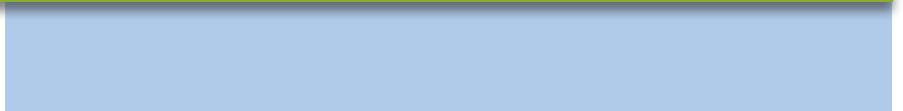
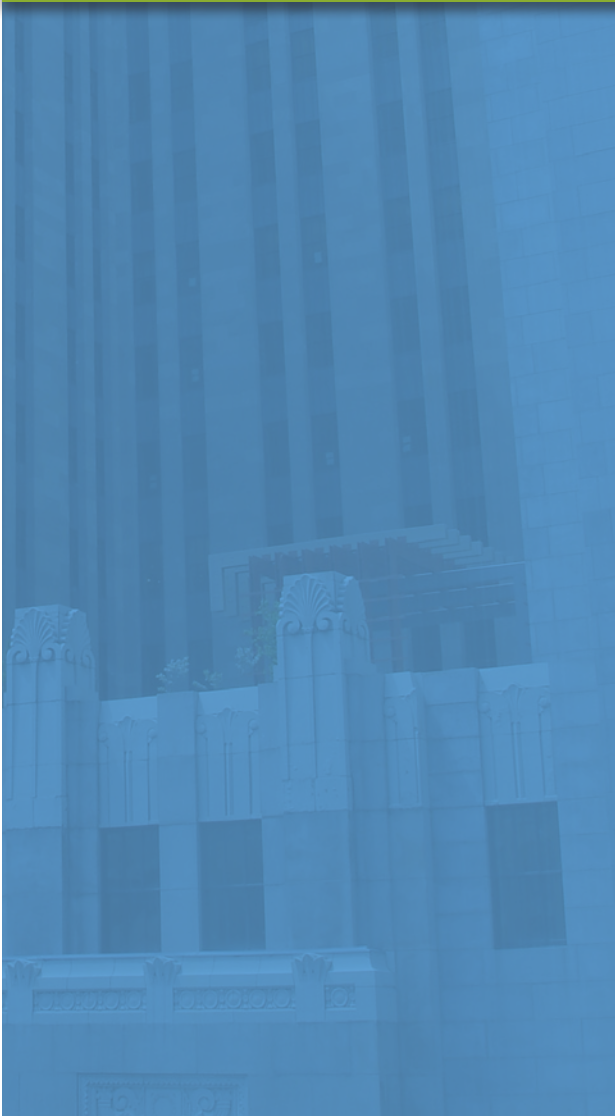




ENERGY MANAGEMENT AND CONSERVATION PROGRAM
FISCAL YEAR 2010 ANNUAL REPORT



This Page Intentionally Blank

U.S. ENVIRONMENTAL PROTECTION AGENCY

**ENERGY MANAGEMENT AND CONSERVATION
PROGRAM**

FY 2010 ANNUAL REPORT

This Page Intentionally Blank

CONTENTS

Fiscal Year (FY) 2010 Highlights	3
U.S. Environmental Protection Agency Energy Management and Conservation Program.....	7
GHG Emissions Reduction Efforts and Inventory.....	7
Reported Scope 1 and 2 GHG Emission Reductions.....	7
Scope 1 and 2 GHG Emission Reductions Without Green Power Credits.....	8
Reported Scope 3 GHG Emissions.....	9
Energy Efficiency Performance.....	9
Current Energy Retrofits and Capital Improvement Projects.....	10
EISA Section 432 Implementation—Energy Assessments.....	11
Renewable Energy and Green Power.....	14
Advanced Metering.....	14
Water Conservation.....	15
Water Conservation Retrofits and Capital Improvements.....	16
EISA Section 423 Implementation—Water Assessments.....	18
Nonpotable Water Baseline.....	20
Sustainable Building Design and High Performance Buildings.....	20
Building Sustainability Assessments.....	20
Building Management Plan Guidelines.....	21
Strategic Plans.....	21
GreenCheck.....	21
Green Building Accomplishments.....	22
Improving Performance of New GSA-Provided Buildings.....	22
ENERGY STAR®.....	22
On Track for the Future.....	23
Revision to Energy Baseline	Appendix A
List of Excluded Facilities	Appendix B
EPA’s FY 2010 EPAAct 2005 Goal Subject Building Inventory.....	Appendix C

This Page Intentionally Blank

FISCAL YEAR (FY) 2010 HIGHLIGHTS

The U.S. Environmental Protection Agency (EPA) has consistently demonstrated leadership among federal agencies in the challenge to reduce its environmental footprint and promote sustainability. In addition to continuing to exceed federal requirements for energy and water performance, in 2010, EPA won two Federal Energy and Water Management Awards and won jointly with the U.S. General Services Administration (GSA) an Honorable Mention in the Workplace Innovation category of GSA's Real Property Awards.

In FY 2010, EPA focused on meeting the new federal requirements included in Executive Order (EO) 13514, including setting greenhouse gas (GHG) emission reduction targets and drafting its Strategic Sustainability Performance Plan (SSPP), completing the contracting for three major energy efficiency projects, implementing its water conservation plan, and assessing and furthering its progress toward meeting high performance sustainable buildings requirements.

In June 2010, in accordance with the requirements of EO 13514, EPA submitted its SSPP to the U.S. Office of Management and Budget (OMB) and Council on Environmental Quality (CEQ). EPA's SSPP reiterates the Agency's plans to reduce GHG emissions, energy, water, waste, and other resource use, and to incorporate sustainable design and operations across its facilities.

Energy Intensity Down 18.3 Percent From FY 2003

In FY 2010, EPA continued to exceed federal energy conservation requirements. The Agency's overall energy intensity reported in FY 2010 was 317,577 British thermal units per gross square foot (Btu/GSF), 18.3 percent lower than its FY 2003 baseline intensity (the required reduction over this period is 15 percent), and 0.2 percent lower than its FY 2009 intensity. When green power purchases and source energy savings credits are taken into account, the Agency actually reduced its energy intensity 22.8 percent from the FY 2003 baseline.

In August and September 2010, EPA completed construction of Phase II, continued construction of Phase III, and awarded a contract for construction of Phase IVA of an Infrastructure Replacement Project at the Agency's second largest laboratory, the Andrew W. Breidenbach Environmental Research Center (AWBERC) in Cincinnati, Ohio. The project includes replacing mechanical systems with more efficient systems that reduce energy consumption. At the end of FY 2010, EPA awarded contracts for the construction of a heat recovery system for its largest laboratory, New Main in Research Triangle Park (RTP), North Carolina, which is expected to reduce energy intensity at that facility by 7 to 9 percent when construction is completed in FY 2011. EPA also awarded contracts for a fume hood and laboratory controls improvement project for two of four laboratory wings at New Main.

Water Intensity Down 18.7 Percent From FY 2007

In FY 2010, EPA reported water intensity of 28.5 gallons per gross square foot (GSF), which is 8.5 percent lower than its FY 2009 water intensity, for a total reduction of 18.7 percent relative to its FY 2007 water intensity baseline. These reductions were due in part to water conservation projects at AWBERC in Cincinnati, Ohio; the National Health and Environmental Effects Research Laboratory (NHEERL) in RTP, North Carolina; and the Western Ecology Division (WED) Laboratory in Corvallis, Oregon. EPA's water conservation performance in FY 2010 significantly

exceeds the 6 percent reduction goal from an FY 2007 baseline required by EO 13423. In FY 2010, EPA received a Federal Energy and Water Management Award for the quality and breadth of its water conservation program.

