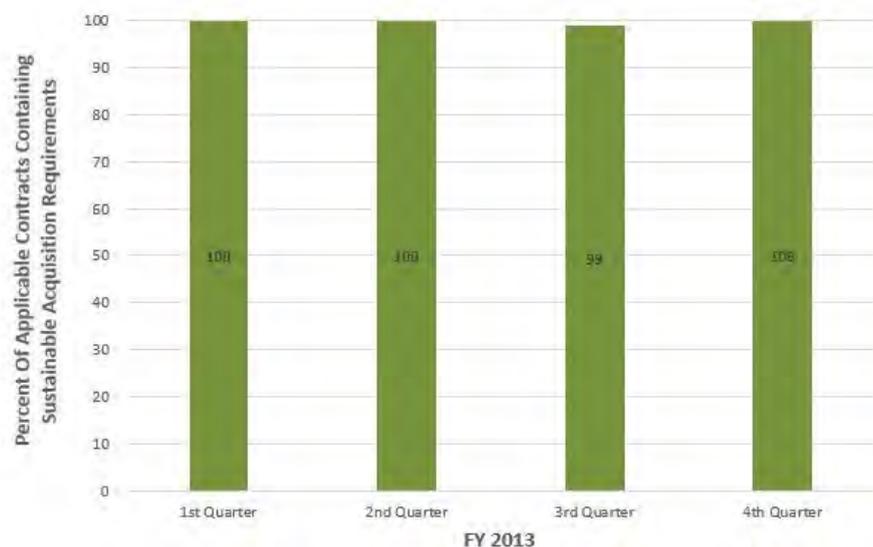


Table 6: Goal 6 Strategies – Sustainable Acquisition

Please note: Strategies in Column A are those provided by CEO (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
<p>Update and deploy agency procurement policies and programs to ensure that federally-mandated designated sustainable products are included in all relevant procurements and services.</p>	<p>Yes</p>	<p>1) Based on changes to the Federal Acquisition Regulation (FAR), Part 23, changes to NASA FAR Supplement (NFS) implementing policy have been drafted to establish procedures to ensure appropriate FAR provisions and clauses are in solicitations and contracts, and accurately record sustainable acquisition activity in the Federal Procurement Data System (FPDS). 2) Revise Agency NASA Procedural Requirement 8530.1A (Affirmative Procurement Program and Plan for Environmentally Preferable Products).</p>	<p>1) Issue revised NASA FAR Supplement (NFS) policy by December 2013. 2) Issue revised NASA Procedural Requirement 8530.1A (Affirmative Procurement Program and Plan for Environmentally Preferable Products) June, 2015.</p>
<p>Deploy corrective actions to address identified barriers to increasing sustainable procurements with special emphasis on biobased purchasing.</p>	<p>No</p>	<p>Currently, elements are in place to ensure sustainable acquisition and specifically biobased procurement. The FAR references sustainable acquisition. NASA annually reviews and updates related specifications and also completes Center environmental reviews of contracts to ensure the inclusion of sustainable acquisition language.</p>	
<p>Include biobased and other FAR sustainability clauses in all applicable construction and other relevant service contracts.</p>	<p>Yes</p>	<p>NASA has a process in place that includes contracting officers examining environmental sections completed by the intended acquisition end users and NASA Centers having the choice of additional pre-solicitation and pre-award reviews. Each Center has also investigated the potential issue of improper coding and provided targeted training to the contracting officers who process the awards most impacted by sustainable acquisition requirements. This training covers proper inclusion of sustainability clauses/provisions in solicitations and awards, as well as proper FPDS reporting.</p>	<p>Provide targeted training, as necessary, to Contracting Officers who process the awards most impacted by sustainable acquisition requirements.</p>

