

# United States Department of Agriculture



## Sustainable Buildings Implementation Plan



**August 13, 2007**

## EXECUTIVE SUMMARY

On January 24, 2007, the President George W. Bush signed Executive Order (EO) 13423: “*Strengthening Federal Environmental, Energy, and Transportation Management.*” The Order requires each Federal Agency to comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings set forth in the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (2006). EO 13423 set goals in the areas of acquisition, energy efficiency, renewable energy, water conservation, toxics reductions, recycling, electronics stewardship, fleets, and sustainable/high-performance buildings.

Subsequent “Instructions for Implementing EO 13423” issued by the White House Council on Environmental Quality on March 29, 2007, state that, by August 15, 2007, and annually thereafter, each executive level agency/department shall submit a Sustainable Buildings Implementation Plan to the Office of Management and Budget (OMB). Furthermore, on June 29, 2007, OMB issued the Sustainable Buildings Implementation Plan Guidance, which provides detailed objectives, requirements and guidance to agencies for developing their Implementation Plan.

The United States Department of Agriculture (USDA) Sustainable Buildings Implementation Plan formulated herein addresses how USDA will implement the following objectives:

- 1) Ensure all new facilities and major renovation projects implement design, construction, and operations and maintenance practices in support of the sustainable design/high-performance buildings goals of EO 13423, as well as, statutory requirements; and
- 2) Ensure that a minimum of 15 percent of the existing Federal capital asset building inventory of USDA as of the end of fiscal year 2015 incorporates the sustainable design practices in the Guiding Principles.

USDA already has taken initial steps to accomplish these goals, such as issuing policies and regulations that promote energy-efficiency, water conservation and sustainable building design and construction. USDA has also formed a Sustainable Operations Council (SOC), chaired by the Assistant Secretary for Administration (USDA’s senior official responsible for implementation of EO 13423) and composed of senior agency officials. This council will provide overall direction and guidance to succeeding employees in the interdisciplinary work groups created to achieve these goals and to formulate methods for tracking and reporting status and accomplishment.

This plan outlines the additional steps USDA intends to take to fully comply with EO 13423, including implementing sustainable practices for high performance construction, leasing, operation, and maintenance of buildings. This plan will be incorporated as an appendix in the USDA Asset Management Plan required by EO 13327, Federal Real Property Asset Management and will be updated annually.

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## Acronyms

<b>AGAR</b>	<b>Agriculture Acquisition Regulation</b>
<b>AMP</b>	<b>Asset Management Plan</b>
<b>ASA</b>	<b>Assistant Secretary for Administration</b>
<b>ASHRAE</b>	<b>American Society of Heating, Refrigerating and Air Conditioning Engineers</b>
<b>BBP</b>	<b>Building Block Plan</b>
<b>BMP</b>	<b>Best Management Practices</b>
<b>CEQ</b>	<b>White House Council on Environmental Quality</b>
<b>CPIP</b>	<b>Capital Programming and Investment Process</b>
<b>EMS</b>	<b>Environmental Management System</b>
<b>EO</b>	<b>Executive Order</b>
<b>EPA</b>	<b>Environmental Protection Agency</b>
<b>EPACT</b>	<b>Energy Policy Act of 2005</b>
<b>FEMP</b>	<b>Federal Energy Management Program</b>
<b>GSA</b>	<b>General Services Administration</b>
<b>ISWG</b>	<b>Interagency Sustainability Working Group</b>
<b>LEED</b>	<b>Leadership in Energy and Environmental Design</b>
<b>MOU</b>	<b>Memorandum of Understanding</b>
<b>OFEE</b>	<b>Office of the Federal Environmental Executive</b>
<b>OMB</b>	<b>Office of Management and Budget</b>
<b>OPPM</b>	<b>Office of Procurement and Property Management</b>
<b>SBIP</b>	<b>Sustainable Buildings Implementation Plan</b>
<b>SOC</b>	<b>Sustainable Operations Council</b>
<b>USDA</b>	<b>United States Department of Agriculture</b>

## 1.0 INTRODUCTION

Buildings are major consumers of energy in this country. Sustainable building designs aim to lessen the negative impact on the environment through energy and resource efficiency. Sustainable building is defined as *the creation and responsible management of a healthy built environment based on resource efficient and ecological principles*. Buildings that are healthy for the environment are healthy for people, as well.

With increasing concerns about limited resources, increasing fuel and energy costs, dependency on foreign oil, increasing world-wide energy demands, and climate change, using sustainable building practices has become a national priority. Responding to these concerns, USDA joined several federal agencies in signing the Federal Leadership in High Performance and Sustainable Buildings MOU in January 2006.