GHG Emissions Inventory and Progress

In January 2010, EPA submitted its Scope 1 and 2 GHG emissions reduction target to CEQ and OMB in accordance with the requirements of EO 13514. The Agency committed to reducing its combined Scope 1 and 2 GHG emissions 25 percent by FY 2020 from an FY 2008 baseline. In addition, EPA quantified initial estimates of its baseline FY 2008 Scope 3 GHG emissions and submitted estimates for a required subset of its overall Scope 3 GHG emissions in June 2010. The Agency also submitted a target for reducing the required categories of Scope 3 GHG emissions by 8 percent from the FY 2008 baseline by FY 2020.

Thanks to ongoing energy efficiency projects and other efforts, EPA is on track to meet or exceed its Scope 1 and 2 GHG emissions reduction target. The Agency's purchases of green power and renewable energy certificates (RECs) enabled EPA to report total Scope 1 and 2 GHG emissions of 28,900 metric tons of carbon dioxide equivalent (MTCO₂e) in FY 2010, resulting in a net Scope 1 and 2 GHG emissions reduction of 111,880 MTCO₂e, or approximately 79.5 percent, since FY 2008.

EPA estimates its FY 2008 baseline for Scope 3 GHG emissions as 67,315 MTCO₂e and its FY 2010 emissions as 68,146 MTCO₂e, an increase of 1.2 percent. An unexpected increase in air travel in FY 2010 prevented EPA from making progress toward its reduction goals, but it is anticipated that deployment of significant new videoconferencing facilities across the Agency and a tighter travel budget will lead to Scope 3 GHG emission reductions in FY 2011. The Agency also anticipates meeting or exceeding its Scope 3 emissions reduction target by FY 2020.

Green Buildings Promote *Guiding Principles*

Using EPA's projected FY 2015 Federal Real Property Profile (FRPP) inventory, 8.2 percent (by number of buildings) of EPA's FRPP buildings measuring greater than 5,000 square feet (as specified in EO 13514) meet the *Guiding Principles for High Performance and Sustainable Buildings (Guiding Principles)*. In FY 2010, EPA occupied 10 large buildings certified Gold or Silver under the U.S. Green Building Council's (USGBC's) Leadership in Energy and Environmental Design for New Construction (LEED[®]-NC) rating system, including the sustainably renovated, historic John W. McCormack Post Office and Courthouse in Boston, Massachusetts, home of the Agency's Region 1 Office. The Agency also occupied three buildings certified Platinum or Gold under LEED for Existing Buildings (LEED-EB) and is pursuing LEED for Commercial Interiors (LEED-CI) certification at two more offices. Five office buildings that EPA occupies received the ENERGY STAR[®] label in FY 2010, and the Agency performed sustainable building assessments at seven laboratories in calendar year 2010. In summer 2010, EPA and GSA jointly received an Honorable Mention in the Workplace Innovation category of GSA's Real Property Awards for the John W. McCormack Post Office and Courthouse project.

Green Power Purchases Offset 100 Percent of Electricity

In FY 2010, EPA continued purchasing enough green power to offset 100 percent of its Agencywide electricity use via delivered green power and RECs. Two major contracts, one signed in FY 2009 and one in early FY 2010, ensured that EPA offset 100 percent of its electricity use throughout FY 2010. The Agency also signed contracts in FY 2010 that ensure EPA will offset 100 percent of its electricity use throughout FY 2011.

Advanced Metering on Track

In FY 2010, EPA awarded construction contracts for new advanced metering hardware at six laboratory facilities and one support building. Advanced metering hardware is now installed or under construction to capture 61 percent of Agencywide reportable energy consumption.

This Page Intentionally Blank

U.S. Environmental Protection Agency
Energy Management and Conservation Program
FY 2010 ANNUAL REPORT

On June 2, 2010, EPA submitted to OMB and CEQ its SSPP, a comprehensive, multiyear planning document that identifies targets for reducing Agencywide GHG emissions by FY 2020 and outlines steps the Agency will take to achieve those reductions. Through this report, EPA outlines its strategy for meeting the federal requirements of EO 13514 by reiterating its plans to reduce energy, water, waste, and other resource use, and to incorporate sustainable design and operations across its facilities. The report details Agency key priorities and strategies for achieving its plans, including GHG emissions inventories and reduction through energy efficiency, renewable energy, and transportation management, as well as high performance sustainable buildings, regional and local planning, water conservation, recycling, pollution prevention, sustainable acquisition, and electronics stewardship. EPA's SSPP is available at <www.epa.gov/greeningepa/pubs/index.htm#sspp>.

GHG EMISSIONS REDUCTION EFFORTS AND INVENTORY

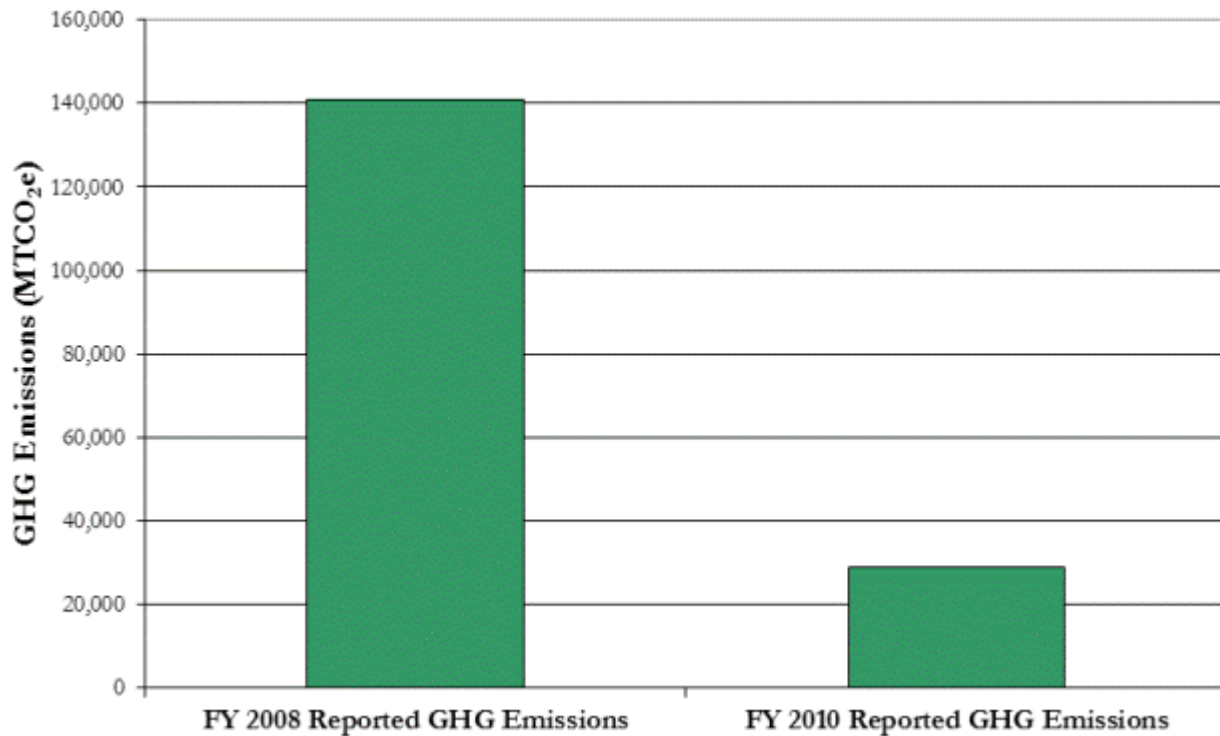
On January 4, 2010, EPA submitted its initial FY 2008 Scope 1 and 2 GHG emissions inventory and its reduction target to CEQ and OMB in accordance with the requirements of EO 13514. The Agency committed to reducing its combined Scope 1 and 2 GHG emissions 25 percent by FY 2020 from an FY 2008 baseline of 140,780 MTCO₂e.¹ EPA's long-term Scope 1 and 2 GHG emissions reduction goal is based on improving energy and transportation efficiency at its reporting laboratories while using green power purchases as a short-term "cushion" strategy. More details on the Agency's GHG emissions reduction strategies are available in the Agency's SSPP.