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Review and update agency specifications to include and encourage biobased and other designated green products to enable meeting sustainable acquisition goals.	Yes	NASA will annually review 25% of the specifications under its control and revise them to ensure that biobased and other designated green products are included as appropriate. This number of reviews will result in 100% of the total number of specifications under the control of NASA being reviewed for applicable green products during a 4 year cycle.	25% of NASA controlled specifications updated annually.
Use Federal Strategic Sourcing Initiatives, such as Blanket Purchase Agreements (BPAs) for office products and imaging equipment, which include sustainable acquisition requirements.	Yes	NASA has adopted an agency-wide acquisition strategy for procurement of office products and imaging equipment.	95% of applicable office products and imaging equipment meet sustainable acquisition requirements.
Report on sustainability compliance in contractor performance reviews.	No	Because of the types of contracts that NASA executes, the Contractor Performance Assessment Reporting System (CPARs) is not the ideal mechanism to note sustainable acquisition criteria, as the standard criteria is geared more towards quality, key consultants, design engineering, management, etc. A standardized field in CPARs for sustainability compliance would be useful in terms of capturing this type of information.	
[NASA] Complete representative sample of contract reviews for biobased and FAR sustainability requirements during selected Center Environmental & Energy Functional Reviews (EEFRs).	Yes	NASA will utilize another existing review mechanism – the EEFR, a comprehensive environmental and energy review conducted at each NASA Center on a three year cycle – to conduct additional compliance contract reviews.	Complete representative sample contract reviews of all selected Center EEFRs.

GOAL 7: ELECTRONIC STEWARDSHIP & DATA CENTERS

Progress toward EPEAT, Power Management & End of Life Goals

E.O. 13514 requires agencies to promote electronics stewardship by: ensuring procurement preference for EPEAT-registered products; implementing policies to enable power management, duplex printing, and other energy-efficient features; employing environmentally sound practices with respect to the disposition of electronic products; procuring Energy Star and FEMP designated electronics; and, implementing best management practices for data center operations.

Figure 7-1

EPEAT	POWER MANAGEMENT	END-OF-LIFE	COMMENTS
			

EPEAT	
	95% or more Monitors and PCs/Laptops purchased in FY2013 was EPEAT Compliant Agency-wide
	85-94% or more Monitors and PCs/Laptops purchased in FY2013 was EPEAT Compliant Agency-wide
	84% or less Monitors and PCs/Laptops purchased in FY2013 was EPEAT Compliant Agency-wide
Power Management	
	100% Power Management Enabled Computers, Laptops and Monitors Agency-wide
	90-99% Power Management Enabled Computers, Laptops and Monitors Agency-wide
	89% or less Power Management Enabled Computers, Laptops and Monitors Agency-wide
End-of-Life	
	100% of Electronics at end-of-life disposed through GSA Xcess, CFL, Unicorn, USPS Recycling Program or Certified Recycler (R2, E-Stewards). <i>Submitted annual report to GSA for Federal Electronics Assets furnished to non-Federal recipients.</i>
	100% of Electronics at end-of-life disposed through GSA Xcess, CFL, Unicorn, USPS Recycling Program and/or non-Certified Recycler. <i>Submitted annual report to GSA for Federal Electronics Assets furnished to non-Federal recipients.</i>
	Less than 100% of Electronics at end-of-life disposed through GSA Xcess, CFL, Unicorn, USPS Recycling Program or non-Certified Recycler. <i>No annual report submitted to GSA for Federal Electronics Assets furnished to non-Federal recipients.</i>

Table 7: Goal 7 Strategies – Electronic Stewardship & Data Centers

Please note: Strategies in Column A are those provided by CEQ (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Identify agency “Core” and “Non-Core” Data.	No	This is complete.	N/A
Consolidate 40% of agency non-core data centers.	Yes	This is progressing according to the existing Data Center Consolidation Plan established in 2011.	Reduce to 29 data centers by end of FY14 and 22 data centers by end of FY15.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Optimize agency Core Data Centers across total cost of ownership metrics.	Yes	Work with Center data center POCs to identify efficiencies that can be realized within a reasonable scope of time and money.	There are hundreds of metrics tracked in the Total Cost of Ownership plan from OMB. We will not repeat them here. Within each data center we will work the metrics that are appropriate to that specific data center and can be addressed within a reasonable scope of time and money.
Ensure that power management, duplex printing, and other energy efficiency or environmentally preferable options and features are enabled on all eligible electronics and monitor compliance.	Yes	Policies/Procedures associated with the Agency's Desktop Outsourcing contract (ACES) now default to requiring power management and duplex printing.	Metric: 100% compliance for duplex, power save, and ink optimization settings across all enterprise printing devices. Metrics/Measurement strategy: Various contract compliance metrics for the contractors providing for enterprise printing services to include Toner and Waste Disposal Plan (DRD-IT02).
Update and deploy policies to use environmentally sound practices for disposition of all agency excess or surplus electronic products, including use of certified eSteward and/or R2 electronic recyclers, and monitor compliance.	Yes	NASA will continue to use eSteward and R2 electronic recyclers.	Metric: 100% compliance. Metrics/Measurement strategy: Annual waste/disposal reports are submitted to NASA Headquarters to complete the annual report on affirmative Procurement, waste reduction, energy efficient procurement and ozone depleting substances.
Ensure acquisition of 95% EPEAT registered and 100% of ENERGY STAR qualified and FEMP designated electronic office products.	Yes	NASA has refreshed all systems as stated in the 2013 plan and complete the milestone and goals to be 95% EPEAT and registered and 100% Energy Star compliant	Metrics/Measurement strategy: The Enterprise contract that NASA utilizes to provide for End User Services requires a semi-annual update of the ACES Electronic Product Environmental Assessment Tool (EPEAT) Registered Purchases (DRD-MA-08). This report identifies all systems procured by the contractor in support of NASA. The report identifies by system category the EPEAT Registration category of gold/silver.