The MOU set goals and established *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles)* for agencies to follow when considering new construction or major renovation. The MOU *Guiding Principles* include:

- Employment of integrating design principles
- Optimization of energy efficiency and use of renewable energy
- Protection and conservation of water
- Enhancement of indoor environmental quality
- Reduction of environmental impacts of materials

On January 24, 2007, President George W. Bush elevated the goals and objectives of the MOU to the level of executive order with the issuance of EO 13423, “Strengthening Federal Environmental, Energy, and Transportation Management”. The EO also sets goals in the areas of energy efficiency, green purchasing, renewable energy, toxics reductions, recycling, electronics stewardship, water conservation, and fleets.

Given the large inventory of buildings (over 26,000) that the Department owns and operates, it becomes essential that USDA incorporate the MOU strategies as it builds new facilities and renovates its existing ones. USDA is committed to the goals of EO 13423 and the *Guiding Principles* of the MOU. This is not only a response to the environmental challenges posed by constructing and operating buildings, but also a call to the government to lead by example.

USDA’s vision is that by developing and executing a Sustainable Buildings Implementation Plan (SBIP), the Department will strive to be part of the solution to the adverse environmental effects of constructing, operating and maintaining buildings. Some of the results that the Department of Agriculture envisions as it executes the SBIP range from reduced life-cycle costs of facilities to improved energy efficiency to enhanced safety, health and productivity of USDA employees. The SBIP is not intended to replace any existing policy but to augment such established policies using new metrics and reporting criteria, in accordance with EO 13423.

## **2.0 SCOPE**

### **2.1 Purpose and Authority**

The purpose of the United States Department of Agriculture (USDA) Sustainable Buildings Implementation Plan (SBIP) is to implement sustainable buildings principles and practices into the design, construction, operations and maintenance processes of buildings that USDA owns and operates.

Executive Order 13423 “*Strengthening Federal Environmental, Energy, and Transportation Management*” requires that all executive agencies pursue the following objectives regarding sustainable buildings:

- Reduction in life-cycle cost of buildings environmental and energy attributes;
- Improvement in energy efficiency, water conservation, and utilization of renewable energy;
- Provision of safe, healthy, and productive built environments; and
- Promotion of sustainable environmental stewardship.

The SBIP will facilitate: (a) USDA’s compliance with sustainable building requirements in EO 13423; (b) reductions in energy and water consumption; (c) a reduction in energy/water-related costs; and (d) enhancement of the health and increase in productivity of USDA employees. In all aspects of its acquisitions and operations USDA aspires to be a good steward of natural resources and a prudent manager of the taxpayers’ dollar. The SBIP will help advance both roles.

### **2.2 Applicability**

The SBIP applies to USDA agencies and offices covered by the USDA Asset Management Plan (AMP).

### **2.3 Goals**

The SBIP will help USDA to accomplish the goals contained in section 2(f) of EO 13423, specifically:

- Ensure all new construction and major renovation of department buildings comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings* set forth in the Federal Leadership in High Performance and Sustainable buildings MOU; and
- Ensure that a minimum of 15 percent of the existing Federal capital asset building inventory of USDA as of the end of fiscal year 2015 incorporates the sustainable design practices in the *Guiding Principles*.

## **2.4 Roles and Responsibilities**

### **2.4.1 Assistant Secretary for Administration (ASA)**

- Serves as the USDA Senior Official responsible for implementing EO 13423;
- Provides Departmental leadership for sustainable buildings principles and practices;
- Directs the issuance of sustainable buildings policies and guidance;
- Chairs the USDA Sustainable Operations Council;
- Submit reports on USDA's progress toward meeting the goals of EO 13423 and the SBIP to OMB and the Office of the Federal Environmental Executive (OFEE);
- Implements an awareness program to promote sustainable buildings principles and practices.

### **2.4.2 Director, Office of Procurement and Property Management (OPPM)**

- Oversees the implementation of the SBIP;
- Serves as the Senior Real Property Officer, conducting assessment and oversight of Department-wide management of buildings;
- Issues sustainable buildings policies and guidance;
- Issues leasing policies and guidance for sustainable buildings requirements;
- Develops boilerplate specifications and model templates for inclusion in construction and leasing contracts;
- Enumerates best practices for sustainable buildings;
- Prepares reports on USDA's progress toward meeting the goals of EO 13423 and the SBIP.

### **2.4.3 Agency Heads and Office Directors**

- Ensure that appropriate agency program and technical personnel are trained in the sustainable buildings requirements of EO 13423, the Agriculture Acquisition Regulation (AGAR) requirements, and this SBIP;
- Support and implement the Department's sustainable buildings goals as outlined in this SBIP;
- Ensure that sustainable buildings requirements are incorporated into the agency's Building Block Plan (BBP);
- Ensure compliance with OMB Circular A-11, Part 7, Section 300 and USDA's Real Property Capital Programming and Investment Process (CPIP) on capital programming and developing business cases in advance of funding requests for all major projects that meet or exceed USDA's defined capital asset threshold of 10 million dollars;
- Coordinate with OPPM to review and analyze sustainable buildings requirements, information and data.