Reported Scope 1 and 2 GHG Emission Reductions

EPA's energy performance currently exceeds the reduction requirements of EO 13423 and the Energy Independence and Security Act of 2007 (EISA), even though EPA's energy intensity has been relatively flat in FY 2009 and FY 2010. Under CEQ guidance and generally accepted GHG accounting principles, EPA's reported emissions reflect the benefits of green power purchases. Because of the Agency's purchases of green power and RECs, EPA is reporting total FY 2010 Scope 1 and 2 GHG emissions of 28,900 MTCO₂e, which represents a reported Scope 1 and 2 GHG emissions reduction of 111,880 MTCO₂e, or approximately 79.5 percent, since FY 2008 (see Figure 1).

¹ Since January 2010, EPA has refined its FY 2008 GHG emissions data. This number represents EPA's current estimate of its combined FY 2008 Scope 1 and 2 emissions, which matches the data in the comprehensive FY 2008 GHG emissions inventory that EPA submitted to OMB and CEQ in January 2011. EPA's estimate of its combined FY 2008 Scope 1 and 2 emissions when its reduction target was submitted in January 2010 was 140,911 MTCO₂e.

Figure 1. Scope 1 and 2 GHG Emissions as Reported by EPA per CEQ Guidance, FY 2008 and FY 2010



Scope 1 and 2 GHG Emission Reductions Without Green Power Credits

Back in FY 2008, EPA had reduced its energy intensity 18.1 percent from its FY 2003 baseline, well ahead of that year's 9 percent reduction requirement of EO 13423 and EISA. Since FY 2008, EPA's energy reduction progress has leveled out. With construction of a heat recovery system at EPA's New Main facility in RTP, North Carolina, under contract, and fume hood and laboratory control upgrade projects being implemented at the same facility, and with continued energy reduction progress at the Agency's Cincinnati, Ohio, facilities, EPA anticipates again seeing significant energy intensity reductions in FY 2011.

EO 13514 set a new baseline year for GHG emission reductions (FY 2008), but did not change the energy reduction baseline year (still FY 2003). Thus, the new FY 2008 baseline year for Scope 1 and 2 GHG emissions does not allow EPA to take advantage of its early energy successes between FY 2003 and FY 2008. Because EPA's energy reduction progress leveled out in FY 2009 and FY 2010, EPA has not yet achieved Scope 1 and 2 GHG emission reductions based solely on energy intensity reductions and must rely on green power credits for FY 2010. EPA does not expect to use green power credits in FY 2011 to meet its Scope 1 and 2 GHG emissions reduction goals.

Without the benefit of green power purchases, EPA's FY 2010 Scope 1 and Scope 2 GHG emissions increased slightly relative to the Agency's FY 2008 baseline—by 1,199 MTCO₂e, or an increase of approximately 0.9 percent. By reinvigorating its progress reducing energy intensity in FY 2011, EPA should see Scope 1 and 2 GHG emission reductions next year regardless of green power purchases.

Reported Scope 3 GHG Emissions

In FY 2010, EPA quantified initial estimates of its baseline FY 2008 Scope 3 GHG emissions and identified targets for reducing them, which it submitted to CEQ and OMB on June 2, 2010. Acknowledging that the quality of its Scope 3 GHG emissions inventory will continue to improve over time, EPA used the best emissions data available and CEQ's Scope 3 Target Tool to develop its emission reduction targets. Based on current estimates, the Agency plans to reduce the required categories of Scope 3 GHG emissions 8 percent overall by FY 2020. EPA estimates its FY 2008 baseline for these emissions as 67,315 MTCO₂e and its FY 2010 emissions as 68,146 MTCO₂e, an increase of 1.2 percent. As data quality continues to improve and federal GHG accounting guidance and reporting requirements evolve, EPA anticipates including additional and likely significant sources of Scope 3 emissions within its comprehensive GHG emissions inventory in the future.

EPA's air travel increased significantly in FY 2010 relative to FY 2008; this was not expected, and caused an increase in the Agency's Scope 3 GHG emissions. With the installation (already completed) of 50 new video conferencing facilities through EPA Headquarters, its 10 regional offices, and major research centers, and smaller FY 2011 travel budgets, EPA expects to make significant progress reducing its Scope 3 GHG emissions in FY 2011.

ENERGY EFFICIENCY PERFORMANCE

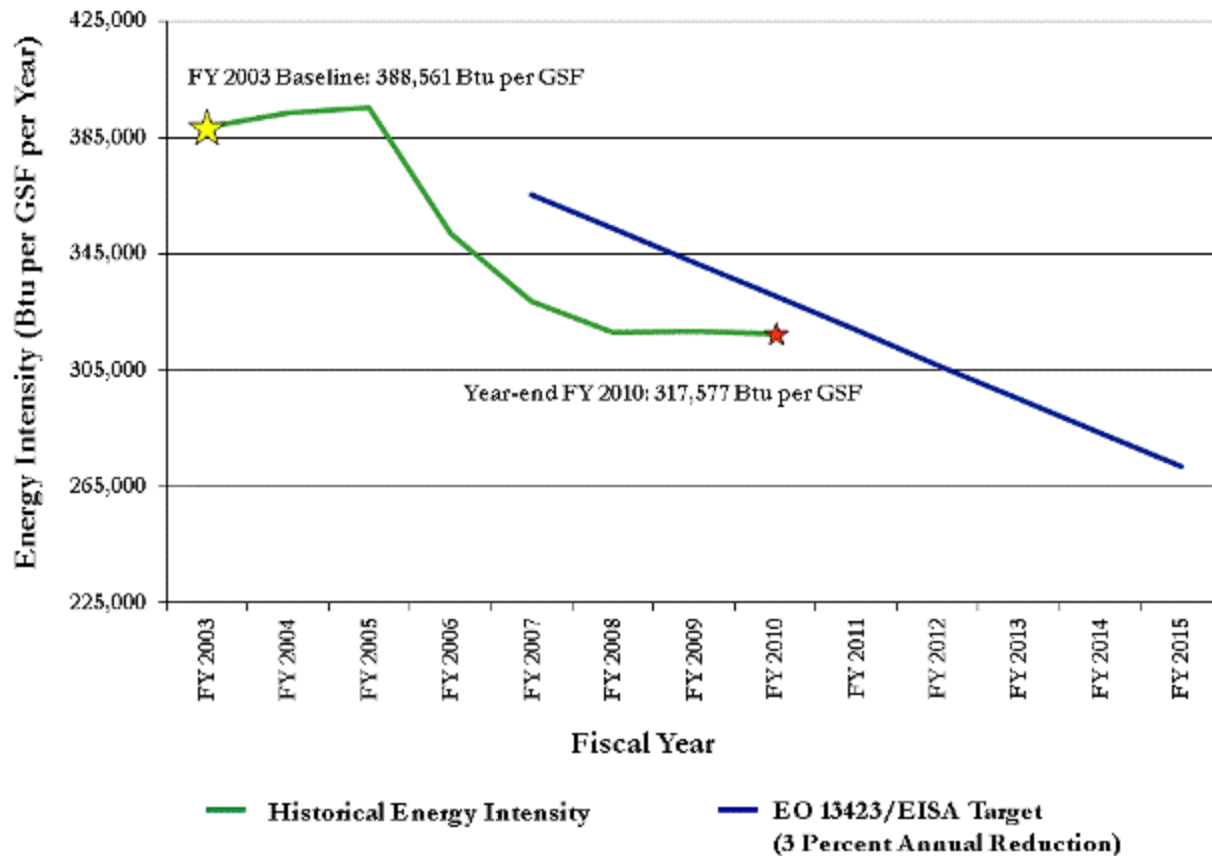
EPA FY 2010 Energy Intensity Is Down 18.3 Percent From FY 2003 Baseline

In FY 2010, EPA's energy intensity remained relatively flat at 317,577 Btu per GSF² (see Figure 2); however, that figure is 18.3 percent below the FY 2003 baseline. Under EISA and EO 13423, EPA was required to reduce its energy intensity 15 percent in FY 2010 from its FY 2003 baseline. Extreme temperatures in both summer and winter may have affected EPA's ability to reduce its energy intensity further in FY 2010.