GOAL 8: RENEWABLE ENERGY

Renewable Energy Percentage of Total Electricity Usage

E.O. 13514 requires that agencies increase use of renewable energy. Further, EPACT 2005 requires agencies to increase renewable energy use such that 7.5 percent of the agency's total electricity consumption is generated by renewable energy sources for FY 2014 and beyond. For FY 2012, the required target was 5 percent of an agency's total electricity consumption.

Figure 8-1

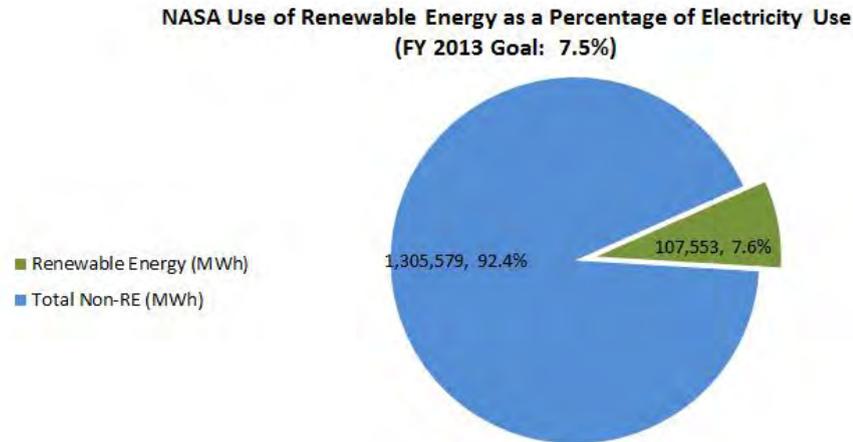


Table 8: Goal 8 Strategies – Renewable Energy

Please note: Strategies in Column A are those provided by CEO (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Purchase renewable energy directly or through Renewable Energy Credits (RECs).	Yes	NASA continues to meet its renewable energy goals through procuring RECs and renewable energy directly. 67% of NASA's renewable energy requirements are met through REC purchases and about 11% comes from direct purchases.	Due to new renewable energy requirements in Presidential Memorandum issued December 5, 2013, NASA will evaluate its renewable energy policy. RECs and direct purchases will continue to be part of NASA's renewable energy portfolio.
Install onsite renewable energy on federal sites.	Yes	NASA continues its efforts to install onsite solar and wind energy. There is one large solar and wind project in development and smaller projects are considered in new construction and major upgrades, including ESPC projects.	NASA is developing procurement strategy for a 0.5-1MW solar project and is continuing NEPA efforts for a wind project.
Lease land for renewable energy infrastructure.	Yes	NASA continues efforts to initiate in-kind lease of land for wind farm and solar projects	NASA is in the final stages of the NEPA process to allow installation of a wind farm at a NASA facility. The financing strategy will include leasing land for reduced energy rates.
Develop biomass capacity for energy generation.	No	This is not a top strategy for NASA as it investigated the use of biomass (wood) co-generation at one of its Centers and determined the project was not life cycle cost effective. NASA does not have biomass resources at its other facilities.	