### **2.4.4 Program/Requirements Personnel**

- Implement the requirements of the SBIP (as appropriate) as required by EO 13423;



- Ensure that relevant sustainable buildings requirements are identified prior to submission to the contracting officer or other source of supply;
- Consult with contracting, environmental, and energy personnel to improve and enhance statements of work or specifications that incorporate sustainable buildings requirements of EO 13423;
- Use available boilerplate specifications and model templates for contracts as appropriate.

### **3.0 SUSTAINABLE BUILDINGS PROGRAM ELEMENTS**

USDA already has established core policies and utilized practices to further the principles of sustainable building. However, in order to comply with the requirements of EO 13423, USDA plans to implement additional sustainable building practices. Below is a list of current and proposed policies and practices that address how USDA will accomplish the goals in section 2(f) of EO 13423.

#### **3.1 Sustainable Buildings Policies and Guidance**

To foster the design, construction, operation and maintenance of sustainable buildings USDA:

- Has issued a Departmental Regulation (DR 5500-001) that promotes the use of sustainable design and construction standards such as Leadership in Energy and Environmental Design (LEED), EnergyStar® Buildings, and LABS21;
- Developed a plan for installing advanced electric meters in USDA buildings;
- Developed guidance for purchasing and generating renewable energy;
- Established a preference for Energy Star® and Federal Energy Management Program (FEMP) products in contracts through the USDA Green Purchasing Affirmative Procurement Program; and
- Gives preference to products that are more energy efficient in its AGAR 423.203.

#### **3.2 Sustainable Buildings Practices**

- To the greatest extent practicable, each USDA agency shall include a preference for buildings that meet the goals of the *Guiding Principles* in the selection criteria for acquiring leased buildings. When entering into leases for USDA occupancy, including the renegotiation or extension of existing leases, agencies shall include criteria encouraging lease provisions that support the *Guiding Principles*. Build-to-suit lease solicitations shall incorporate criteria for sustainable design and development, energy efficiency, and verification of building performance in accordance with the *Guiding Principles*.
- USDA agencies are establishing localized “green teams” at field locations throughout the country to address regional factors and local conditions related to sustainability.
- The *Guiding Principles* and practices will be employed by all USDA agencies when designing, constructing and conducting major renovations of buildings. The five *Guiding Principles* are discussed in detail in succeeding sections.

### **3.2.1 Guiding Principle 1 - Employ Integrated Design Principles**

The employment of integrated design principles is the use of a collaborative, integrated planning and design process that initiates and maintains an integrated project team that manages a project from inception to project completion. The team establishes high performance and sustainable goals and ensures the incorporation of these goals throughout the complete life cycle of the project through disposition. Beginning in FY 2008, all project design starts for new construction and major renovations will be led by an integrated project team, as defined by the agency, which should include sustainability, energy, safety, environmental management, and at least one “Green Building” professional.

#### **3.2.1.1 Building Performance Goals**

All agencies will define building performance goals to be used by integrated project design teams in designing new construction and major renovation projects. These performance goals must address site planning, energy, water, materials and indoor environmental quality and must consider all stages of a building’s life cycle.

#### **3.2.1.2 Design Sustainability Reviews**

Agency design processes shall include sustainability reviews at appropriate milestones early and throughout the design process to determine if the project design is on track to meet minimum Departmental, agency, and project performance goals. At least one sustainability review will be performed by a team to include design peers and outside sustainable building design experts. This may be accomplished through a total building commissioning process or through appropriate value-based decision-making.

#### **3.2.1.3 Building Commissioning Goals**

Building commissioning is a systematic approach to improving system performance, operation and maintenance, indoor air quality and thermal comfort, and energy efficiency in both new and existing buildings. Commissioning goes beyond testing, adjusting, and balancing and traditional inspections. American Society of Heating, Refrigerating and Air Conditioning Engineers (*ASHRAE*) *Guideline 0-2005, The Commissioning Process*, defines commissioning as *a quality-oriented process for achieving, verifying, and documenting that the performance of facilities, systems, and assemblies meets defined objectives and criteria*. Commissioning involves functional testing to determine how well the building systems work together and if the systems meet the original design intent.

Agencies shall employ total building commissioning practices tailored to the size and complexity of the building and its systems components. Commissioning should include a designated commissioning authority, inclusion of commissioning requirements in construction documents, a commissioning plan, verification of the installation and performance of systems to be commissioned, and a commissioning final report. The cost of commissioning should be a line item in the project cost estimate.

There are several sources available to help in understanding and adopting commissioning into a project acquisition plan. These sources are referenced in Section 7.4 of this plan.