Several new projects now underway will allow EPA to realize significant energy reduction progress in FY 2011. At the end of FY 2010, EPA awarded a contract for the construction of a heat recovery system at its largest laboratory, New Main in RTP, North Carolina. In addition, EPA awarded contracts for an upgrade of fume hoods and controls at two of four laboratory wings at New Main. EPA also awarded a construction contract for Phase IVA of the Infrastructure Replacement Project (IRP) at AWBERC in Cincinnati, Ohio, which includes upgrades to the building chiller plant and control systems. These new initiatives, along with the August 2010 completion of Phase II of AWBERC's IRP and continued work on Phase III, are expected to produce significant energy intensity reductions in FY 2011.

² Minor historical adjustments and updates to account for small quantities of fuel consumed in emergency/backup generators resulted in revisions to EPA's FY 2003 energy intensity baseline. See Appendix A for details.

Figure 2. EPA Average Energy Intensity Relative to EO 13423/EISA Target



Current Energy Retrofits and Capital Improvement Projects

In FY 2010, EPA made progress on the energy efficiency efforts listed in Table 1.

Table 1. Energy Conservation Projects Underway or Completed in FY 2010		
Facility	Improvements	Savings
AWBERC in Cincinnati, Ohio	Continued with multiyear IRP, including upgrading mechanical equipment such as fans, pumps, and motors; installing high performance variable air volume (VAV) fume hoods; manifold laboratory exhaust systems; improving the air distribution system (including ductwork and air handling units [AHUs]); eliminating unnecessary one-pass air; and implementing a heat recovery system.	Once the IRP is completed, EPA projects energy reduction of more than 41 billion Btu, or 25 percent, compared with the pre-renovation baseline. EPA completed construction of Phase II in August 2010. Phase III is projected to be finished in February 2011. EPA awarded the construction of Phase IVA in September 2010.

<i>Facility</i>	<i>Improvements</i>	<i>Savings</i>
New Main in RTP, North Carolina	Completed design of a heat recovery system, which covers three of four laboratory wings, on June 30, 2010. Awarded construction in September 2010, with completion expected by end of FY 2011.	Once the heat recovery project is completed, EPA projects energy consumption savings of nearly 28 billion Btu, or 7 to 9 percent, compared with FY 2008.
	Completed proof of concept pilot retrofits of fume hoods, upgraded laboratory controls, and reduced airflow to offices. Limited nighttime supply air reheat at New Main, based on earlier pilot projects. Issued contracts for fume hood and control upgrades for two of four laboratory wings in September 2010.	EPA expects energy savings of 14.8 billion Btu per year, representing 4.2 percent of the facility's FY 2009 energy consumption.
Chapel Hill Laboratory in Chapel Hill, North Carolina	Terminal box calibration and building automation system repairs.	When completed in FY 2012, EPA anticipates 2 percent energy savings compared with FY 2010 baseline.
	Manifolding exhaust fans, replacing constant volume system with VAV, converting air handling units to VAV, replacing fume hoods with high performance models, and replacing existing air flow stations.	When all projects are completed in FY 2015, EPA anticipates 21 percent savings compared with an FY 2009 baseline.
Atlantic Ecology Division (AED) in Narragansett, Rhode Island	Construction of Phase I of a multiyear IRP began in August 2010. The multiphased project includes renovating chemical laboratories, replacing air handlers and mechanical and boiler systems, and installing a new ground source heat pump (GSHP) system.	Once the IRP is completed, EPA projects an energy reduction of 8,274 million Btu, or 30 percent, compared with an FY 2009 baseline; the IRP's payback period is approximately 25 years. Construction of Phase I is expected to be completed by the end of FY 2011. Phase 2 design is expected to be awarded in FY 2011.
Science and Technology Center (STC) in Kansas City, Kansas	Recommissioning and O&M improvements, including resequencing boilers.	Completed June 2010. The facility's FY 2010 energy consumption was 3.9 percent lower than in FY 2009.

EPA excluded one facility from energy reporting following the criteria laid out in the Federal Energy and Management Program's (FEMP's) *Guidelines for Establishing Criteria for Excluding Buildings*; this facility is listed in Appendix A.

EISA Section 432 Implementation—Energy Assessments

In FY 2010, during its second round of EISA-mandated energy assessments and recommissioning, EPA focused on facilities (see Table 2) that represent approximately 26 percent of the total energy use of EPA's covered facilities (based on FY 2008 data, per EISA Section 432 guidance).

The Agency collected information on potential energy conservation measures and compiled the associated implementation costs, estimated annual energy savings, and estimated annual cost savings in a comprehensive report submitted to FEMP on June 18, 2010. See Table 2 for a list of the reported measures.³

Table 2. Potential Energy-Saving Projects From EISA Energy Assessments		
<i>Facility</i>	<i>Potential Projects</i>	<i>Projected Savings (Approximate)</i>
Environmental Science Center (ESC) in Fort Meade, Maryland	Installing smaller packaged boilers.	7,587 million Btu
	Replacing existing interior lighting fixtures.	1,022 million Btu
	Replacing parking lot light fixtures.	245 million Btu
	Retrofitting chiller plant and optimizing cooling towers.	178 million Btu
	Using solar hot water heating.	30 million Btu
New England Regional Laboratory in Chelmsford, Massachusetts	Replacing existing fume hoods with low-flow fume hoods.	1,953 million Btu
	Recovering exhaust air energy.	1,725 million Btu
	Resetting static pressure.	613 million Btu
	Installing a dry cooler to supplement the process chiller.	134 million Btu
	Using solar hot water heating.	31 million Btu
Gulf Ecology Division (GED) in Gulf Breeze, Florida	Upgrading the heating, ventilation, and air conditioning (HVAC) to a VAV system.	1,338 million Btu
	Replacing a chiller and retrofitting its controls.	604 million Btu
	Replacing existing fume hoods with low-flow VAV fume hoods.	542 million Btu
	Replacing windows.	72 million Btu
	Retrofitting penthouse conditioning.	37 million Btu
	Adjusting exhaust fans.	37 million Btu
	Insulating laboratory ceilings.	35 million Btu
	Using solar hot water heating.	31 million Btu
National Exposure Research Laboratory in Athens, Georgia	Implementing VAV controls conversion.	2,387 million Btu
	Reducing airflow in the administrative and server rooms.	478 million Btu
	Improving the chiller plant controls and operations.	223 million Btu

³ Because of temporary heating and cooling needs from initiating a new IRP at EPA's AED Laboratory in Narragansett, Rhode Island, the EISA findings for AED report an energy use increase. When the IRP is completed in FY 2015, it is projected to save 8,274 million Btu, or 30 percent, compared with a pre-project baseline.