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Utilize performance contracting methodologies for implementing ECMs and increasing renewable energy.	Yes	NASA is planning to include about 400 KW of solar on the roof tops through the use of ESPC. NREL has validated the economic analysis and NASA is working with FEMP to address barriers due to an OMB Memo dated 8/16/2011.	NASA will continue to include renewable energy in performance contracting, once issues with OMB Memo dated 8/16/11 are addressed.
Work with other agencies to create volume discount incentives for increased renewable energy purchases.	Yes	NASA is working with other agencies, including the Department of Defense (DoD), on renewable energy options.	NASA is in communication with other agencies regarding activities as various Centers.
[NASA]: Determine feasibility of Combined Heat & Power (CHP) generation facility on federal sites.	Yes	NASA is performing feasibility study for CHP project at a Center that will use natural gas and landfill gas for electrical energy/steam generation. The CHP system will provide energy security for the Centers facilities and mission operations.	NASA has funded a level 2 feasibility study for CHP project that will include landfill gas for electricity and steam generation at the facility.

GOAL 9: CLIMATE CHANGE RESILIENCE

Climate Change Resilience

E.O. 13514 requires each agency to evaluate agency climate change risks and vulnerabilities to identify and manage the effects of climate change on the agency's operations and mission in both the short and long term.

NASA also developed its 2014 Climate Risk Management Plan, an appendix to this SSPP.

Table 9: Goal 9 Strategies – Climate Change Resilience

Please note: Strategies in Column A are those provided by CEQ (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
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.	Yes	NASA has developed and applied a robust local adaptation workshop process at its installations. It partners with others to help other Agencies and local communities benefit from the adaptation expertise it continues to develop.	Together with federal and other community partners, develop, support, and participate in series of DC focused climate adaptation webinar and workshops resulting in synopsis reports.
Update agency emergency response procedures and protocols to account for projected climate change, including extreme weather events.	Yes	Emergency preparedness is one element of NASA's adaptation workshops, whether for our installations or in webinars/workshops with federal partners.	See top item; emergency readiness and resilience continues to be a part of climate adaptation activities.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Ensure workforce protocols and policies reflect projected human health and safety impacts of climate change.	No	NASA recognizes this as relevant and monitors workforce health but it is not presently a top priority relative to other strategies.	
Update agency external programs and policies (including grants, loans, technical assistance, etc.) to incentivize planning for, and addressing the impacts of, climate change.	No	Already in place: NASA does this nationally through Research Opportunities in Space and Earth Science (ROSES) funding (e.g., CASI team and other research and applied sciences projects) and for developing nations through the SERVIR Program (http://www.nasa.gov/mission_pages/servir/)	
Ensure agency principals demonstrate commitment to adaptation efforts through internal communications and policies.	Yes	NASA science and institutional leaders have made adapting to climate change a focus, participating actively in workshops, advocating for applicable research, and advancing relevant policies.	NASA Science and institutional leaders remain active leaders in planning, preparing for, and conducting climate adaptation workshops.
Identify vulnerable communities that are served by agency mission and are potentially impacted by climate change and identify measures to address those vulnerabilities where possible.	No	Already in place: Though not among NASA's top strategies for the next 12 months, NASA's local adaptation process engages community stakeholders so that they, too, can identify key vulnerabilities.	
Ensure that agency climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary.	Yes	1) NASA is at the forefront of climate science, research, and computational modeling. 2) NASA's Climate Adaptation Science Investigator (CASI) team funds applied research and toolset development of direct benefit to institutional climate risk managers. 3) NASA continually improves its modeling capability by integrating new data.	1) Continue making contributions to climate research and to assessments such as the NCA and IPCC. 2) NASA's CASI program funds adaptation research and toolset development. 3) Updated climate projections for NASA Centers
Design and construct new or modify/manage existing agency facilities and/or infrastructure to account for the potential impacts of projected climate change.	Yes	NASA applies a multi-disciplinary approach to advancing its sustainable facilities design program.	Establish adaptive design standards working group and update capital investment requirements (NPR 8820, Facility Project).

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Incorporate climate preparedness and resilience into planning and implementation guidelines for agency-implemented projects.	No	Already in place: NASA recognizes climate change and resilience to severe weather events as the responsibility of mission project management, for instance including backup control center plans to ensure resilient spacecraft operations.	