### **3.2.2 Guiding Principle 2 - Optimize Energy Performance and Use of Renewable Energy**

Optimizing a building's energy performance requires an integrated design approach to minimize the building's energy consumption while meeting all the occupants' needs. Integrated design is an important aspect of optimizing energy performance, including equipment selection, because decisions made in one area will affect others. The building's design is only the first step to optimizing its energy performance. The building must also be constructed as designed and commissioned on a regular basis. Measurement and verification of the building's actual energy performance also plays an essential role in optimizing its energy performance.

#### **3.2.2.1 Building Performance Energy Targets**

Energy performance targets can be set for a building design and compared to the estimated energy consumption. Agency integrated project management teams shall establish a whole building performance target for a given project that is based on the intended use, occupancy, operations, anticipated plug load and other energy demands.

The ENERGY STAR® Target Finder internet-based tool available at ([http://www.energystar.gov/index.cfm?c=new\\_bldg\\_design.bus\\_target\\_finder](http://www.energystar.gov/index.cfm?c=new_bldg_design.bus_target_finder)) provides an energy performance target rating for whole building energy use, using a realistic energy consumption target for the building designs as compared to similar buildings nationwide. The target serves as a reference for comparing energy strategies and deciding the best technologies and practices for achieving energy performance goals. Alternate sources such as COMcheck-EZ (<http://www.enertgycodes.gov/comcheck/>), DOE2 (<http://www.doe2.com>) and eQUEST can also help in determining energy performance.

#### **3.2.2.2 EnergyStar® Rating**

Starting in FY 2008, new USDA agency project designs will achieve at least a 75 percent rating using the Energy Star® Building certification for new construction and at least 60 percent rating for major renovation. This can be achieved by establishing a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the ENERGY STAR® targets for new construction and major renovation where applicable. These targets may be determined using the ENERGY STAR® Target Finder tool.

### **3.2.2.3 Energy Intensity Reductions**

USDA agency building designs beginning in FY 2008 will be designed to be 30 percent more energy efficient than the levels established by the relevant code, either the 2004 International Energy Conservation Code for residential buildings or the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) and the Illuminating Engineering Society of North America (IESNA) Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential. For major renovations, the project shall reduce the energy intensity by 20 percent below pre-renovations 2003 baseline.

### **3.2.2.4 Measurement and Verification**

Section 103 of the Energy Policy Act of 2005 (EPACT) requires that electric meters be installed in all Federal buildings by October 1, 2012. Starting in FY 2008, advanced electric meters shall be installed in all USDA buildings that are new construction or major renovations.

- Actual performance data from the first year of operation shall be compared with energy design targets. After one year of occupancy, measure all new major installations using the ENERGY STAR® Benchmarking Tool for building and space types covered by ENERGY STAR®.
- Agency project managers should input data and lessons learned from sustainable buildings projects into the Department of Energy’s High Performance Building Database at [www.eere.energy.gov/femp/highperformance/index.cfm](http://www.eere.energy.gov/femp/highperformance/index.cfm).

### **3.2.2.5 Renewable Energy**

For the purpose of this SBIP, “renewable energy” means electricity generated from solar, wind, biomass, landfill gas, ocean (including tidal, wave, current, and thermal), geothermal, municipal solid waste, or new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project.

Section 203 of EPACT sets goals for renewable electricity consumption by the Federal Government to be no less than 3 percent in fiscal years 2007 through 2009, 5 percent in fiscal years 2010 through 2012 and 7.5 percent in fiscal year 2013 and thereafter. The renewable energy consumption goals can be achieved by on-site generation and use at a federal facility (such as photovoltaic systems, wind turbines, ground source heat pumps); purchasing renewable energy (green power) from utility companies for use at a federal facility, or through the purchase of renewable energy certificates. Each agency shall strive to meet the renewable energy consumption goal.

The USDA goal will be to increase the use of both on-grid and off-grid renewable energy generation systems, including solar hot water, solar electric, solar outdoor lighting, small wind turbines, fuel cells, and other alternatives, where such systems are life-cycle cost-effective and offer benefits including energy efficiency, pollution prevention, source energy reductions,

facility energy reliability, security enhancement, avoided infrastructure costs, or expedited service.

### **3.2.3 Guiding Principle 3 - Protect and Conserve Water**

USDA agencies shall adhere to the requirements of the EO 13423 Water Conservation Guidance. The guidance is scheduled to be issued by the Federal Energy Management Program in September 2007.

### **3.2.4 Guiding Principle 4 - Enhance Indoor Environmental Quality**

The Environmental Protection Agency (EPA) has determined that the average person spends 90 percent of their time indoors, and the indoor air quality and working environment can have a substantial effect on a person's health and work ethic. Every effort should be made to enhance the environmental quality of the USDA employee working indoors. This section discusses five areas that have a measurable effect on the indoor working environment: ventilation and thermal comfort; moisture control; daylighting; low-emitting materials; and protection of indoor air quality during construction.