<i>Facility</i>	<i>Potential Projects</i>	<i>Projected Savings (Approximate)</i>
STC in Kansas City, Kansas	Implementing a laboratory nighttime setback.	993 million Btu
	Installing laboratory occupancy sensors.	806 million Btu
	Installing a primary condensing boiler.	453 million Btu
	Installing burner controls in boiler plant.	421 million Btu
	Installing variable frequency drives (VFDs) on primary chillers.	491 million Btu
	Resetting chilled water and hot water loads.	223 million Btu
	Resetting the zone supply air temperature.	164 million Btu
	Installing a water-side economizer.	58 million Btu
National Vehicle and Fuel Emissions Laboratory (NVFEL) in Ann Arbor, Michigan	Replacing lighting fixtures, installing occupancy sensors and automated lighting controls, and increasing daylighting.	447 million Btu
AWBERC in Cincinnati, Ohio	Improving the air distribution system (including ductwork and AHUs); rezoning office and laboratory space to eliminate unnecessary one-pass air; and implementing a heat recovery system (These are the energy-saving measures of Phase III of AWBERC's ongoing multiyear IRP. For details, see Table 1 on page 10).	9,675 million Btu

EPA also began its third round of EISA energy assessments and recommissioning in fall 2010. For the round of EISA assessments to be reported in June 2011, the Agency plans to perform energy assessments and recommissioning of the High Bay facility and Building D at New Main in RTP, North Carolina; AWBERC in Cincinnati, Ohio; the WED Laboratory in Corvallis, Oregon; the Robert S. Kerr Environmental Research Center in Ada, Oklahoma; the Region 6 Laboratory in Houston, Texas; and the National Air and Radiation Environmental Laboratory (NAREL) in Montgomery, Alabama.

The EISA assessments EPA will report in June 2011 collectively represent nearly 23 percent of the energy use of the Agency's covered facilities (based on FY 2008 data, per EISA Section 432 guidance). EPA will assess non-EISA-covered facilities in FY 2011, including the Agency's National Exposure Research Laboratory and Radiation and Indoor Environments National Laboratory, both in Las Vegas, Nevada, and the Large Lakes Research Station in Grosse Ile, Michigan, reflecting EPA's policy that no major facility will be excluded from EISA energy and water assessment and recommissioning work.

Renewable Energy and Green Power

EPA Remains at 100 Percent Green Power, Completes Two Solar Projects

For more than a decade, EPA has been a leader among federal agencies in supporting the renewable energy market through its green power purchasing program. In FY 2010, EPA continued offsetting 100 percent of the estimated Agencywide electricity use at its 175 facilities across the country with delivered green power and RECs, as it has done since FY 2006. With the added benefit of unusually low REC prices last year, EPA finalized a contract for 130 million kilowatt hours (kWh) of RECs in June 2009 and signed an additional contract in November 2009 for 142.8 million kWh of RECs. These two major contracts support renewable energy generation from wind, landfill gas, and biomass resources in six states. Combined with five existing contracts, these green power purchases provided more than 287 million kWh of RECs and delivered green power to offset 100 percent of the Agency's electricity use throughout FY 2010. Looking ahead to FY 2011, EPA also procured green power contracts to purchase 257 million kWh of RECs, which, combined with three additional contracts, will ensure that EPA continues offsetting 100 percent of that year's Agencywide estimated electricity use.

Generally accepted GHG accounting principles allow EPA to benefit from its green power purchases when it reports its Scope 1 and 2 GHG emissions. Even though EPA plans to achieve its FY 2020 goal of a 25 percent reduction in GHG Scope 1 and 2 emissions through energy reductions alone, the Agency will continue to purchase green power as an additional method of reducing its reported GHG emissions and promoting the development of green power markets. In FY 2010, EPA's green power purchases helped EPA achieve its 79.5 percent reduction in its reported Scope 1 and 2 GHG emissions.

In April 2010, EPA installed a new 52.5 kilowatt (kW) polycrystalline photovoltaic (PV) system on the roof of Building B of the New Main campus in RTP, North Carolina. EPA used energy cost savings realized through completed energy conservation projects to fund the project. Building B draws directly from this power source, reducing the facility's demand for grid-delivered electricity. In the same month, Duke Power installed and began operating a 476-panel, 169 kW PV system on the roof of EPA's First Environments Early Learning Center (FEELC) in RTP, North Carolina, covering 13,000 square feet of roof. In summer 2010, EPA installed a sonic anemometer in the Building C plaza at New Main and subsequently collected wind speed and directional data through fall 2010. This data collection will inform a feasibility study of a vertical wind turbine at this location. In addition, EPA is managing a competitive procurement for a power purchase agreement (PPA), which will include a large PV array, at the Region 2 Laboratory in Edison, New Jersey.

Advanced Metering

Advanced Metering Hardware Is Installed or Under Construction to Capture 61 Percent of Agencywide Reportable Energy Consumption

EPA is well positioned to exceed the advanced metering requirements included in EISA and the Energy Policy Act of 2005 (EPA 2005), which specify advanced metering for electricity, steam, and natural gas. EPA's strategy calls for advanced metering to be implemented for all energy utilities and domestic water where it is cost-effective to do so.

In FY 2010, EPA awarded construction contracts for new advanced metering hardware at six laboratory facilities and one support building, which include the following:

- ESC in Fort Meade, Maryland
- AWBERC in Cincinnati, Ohio⁴
- Testing and Evaluation Center in Cincinnati, Ohio
- Center Hill Facility in Cincinnati, Ohio
- New Main Building in RTP, North Carolina⁵
- Chapel Hill Laboratory in Chapel Hill, North Carolina
- FEELC in RTP, North Carolina

By the end of FY 2010, EPA was capturing approximately 46 percent of its Agencywide reportable energy consumption with advanced metering hardware. New construction contracts are in place, and construction is underway to capture an additional 14.9 percent of Agencywide reportable energy consumption with advanced metering hardware. EPA also worked to improve the core functionality of its national advanced metering software system during FY 2010 and began developing a critical data quality module to ensure accurate collection and reporting of data transmitted from advanced metering hardware installed in the field.

WATER CONSERVATION

EPA Reduces FY 2010 Water Intensity 18.7 Percent From FY 2007

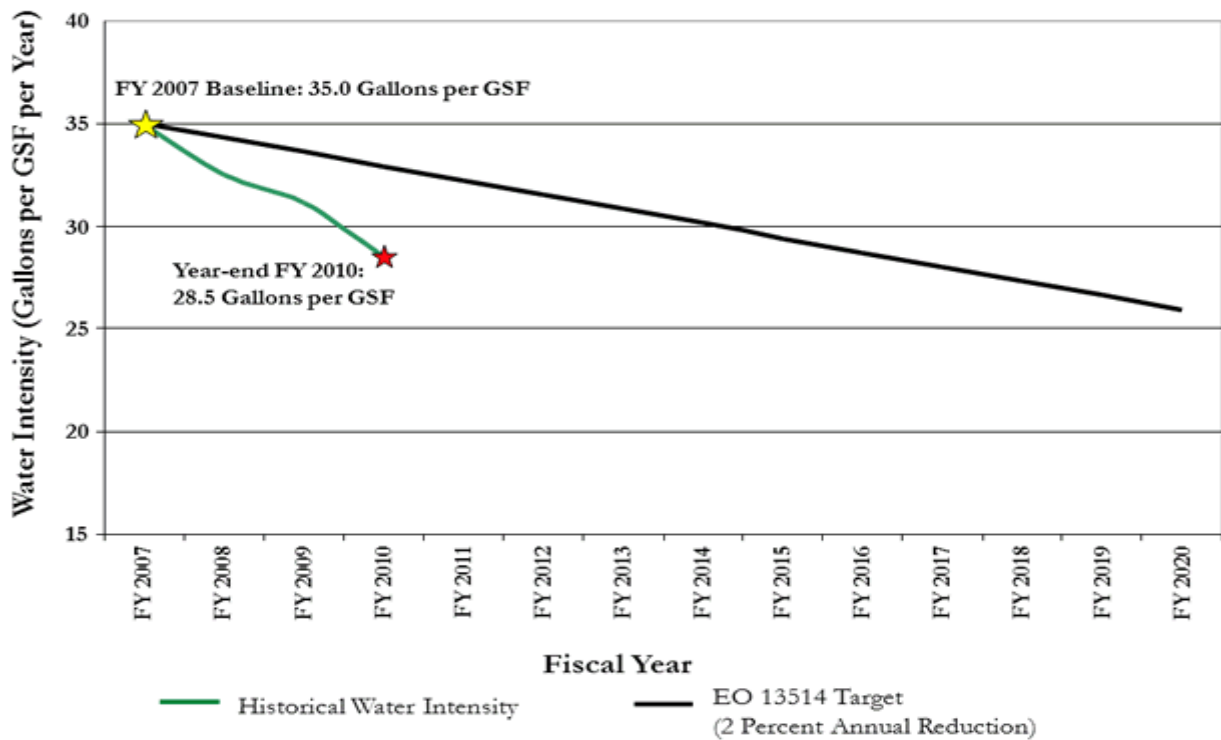
Despite starting with a low 35.0 gallons per GSF baseline in FY 2007, EPA continued to reduce its water intensity in FY 2010, achieving an intensity of 28.5 gallons per GSF. This represents a reduction of 8.5 percent compared with FY 2009 for a total 18.7 percent reduction compared with the FY 2007 baseline (see Figure 3), greatly surpassing the 6 percent required federal reduction. Water conservation efforts in FY 2010 were guided by the Agency's Water Conservation Strategy, discussed in the Agency's SSPP.