GOAL 10: ENERGY PERFORMANCE CONTRACTS

Progress toward Goal - Awarded Energy Performance Contracts

Energy Performance Contracts, including both Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs), enable agencies to obtain energy efficiency investments in buildings and deploy on-site renewable energy through long-term contracts with the private sector, which are in turn paid through savings derived from those investments.

The chart below represents the agency's performance contracting commitment and progress toward that commitment reported through December 31, 2013 (for agencies subject to the 2011 President's Performance Contracting Challenge). The bar graph shows the total dollar value (in millions) of (1) already awarded projects, (2) projects in the pipeline but not yet awarded, and (3) the pipeline shortfall or surplus depending on whether the agency has reached their commitment goal.

NOTE: All agencies are to meet or exceed their initial target no later than June 30, 2014.

Figure 10-1

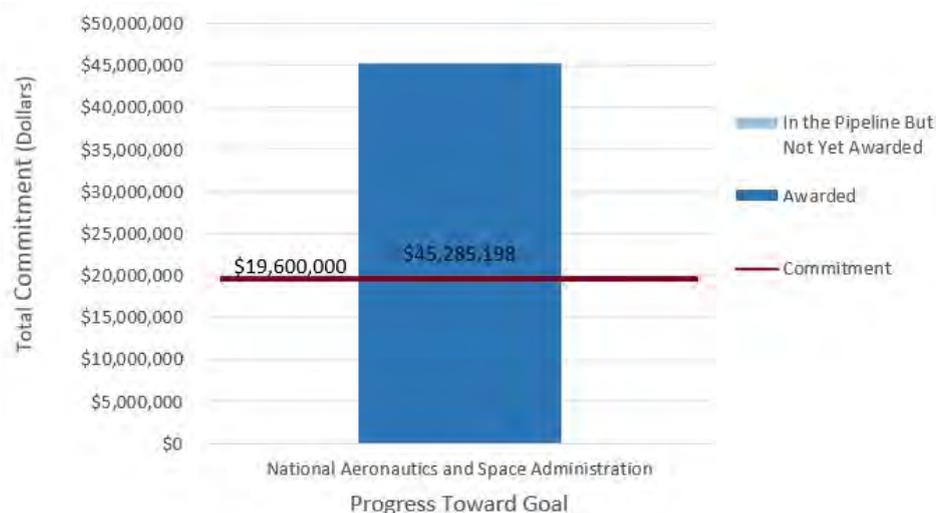


Table 10: Goal 10 Strategies – Energy Performance Contracts

Please note: Strategies in Column A are those provided by CEQ (some new in 2014), unless otherwise noted.

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Evaluate 25% of agency's most energy intensive buildings for use with energy performance contracts.	No	NASA's most energy intensive facilities are due to highly specialized functions conducting intermittent mission operations.	

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/NA	(C) Strategy Narrative	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months
Prioritize top three projects which will provide greatest energy savings potential.	Yes	Assess energy savings on OMB MAX energy savings template as potential projects complete feasibility study or investment grade audit.	Potential project list prioritized by greatest energy savings potential.
Cut cycle time of performance contracting process by at least 25%.	No	Cycle time not entirely within any Agency's control.	
Assign agency lead to participate in strategic sourcing initiatives.	Yes	Designated lead on 9/25/13.	Participation in strategic sourcing initiatives interagency activities.
Devote 2% of new commitments to small buildings (<20k sq. ft.).	No	Such facilities typically exist within larger NASA installations and participate in projects addressing small and large facilities.	
Identify and commit to include 3-5 onsite renewable energy projects in energy performance contracts.	No	OMB policy constrains savings streams available to such projects.	
Ensure relevant legal and procurement staff are trained by FEMP ESPC/UESC course curriculum.	Yes	Review potential projects and confirm team training status per 5/14/13 NASA policy memo.	Staff training status list for teams supporting potential projects.
Provide measurement and verification data for all awarded projects.	Yes	Collect utility/ESCO initial measurement and verification data from Centers for awarded projects.	Measurement and verification data for awarded projects as required.
Enter all reported energy savings data for operational projects into MAX COLLECT (max.gov).	Yes	Collect populated energy savings template from Centers for awarded projects.	Energy savings data for awarded projects in OMB MAX.

APPENDIX

2014 Climate Risk Management Plan