#### **3.2.4.1 Ventilation and Thermal Comfort**

Agencies shall ensure adequate ventilation and thermal comfort in buildings by meeting current ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human Occupancy, including continuous humidity control within established ranges per climate zone and meeting ASHRAE Standard 62.1-2004 Ventilation for Acceptable Indoor Air Quality.

#### **3.2.4.2 Moisture Control**

Agencies shall establish and implement a moisture control strategy for controlling moisture flows and condensation to prevent building damage and mold contamination.

#### **3.2.4.3 Daylighting**

Buildings shall achieve a minimum daylight factor of 2 percent (excluding all direct sunlight penetration) in 75 percent of all space occupied for critical visual tasks. Provide automatic dimming controls or accessible manual lighting controls, and appropriate glare control.

#### **3.2.4.4 Low Emitting Materials**

Design and construction specifications for all new building construction and renovation shall specify materials and products with low pollutant emissions, including adhesives, sealants, paints, carpet systems, and furnishings.

### **3.2.4.5 Protect Indoor Air Quality during Construction**

Designs of new construction and major renovations of buildings shall follow the recommended approach of the Sheet Metal and Air Conditioning Contractor's National Association Indoor Air Quality Guidelines for Occupied Buildings under Construction (1995). Interior facilities also should make use of the *Good Practices for Maintaining Acceptable Indoor Air Environmental Quality During Construction and Renovation Projects*, published by National Institute for Safety and Occupational Health (NIOSH), November 2005.

### **3.2.5 Guiding Principle 5 - Reduce Environmental Impact of Materials**

There are many ways to minimize the environmental impact of materials on the environment. Rather than building anew, recycle or adaptively reuse a building for a new purpose. The designing of flexible interiors that can be converted to other uses reduces the need for redesign and reconstruction of interior spaces. USDA agencies will encourage visitor and employee recycling through well-placed and marked containers and through awareness programs. Agencies shall also seek building materials with high recycled content and low "embodied energy". Agencies shall consider using as many green products as possible for any new construction or major renovation project.

#### **3.2.5.1 Recycled Content**

USDA agencies shall use products meeting or exceeding EPA's recycled content recommendations for EPA-designated products. Also, agencies shall use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10 percent (based on cost) of the total value of the materials in the project.

#### **3.2.5.2 Biobased Materials**

Agencies shall use products meeting or exceeding USDA's biobased content recommendations for USDA-designated products. Agencies shall also use biobased products made from rapidly renewable resources and certified sustainable wood products for other products.

#### **3.2.5.3 Construction Waste**

Agencies shall identify local recycling and salvage operations that could process site related waste during a project's planning stage. Agencies shall recycle or salvage at least 50 percent construction, demolition, and land clearing waste, excluding soil, where markets or on-site recycling opportunities exist.

#### **3.2.5.4 Ozone Depleting Compounds**

Agencies shall eliminate the use of ozone depleting compounds during and after construction where alternative environmentally preferable products are available, consistent with either the

Montreal Protocol or Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account life cycle impacts.

#### **4.0 SUSTAINABLE BUILDINGS PROGRAM PROMOTION**

USDA will engage in a series of quantitative and qualitative initiatives to secure the greatest return on its investment of resources into sustainable buildings principles and practices. These initiatives include purchasing and generating renewable energy; conducting energy audits; employing the use of Energy Savings Performance Contracts and Utility Energy Savings Contracts; reviewing and updating USDA policies and regulations; establishing localized “green teams”; and incorporating sustainability requirements into the Department’s real property guidance to agencies on building block plans and three year rolling timeline project requirements.

Other initiatives include promoting the SBIP through the USDA Sustainable Operations Council (SOC) and using existing awareness programs to promote the SBIP. These two initiatives are described in more detail below.

##### **4.1 U.S. Department of Agriculture Sustainable Operations Council (SOC)**

USDA has recently chartered a Sustainable Operations Council, chaired by the Assistant Secretary for Administration (USDA’s senior official responsible for implementation of EO 13423) and composed of senior agency officials. This council provides overall direction and guidance to succeeding employee interdisciplinary work groups created to achieve these sustainability goals and to formulate methods for tracking and reporting status and accomplishment.

USDA and its agencies will promote the use of sustainable buildings principles and practices through meetings of the SOC and its succeeding employee working groups, and will utilize the new USDA Sustainable Operations website ([www.greening.usda.gov](http://www.greening.usda.gov)) to post policies, practices, and success stories of agency projects.

##### **4.2 Outreach and Awareness**

USDA will continue to support outreach and awareness initiatives, such as the “You Have The Power” campaign to promote the SBIP and sustainability in the Department’s practices and processes. USDA will also continue to incorporate sustainable buildings information into its Facilities Energy Program’s website (<http://www.usda.gov/energyandenvironment/>).