The Agency's second-largest facility, AWBERC in Cincinnati, Ohio, dropped water use by 16.6 percent compared to FY 2009 after installing new steam sterilizer retrofit kits, a control flash tank sensor, dry vacuum pump seal, and high-efficiency restroom fixtures. Water use at the NHEERL in RTP, North Carolina, fell 14.9 percent compared with FY 2009 after the facility took a single-pass cooling electron microscope offline. At the WED Laboratory in Corvallis, Oregon, high-efficiency replacements for toilets, urinals, and faucets over the past few years and optimization of irrigation equipment helped the facility lower its water use 37.7 percent compared with FY 2009.

⁴ EPA previously completed the installation of advanced meters at AWBERC for electricity and natural gas in early FY 2009; in FY 2010, EPA awarded a contract for the installation of additional advanced metering at AWBERC for fuel oil and domestic water.

⁵ EPA previously completed the installation of advanced meters at New Main for electricity, chilled water, high-temperature hot water, and domestic water in early FY 2006; in FY 2010, EPA awarded a contract for the installation of advanced metering for additional electricity feeds and natural gas at New Main.

Figure 3. EPA Water Intensity Relative to EO 13514 Target



Water Conservation Retrofits and Capital Improvements

EPA continued or completed many water conservation projects in FY 2010, as listed in Table 3. EPA has started construction of a condensate recovery system at its New Main laboratory in RTP, North Carolina, that is expected to provide approximately 8 million gallons of cool reclaimed condensate to a cooling tower complex on an adjacent federally owned property. EPA completed construction of condensate collection systems in its New Main facilities and funded construction of a pipe to carry the condensate to the receiving facility in fall 2010.

Table 3. Water-Saving Projects by Technology			
Facility	Project	Expected Savings (Approximate)	Status
Optimizing Cooling Tower Operations			
NAREL in Montgomery, Alabama	Adjusted the cooling tower blowdown line and basin overflow drain to improve efficiency.	1 million gallons per year	Completed March 2010.
Installing Condensate Recovery Systems			
New Main in RTP, North Carolina	Collecting condensate and routing it to the cooling towers at the central utility plant (CUP) that serves New Main.	8 million gallons per year (when complete)	Under construction; completion expected in FY 2011.

<i>Facility</i>	<i>Project</i>	<i>Expected Savings (Approximate)</i>	<i>Status</i>
NAREL in Montgomery, Alabama	Completed a project in late FY 2010 to collect condensate from air handling units throughout the building and route it to the cooling tower for make-up water.	740,000 gallons per year	Completed September 2010.
ESC in Fort Meade, Maryland	Redirected clean steam condensate to the boiler system, reducing potable water needs for the boiler system.	600,000 gallons per year	Completed December 2009.
Achieving Landscape Irrigation Reductions			
Robert S. Kerr Environmental Research Center in Ada, Oklahoma	Optimized irrigation system by implementing recommendations provided by irrigation professionals certified by a WaterSense® labeled program.	400,000 gallons per year	Completed June 2010.
WED Laboratory in Corvallis, Oregon	Optimizing irrigation system by implementing recommendations provided by irrigation professionals certified by a WaterSense labeled program.	250,000 gallons per year	Ongoing.
Eliminating Single-Pass Cooling			
NHEERL in RTP, North Carolina	Eliminated the use of single-pass cooling in a laboratory electron microscope.	530,000 gallons per year	Completed June 2010.
Controlling Tempering Water Flow			
AWBERC in Cincinnati, Ohio	Installed a new temperature sensor in the boiler flash tank discharge line that allows tempering water to flow only when the flash tank is discharging instead of continuously.	750,000 gallons per year	Completed June 2010.
New Main in RTP, North Carolina	Adjusted/reduced tempering water flow to boiler blowdown drain.	400,000 gallons per year	Completed June 2010.
Region 2 Laboratory in Edison, New Jersey	Installed a temperature sensor in one steam sterilizer discharge line and a solenoid valve to allow tempering water to flow only when the temperature sensor indicates it is necessary, instead of continuously.	450,000 gallons per year	Completed March 2010.
Chapel Hill Laboratory in Chapel Hill, North Carolina	Retrofitted steam sterilizers to control tempering water flow when the units are in standby mode.	240,000 gallons per year	Completed August 2010.
Replacing Sanitary Fixtures			
NAREL in Montgomery, Alabama	Upgraded toilets and urinals with high-efficiency models.	81,000 gallons per year	Completed December 2009.
	Replaced or retrofitted lavatory faucets.	14,000 gallons per year	Completed December 2009.

<i>Facility</i>	<i>Project</i>	<i>Expected Savings (Approximate)</i>	<i>Status</i>
AWBERC in Cincinnati, Ohio	Completed replacement of some older toilets and urinals in its main building in FY 2010 with high-efficiency models. (The remainder of the restrooms in the 10-story building will be renovated as funding is available, and are expected to save an additional 1.8 million gallons per year. Restroom retrofits at AWBERC are 25 percent complete as of FY 2010.)	210,000 gallons per year	Completed March 2010.
National Computer Center (NCC) in RTP, North Carolina	Replaced or retrofitted lavatory faucets.	57,000 gallons per year	Completed December 2009.
Region 2 Laboratory in Edison, New Jersey	Replaced or retrofitted lavatory faucets.	133,000 gallons per year	Completed March 2010.
Other			
National Institute of Environmental Health Sciences in RTP, North Carolina	Working with National Institute of Environmental Health Sciences (co-located on the RTP campus) to capture cooling tower blowdown at the CUP, treat it with reverse osmosis, and reuse it as cooling tower make-up water.	2.4 million gallons per year (when complete)	Under construction.
AWBERC in Cincinnati, Ohio	Replaced liquid-ring vacuum pump, which was nearing the end of its 35-year life, with a new pump that uses claw technology to create its vacuum without any liquid.	200,000 gallons per year	Completed March 2010.
NAREL in Montgomery, Alabama	Improved float-operated switches associated with the vacuum pump.	140,000 gallons per year	Completed April 2010.
NAREL in Montgomery, Alabama	Modified the reverse osmosis system so that it only runs when there is a demand for purified water.	200,000 gallons per year	Completed April 2010.
<i>Total Water Savings From Projects Completed and Underway in FY 2010</i>			
<i>Total water savings from projects completed in FY 2010</i>		6.1 million gallons	
<i>Total anticipated water savings from projects underway but not completed in FY 2010</i>		10.7 million gallons	

EISA Section 423 Implementation—Water Assessments

Per EISA requirements, in FY 2010 EPA reported potential water projects identified during EISA water assessments at seven facilities and updated those facilities' water management plans and facility-specific reduction targets. EPA reported the potential water-saving projects from these assessments (described in Table 4) to FEMP on June 18, 2010, and is working with facility managers to implement or analyze the following projects for feasibility and cost-effectiveness.

Table 4. Potential Water-Saving Projects From EISA Water Assessments

<i>Facility</i>	<i>Potential Projects</i>	<i>Projected Savings (Approximate)</i>
ESC in Fort Meade, Maryland	Replacing urinals with WaterSense labeled models.	50,000 gallons per year
New England Regional Laboratory in Chelmsford, Massachusetts	Recover air handler condensate recovery and reuse as cooling tower make-up water.	170,000 gallons per year
	Replace urinals with WaterSense labeled models.	14,000 gallons per year
GED in Gulf Breeze, Florida	Recover air handler condensate and reuse as cooling tower make-up water.	960,000 gallons per year
	Maximize cooling tower cycles of concentration.	190,000 gallons per year
	Replace older toilets with high-efficiency, dual-flush models.	78,000 gallons per year
	Replace urinals with WaterSense labeled models.	55,000 gallons per year
	Retrofit faucets to flow at 0.5 gallons per minute (gpm).	40,000 gallons per year
	Retrofit 1.6 gallons per flush (gpf) toilets with dual-flush fixtures.	6,000 gallons per year
National Exposure Research Laboratory in Athens, Georgia	Replace toilets with high-efficiency models.	137,000 gallons per year
	Replace urinals with WaterSense labeled models.	84,000 gallons per year
	Retrofit faucets to flow at 0.5 gpm.	13,000 gallons per year
STC in Kansas City, Kansas	Make adjustments to the graywater system based on recommissioning.	600,000 gallons per year
	Reroute collected air handler condensate directly to the cooling tower.	137,000 gallons per year
	Maximize cooling tower cycles of concentration.	117,000 gallons per year
	Retrofit faucets to flow at 0.5 gpm.	14,000 gallons per year
NVFEL in Ann Arbor, Michigan	Recover air handler condensate recovery and reuse as cooling tower make-up water.	100,000 gallons per year
	Route reverse osmosis concentrate to the cooling tower to be used as make-up water.	76,000 gallons per year
AED in Narragansett, Rhode Island	Recover air handler condensate and reuse as cooling tower make-up water.	170,000 gallons per year
	Collect rainwater to use for green roof irrigation.	2,000 gallons per year

Nonpotable Water Baseline

EO 13514 set new requirements for reducing industrial, landscaping, and agricultural water use by 2 percent per year compared with an FY 2010 baseline, even if the water used for these purposes is nonpotable, fresh water. Seven EPA facilities use nonpotable water from sources such as lakes, creeks, and wells for purposes such as irrigation, agricultural research, and process cooling. To help meet this requirement, EPA created a baseline development plan. Using that plan, the Agency was able to estimate its industrial, landscaping, and agricultural water use baseline at seven facilities where nonpotable water is used for these purposes as 216,719,276 gallons for FY 2010. (EPA may revise this figure when CEQ releases baseline calculation guidance, expected in March 2011.) Using best practices, recommending equipment upgrades, and working with research scientists to increase efficiency, EPA intends to implement projects at these facilities in FY 2011 to help the Agency meet EO 13514's nonpotable water reduction requirement. During the ongoing water assessment process, EPA will identify additional measures to help meet these new EO 13514 goals. EPA plans to begin design of a project to significantly reduce nonpotable water use at WED in Corvallis, Oregon—the Agency's largest source of nonpotable water use—in FY 2011.

SUSTAINABLE BUILDING DESIGN AND HIGH PERFORMANCE BUILDINGS

8.2 Percent of EPA's Projected FY 2015 FRPP Meets *Guiding Principles*; Agency Is More Than Halfway to 15 Percent by FY 2015 Requirement

Although the Agency occupies approximately 11 million square feet of space, EPA's FRPP inventory—EPA-owned or EPA direct leased facilities—consists of just 4 million square feet of space in 49 buildings at 18 Agency locations. EO 13514 requires 15 percent of these buildings (by number of buildings) to meet the *Guiding Principles for High Performance Sustainable Buildings (Guiding Principles)* by FY 2015⁶. At the end of FY 2010, 8.2 percent of the buildings in EPA's projected FY 2015 FRPP inventory, or four buildings out of 49 total buildings, meet the *Guiding Principles*.

GSA provides EPA with the remaining 7 million square feet of laboratory, office, and support space, either in GSA-owned facilities or in facilities leased by GSA from private owners. For new major lease acquisitions, GSA is required to acquire high performance sustainable buildings for EPA. EPA has developed a variety of strategies and tools to help GSA meet these objectives. More details on these strategies are available below and in the Agency's SSPP.

Building Sustainability Assessments

Beginning in FY 2009, OMB and the Office of the Federal Environmental Executive (OFEE) required sustainable building assessments to evaluate FRPP facilities against the *Guiding Principles*. In FY 2010, EPA performed assessments at the following facilities:

- Gulf Ecology Division Laboratory—Gulf Breeze, Florida
- NAREL—Montgomery, Alabama
- National Exposure Research Laboratory—Athens, Georgia

⁶ EO 13514 specifies that buildings under 5,000 GSF are excluded from this requirement.

- STC—Kansas City, Kansas
- NVFEL—Ann Arbor, Michigan
- AED Laboratory—Narragansett, Rhode Island
- Large Lakes Research Station—Grosse Ile, Michigan

The assessments focused on how each facility employs integrated operations and maintenance (O&M) principles, optimizes energy performance, protects and conserves water, enhances indoor environmental quality, and reduces the environmental impact of materials. EPA’s assessment team determined that the seven facilities assessed in FY 2010 have been proactive in their approaches to sustainability and are already meeting many of the *Guiding Principles*. The team identified opportunities for improvement, including developing comprehensive building O&M plans, moisture control strategies, and phaseout plans for ozone-depleting compounds, and creating procurement policies to track the selection of low-emitting materials, recycled content, and biobased content. At the end of FY 2010, EPA had conducted sustainability assessments covering 31 buildings greater than 5,000 GSF, representing 76.3 percent of the Agency’s projected FY 2015 FRPP inventory by GSF and 61.2 percent by number of buildings.

Building Management Plan Guidelines

The results of the building sustainability assessments indicated that EPA facility managers and staff would benefit from the issuance of Agencywide guidance for developing a building management plan. As a result, in FY 2010, EPA developed Building Management Plan Guidelines (BMPG), a comprehensive set of sustainable building management practices for both EPA-owned and GSA-owned or GSA-leased facilities. The BMPG will be used to help facilities assess and update their existing plans or develop new plans that meet the requirements of the *Guiding Principles*, as well as develop sustainable O&M and janitorial contract language.

EPA is working with three of its laboratories to pilot the BMPG as it works to bring these facilities up to the high performance sustainable building standards called for in the *Guiding Principles*; those facilities include NVFEL in Ann Arbor, Michigan; ESC in Fort Meade, Maryland; and the Large Lakes Research Station in Grosse Ile, Minnesota. EPA will solicit feedback on the BMPG from these facilities as the process moves forward, leveraging the “on-the-ground” experience of the facility managers to efficiently turn policy into practice. Based on the feedback received from the initial pilots, EPA will refine the BMPG and implementation approach, as necessary, for use at additional facilities.