#### **5.0 TRACKING AND REPORTING**

Tracking and reporting on the progress Executive Agencies and Departments are making toward reaching the sustainable buildings goals is a requirement of EO 13423. OMB will track the progress of meeting sustainable buildings requirements through its Energy Management and Environmental Stewardship Scorecards. Executing the SBIP and implementing the *Guiding Principles* will help USDA meet the performance metrics of these two OMB scorecards.

Also, the Interagency Sustainability Working Group (ISWG) will address the reporting procedure to be used in measuring progress toward meeting the sustainable buildings goals of EO 13423. The ISWG, which is chaired by the U.S. Department of Energy's Federal Energy Management Program (FEMP), is an interagency forum that focuses on sustainability topics related to buildings. Based on the findings and recommendations of this workgroup, USDA will formulate the means to implement within the Department tracking and reporting procedures.



## 6.0 ACTION ITEM CHECKLIST AND MILESTONES

The Action Item Checklist will be used to measure USDA's commitment to implementation of the *Guiding Principles* and track the Department's progress in complying with EO 13423.

### Action Item Checklist and Milestones

ACTION ITEM	RESPONSIBLE AGENCY OR OFFICE	TARGET INITIATION DATE	TARGET COMPLETION DATE	ACTUAL COMPLETION DATE
<b>PROGRAMMING AND IMPLEMENTATION</b>				
Develop/identify a cross functional team responsible for decision-making directly related to the execution of the SBIP.		05/31/07	09/30/07	06/30/07 <i>( completion pre-dates the development of the SBIP)</i>
Perform a "gap analysis" of existing policies, programs, criteria, authorities, and specifications that address sustainable buildings goals and identify shortfalls.		09/30/07	03/31/08	
Establish definitions and assignment of responsibilities for: 1) functional relationships in the decision-making process; 2) key players; and 3) the chain of command establishing the commitment for the approval process		09/30/07	03/31/08	
Establish procedures for measuring compliance with established mandates, goals, targets, and scorecards.		09/30/07	03/31/08	
Create a strategy for addressing sustainable buildings in capital planning and budgeting per OMB Circular A-11 Part 7 Sec.300 – Planning, Budgeting, Acquisition, and Management of Capital Assets and USDA's CPIP		09/30/07	03/31/08	
Describe how the Sustainable Buildings Program is being coordinated with the Environmental Management System (EMS) and/or Asset Management Plan.		09/30/07	03/31/08	
Create a strategy for promotion of the plan to the field by education and training		09/30/07	03/31/08	
Create a strategy for communication of the plan to the authority with jurisdiction to incorporate plan/goals into their services		09/30/07	03/31/08	
Establish a procedure to incorporate the <i>Guiding Principles</i> into criteria, specifications, and contract language for new construction and major renovations and ultimately into existing building operation and maintenance.		09/30/07	03/31/08	

Establish specific sustainability performance targets for meeting goals in the <i>Guiding Principles</i> .		10/31/07	04/30/08	
Develop a strategy to address sustainability opportunities for those building agencies determined “Not applicable” to all of the 5 <i>Guiding Principles</i> .		11/30/07	05/31/08	
Conduct a sustainability assessment of the existing building capital asset portfolio subject to EO 13423; including identification of assets that meet the five <i>Guiding Principles</i> .		12/31/07	06/30/08	
Establish agency policy that all new construction or major modifications will include establishing a cross functional team with representation from sustainable design, energy, environment, commissioning, facilities, and other green building qualifications for the design, construction, and commissioning of the project.		03/31/08	09/30/08	
Modify all pertinent agency policies to incorporate <i>Guiding Principles</i> and correct other shortfalls identified in the gap analysis.		06/30/08	06/30/09	
<b>AGENCY TRACKING AND REPORTING</b>				
Define the unit of measurement for tracking/reporting agency progress (e.g., # of certified buildings, etc.)		09/30/07	03/31/08	
Establish a procedure(s) to identify and track new construction and major renovation projects and determine if the <i>Guiding Principles</i> were incorporated into criteria, specifications, and contract language and ultimately into existing building operations and maintenance.		09/30/07	03/31/08	
Develop semi-annual system for reporting agency progress towards addressing the <i>Guiding Principles</i> in all building life cycle stages: <ul style="list-style-type: none"> <li>• Siting</li> <li>• Design</li> <li>• Construction</li> <li>• Operations &amp; maintenance</li> <li>• End of life</li> </ul>		09/30/07	03/31/08	
Establish a process to track and report existing facilities continuous commissioning strategy success.		12/31/07	06/30/08	
Identify and prioritize existing facilities for a continuous commissioning strategy, which addresses key environmental aspects, including energy use and IEQ (What does that stand for).		12/31/07	12/31/08	

Report into High Performance Buildings database		12/31/07	06/30/08	
Institute measurement, verification, and training to ensure continual improvement.		03/30/08	03/30/09	
Begin semi-annual reporting of Agency progress toward meeting the <i>Guiding Principles</i> in all building life cycle stages: <ul style="list-style-type: none"> <li>• Siting</li> <li>• Design</li> <li>• Construction</li> <li>• Operations &amp; maintenance</li> <li>• End of life</li> </ul>		06/30/08	recurring	
Develop corrective action plans for addressing shortcomings in implementation		6/30/08	6/30/09	

## **7.0 RESOURCES AND REFERENCES**

### **7.1 USDA DR-5500-001 (Section 8(d))**

In accordance with USDA policy established herein USDA agencies and staff offices, as applicable, shall:

Apply Energy Star Building Design, and/or Laboratories for the 21<sup>st</sup> Century (Labs21) approach, and/or design for, at a minimum, a LEED Silver rating, as appropriate, in the design and construction or major renovation of USDA covered facilities.

### **7.2 USDA Electric Metering Guidance**

This document provides guidance for USDA agencies to apply, as appropriate, to their respective approaches to complying with the metering requirements of the EPACT 2005. The guidance is located on the Internet at:

<http://www.usda.gov/energyandenvironment/facilitiesEnergy/electric.htm>.

### **7.3 USDA Renewable Energy Guidance**

This document provides an overview of renewable energy, discusses strategies for purchasing green power and renewable energy certificates, and establishes requirements for USDA agencies to report their progress in complying with the EPACT 2005. The guidance is located on the Internet at: <http://www.usda.gov/energyandenvironment/facilitiesEnergy/renew.htm>.

### **7.4 Building Commissioning Resources**

- *The Building Commissioning Guide*, U.S. General Services Administration (GSA), 2005. [www.wbdg.org](http://www.wbdg.org).
- *National Institute of Building Sciences Commissioning Process Guideline 0*. [www.nibs.org](http://www.nibs.org).
- *LEED-NC Version 2.2 Reference Guide*, U.S.Green Building Council. [www.usgbc.org](http://www.usgbc.org).

### **7.5 OMB Environmental Stewardship Scorecard**

The Environmental Stewardship Scorecard contains two measurable criteria directly linked to sustainability. The first is Green Purchasing that is a comprehensive, written green purchasing plan that includes recycled content products, Energy Star/energy efficient products, biobased products, and environmentally preferable products. The second is the implementation of a Sustainability Design and Construction Plan. Implementation of the Department's SBIP will be a significant factor in USDA achieving "green" progress and status ratings on this scorecard.

## **7.6 OMB Energy Management Scorecard**

The Energy Management Scorecard has several performance metrics directly related to sustainability. These include energy intensity reduction; renewable energy consumption; electric metering of buildings; energy efficient design for buildings; and water conservation. Implementing the requirements of EO 13423 and this SBIP will significantly impact USDA's achievement of "green" progress and status ratings on this scorecard.

## **7.7 High Performance Federal Buildings Database**

The data base ([www.eere.energy.gov/femp/highperformance/index.cfm](http://www.eere.energy.gov/femp/highperformance/index.cfm)) is used as a lessons learned for every new major, appropriate project and is to be entered into the database upon completion of the project.

## **7.8 Whole Building Design Guide**

The guide provides an Internet resource to a wide range of building-related design guidance, criteria, and technology, including sustainable energy design. The guide is a public/private-sector collaboration and is maintained by the National Institute of Building Sciences with support from GSA, DOE, the Navy and other public and private agencies. This guide can be accessed via the Internet at: <http://www.wbdg.org/>.

## **7.9 Energy Policy Act Of 2005, Title 1, Section 109, Federal Building Performance Standards**

Section 305(a) of the Energy Conservation and Production Act (42 U.S.C. 6834(a)) is amended--

(1) in paragraph (2)(A), by striking "CABO Model Energy Code, 1992 (in the case of residential buildings) or ASHRAE Standard 90.1-1989" and inserting "the 2004 International Energy Conservation Code (in the case of residential buildings) or ASHRAE Standard 90.1-2004"; and

(2) by adding at the end the following:

"(3)(A) <<NOTE: Deadline. Regulations.>> Not later than 1 year after the date of enactment of this paragraph, the Secretary shall establish, by rule, revised Federal building energy efficiency performance standards that require that--

"(i) if life-cycle cost-effective for new Federal buildings--

"(I) the buildings be designed to achieve energy consumption levels that are at least 30 percent below the levels established in the version of the ASHRAE Standard or the International Energy Conservation Code, as appropriate, that is in effect as of the date of enactment of this paragraph; and

“(II) sustainable design principles are applied to the siting, design, and construction of all new and replacement buildings; and

“(ii) if water is used to achieve energy efficiency, water conservation technologies shall be applied to the extent that the technologies are life-cycle cost-effective.

“(B) <<NOTE: Deadline.>> Not later than 1 year after the date of approval of each subsequent revision of the ASHRAE Standard or the International Energy Conservation Code, as appropriate, the Secretary shall determine, based on the cost-effectiveness of the requirements under the amendment, whether the revised standards established under this paragraph should be updated to reflect the amendment.

“(C) In the budget request of the Federal agency for each fiscal year and each report submitted by the Federal agency under section 548(a) of the National Energy Conservation Policy Act (42 U.S.C. 8258(a)), the head of each Federal agency shall include--

“(i) a list of all new Federal buildings owned, operated, or controlled by the Federal agency; and

“(ii) a statement specifying whether the Federal buildings meet or exceed the revised standards established under this paragraph.”.

## **7.10 CEQ Implementing Instructions for Executive Order 13423, Section X., Sustainable Design/High Performance Buildings**

### **A. Objectives**

Each agency shall pursue the following objectives regarding high performance buildings:

- Reduction in life-cycle cost of facilities’ environmental and energy attributes.
- Improvement in energy efficiency, water conservation, and utilization of renewable energy.
- Provision of safe, healthy, and productive built environments.
- Promotion of sustainable environmental stewardship.

To accomplish these objectives, each agency shall locate, design, construct, maintain, and operate its buildings and facilities in a resource-efficient, sustainable, and economically viable manner, consistent with its mission.

### **B. Requirements**

(1) New construction and renovation. Beginning with the FY 2007 funding cycle, when planning the funding and design for construction of buildings that meet the agency defined capital asset threshold, each agency shall meet or exceed statutory goals and address each of the five *Guiding Principles for Federal Leadership in High Performance*

*and Sustainable Buildings (Guiding Principles)*<sup>5</sup>. Written justification must be provided to OFEE and OMB if an agency proposes not to comply.

In order to apply the *Guiding Principles* to building projects, all business cases for new building construction or major renovations, developed per OMB A-11, Part 7, Section 300, shall incorporate the *Guiding Principles* to the greatest extent practicable. These requirements apply to construction of new Federal buildings; new, renegotiation, or extension of leases for Federal occupancy, or major renovation projects.

(2) Existing buildings. In addition, by the end of 2015, agencies shall meet the 15 percent goal in EO 13423 section 2(f)(ii) for incorporating the sustainable practices in the *Guiding Principles* into their Federal capital asset building inventory. The 15 percent goal for existing buildings applies to an agency's full building inventory as it exists in FY 2015, including any new buildings brought on line and excluding any unneeded buildings disposed of or sold prior to 2015. Therefore, agencies should strongly consider incorporating sustainable practices into projects underway and selling or disposing of unneeded assets.

(3) High performance building plans. By August 15, 2007, and annually thereafter, each agency shall submit a plan to OMB and OFEE that addresses how the agency will ensure that (1) all new facilities and renovation projects implement design, construction, and maintenance and operation practices in support of the sustainable design/high-performance buildings goals of the EO and statutory requirements and (2) existing facilities' maintenance and operation practices in support of the goals of the EO. Within 45 days of the issuance of the implementing instructions, OMB will issue guidance identifying required components to be addressed in the agency plans. At a minimum, the plans shall address the following:

- Employment of integrated design principles, optimization of energy efficiency and use of renewable energy, protection and conservation of water, enhancement of indoor environmental quality, and reduction of environmental impacts of materials in accordance with the *Guiding Principles* and the other building and construction-related EO 13423 goals and instructions.
- An assessment of policy, criteria, contracts, and other areas, identifying gaps in the agency's sustainable building program.
- Key action items, including major milestones and responsible parties.

### **C. High Performance Federal Buildings Database**

Each agency shall report its success stories and lessons learned for at least one major building project per year into the High Performance Federal Buildings Database, [www.eere.energy.gov/femp/highperformance/index.cfm](http://www.eere.energy.gov/femp/highperformance/index.cfm), unless the agency does not have an applicable project to report. The Energy Star® rating of each facility's energy performance shall be included in each success story.

### **D. Leased Facilities**

To the greatest extent practicable, each agency shall include a preference for buildings that meet the goals of the *Guiding Principles* in the selection criteria for acquiring leased buildings. When entering into leases for Federal occupancy, including the renegotiation or extension of existing leases, agencies shall include criteria encouraging lease provisions that support the *Guiding Principles*. Build-to-suit lease solicitations shall incorporate criteria for sustainable design and development, energy efficiency, and verification of building performance in accordance with the *Guiding Principles*.

### **E. Technical Guidance**

Technical Guidance for implementing the *Guiding Principles* and other best practices developed by the Interagency Sustainability Working Group (ISWG) can be found in the Whole Building Design Guide, [www.wbdg.org](http://www.wbdg.org). Contents of the WBDG include clarification of requirements; related mandates; additional recommendations and considerations; and resources for implementation, including model contract and specification language per the *Federal Green Construction Guide for Specifiers*. The ISWG shall review the *Guiding Principles* and Technical Guidance periodically for updates and to consider adopting additional principles or goals addressing issues such as conservation plantings, integrated pest management, deconstruction, and siting.