Strategic Plans

In FY 2010, EPA continued to refine its Sustainable Buildings Implementation Plan (SBIP) to reflect EO 13514 requirements. EPA included the most current version of the SBIP with the Agency’s SSPP submission in June 2010. EPA also revised its *Strategy for Meeting the Guiding Principles in 15 Percent of Existing Buildings by Fiscal Year 2015* in December 2009.

GreenCheck

GreenCheck is a process EPA uses to formally identify environmental performance goals for each new EPA facility, significant construction project, and lease of EPA-occupied space. These goals include meeting the requirements of EO 13514, the *Guiding Principles*, EISA, EO 13423, and EPAct 2005, as well as the Agency’s own policies as reflected in its Best Practice (Environmental) Lease Provisions and updated Architecture and Engineering Guidelines.

In June 2010, EPA updated the GreenCheck form to reflect EO 13514 requirements and commitments made in the Agency's SSPP. Approximately 50 EPA construction projects and lease actions were screened through the GreenCheck process in FY 2010, and all projects requiring funding in excess of \$85,000, affecting at least 5,000 GSF, or increasing impervious area by more than 5,000 GSF qualified for and underwent a full GreenCheck review.

Green Building Accomplishments

Even in non-FRPP buildings, EPA works with GSA to achieve sustainability. In December 2009, EPA completed moving its Region 1 Office into GSA's historic, recently renovated John W. McCormack Post Office and Courthouse in Boston, Massachusetts, which was certified LEED-NC Gold in June 2010. EPA worked in partnership with GSA for nearly 10 years to complete this project, and in summer 2010 the Agencies received an Honorable Mention in the Workplace Innovation category of GSA's Real Property Awards for their joint efforts. In November 2009, Park Place, the office building in downtown Seattle where EPA's Region 10 has its offices, received LEED-EB Platinum certification. Because of these certifications and the Agency's historic commitment to green buildings, in FY 2010 EPA occupied 10 buildings certified LEED-NC Gold or Silver and three buildings certified Platinum or Gold under LEED-EB. EPA is also pursuing LEED-CI certification at its Region 10 Office in Seattle, Washington, which consists of 172,320 GSF of space, and its new office in Guaynabo, Puerto Rico, which consists of 21,620 GSF of space.

Improving Performance of New GSA-Provided Buildings

EPA compiles Best Practice (Environmental) Lease Provisions in a standard GSA Solicitation for Offer (SFO) format, which it uses to develop new lease solicitations that work to ensure compliance with EO 13514, the *Guiding Principles*, EISA, EO 13423, and EPA Act 2005. In FY 2010, EPA developed a green market survey to supplement GSA's customary market research for lease procurements. Using the survey, GSA gathers information on existing building energy performance, LEED certifications, water use, green cleaning, and other environmental factors. Working with GSA, EPA then uses the results of these surveys to understand the regional green building market and tailor the SFO to acquire the greenest building possible while also ensuring adequate market competition. Two EPA regional office building leases are ending: the Region 7 Office in Kansas City, Kansas, and the Region 9 Office in San Francisco, California. The Best Practice (Environmental) Lease Provisions and the green market survey are being used in the competitive acquisition processes for these buildings.

ENERGY STAR®

In addition to requiring all new major office leases to obtain the ENERGY STAR label for buildings after their first year of operation, EPA recently included a requirement in all new leases for major office buildings to achieve the ENERGY STAR label every three years where market conditions make doing so feasible. EPA's goal is for all its regional office buildings to be ENERGY STAR labeled; currently, nine of 10 regional offices plus EPA's Potomac Yard One Headquarters satellite building qualify for the ENERGY STAR label. EPA buildings that achieved or renewed ENERGY STAR labels in late FY 2009 and FY 2010 include:

- Potomac Yard One EPA Headquarters Building—Arlington, Virginia
- Region 3 Office—Philadelphia, Pennsylvania
- Region 4 Office—Atlanta, Georgia

- Region 6 Office—Dallas, Texas
- Region 9 Office—San Francisco, California

ON TRACK FOR THE FUTURE

EPA is constantly working to improve its efforts to be a model of sustainability for other federal agencies. In FY 2011, the Agency will continue to focus on improving its GHG emissions inventories and reducing its GHG emissions. EPA will continue to pursue new energy efficiency projects and complete ongoing ones, leading to reductions in energy intensity as well as GHG emissions. These efforts, together with projects in areas such as green power, water conservation, green buildings, and advanced metering, will continue EPA's leadership among federal agencies in the challenge to reduce the environmental impact of its facilities and operations and promote sustainability. For further data on the Agency's FY 2010 environmental performance, consult the U.S. Department of Energy's *Annual GHG and Sustainability Data Report*.

This Page Intentionally Blank



Appendix A: Revision to Energy Baseline

**For Submittal With EPA's
Energy Management and Conservation Program
FY 2010 Annual Report**

This Page Intentionally Blank

FY 2003 ENERGY DATA BASELINE WORKSHEET - EXISTING ON RECORD

Agency: EPA
 Date: 12/15/2009

Prepared by: Evan Snyder
 Phone: 202-564-0358

EXECUTIVE ORDER 13123 REPORTING CATEGORIES				
1-1. Standard Buildings/Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	0.0	\$0.0	0.0
Fuel Oil	Thou. Gal.	0.0	\$0.0	0.0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	0.0
LPG/Propane	Thou. Gal.	0.0	\$0.0	0.0
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	0.0	\$0.0	0.0
Other	BBtu	0.0	\$0.0	0.0
		Total Costs:	\$0.0	0.0
Standard Buildings/Facilities (Thou. Gross Square Feet)		0.0	Btu/GSF:	#DIV/0!
1-2. Industrial, Laboratory, Research, and Other Energy-Intensive Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	133,543.2	\$7,844.1	455.6
Fuel Oil	Thou. Gal.	525.4	\$513.9	72.9
Natural Gas	Thou. Cubic Ft.	354,470.0	\$2,604.7	365.5
LPG/Propane	Thou. Gal.	9.8	\$18.3	0.9
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	13.1	\$526.1	13.1
Other	BBtu	534.5	\$5,257.8	534.5
		Total Costs:	\$16,764.8	1,442.5
Energy-Intensive Facilities (Thou. Gross Square Feet)		3,713.9	Btu/GSF:	388,400
1-3. Exempt Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	0.0	\$0.0	0.0
Fuel Oil	Thou. Gal.	0.0	\$0.0	0.0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	0.0
LPG/Propane	Thou. Gal.	0.0	\$0.0	0.0
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	0.0	\$0.0	0.0
Other	BBtu	0.0	\$0.0	0.0
		Total Costs:	\$0.0	0.0
Exempt Facilities (Thou. Gross Square Feet)		0.0	Btu/GSF:	#DIV/0!

ENERGY POLICY ACT 2005 REPORTING CATEGORIES				
EPACT Goal-Subject Buildings/Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	133,543.2	\$7,844.1	455.6
Fuel Oil	Thou. Gal.	525.4	\$513.9	72.9
Natural Gas	Thou. Cubic Ft.	354,470.0	\$2,604.7	365.5
LPG/Propane	Thou. Gal.	9.8	\$18.3	0.9
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	13.1	\$526.1	13.1
Other	BBtu	534.5	\$5,257.8	534.5
		Total Costs:	\$16,764.8	1,442.5
EPACT Goal Buildings/Facilities (Thou. Gross Square Feet)		3,713.9	Btu/GSF:	388,400
EPACT Excluded Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	0.0	\$0.0	0.0
Fuel Oil	Thou. Gal.	0.0	\$0.0	0.0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	0.0
LPG/Propane	Thou. Gal.	0.0	\$0.0	0.0
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	0.0	\$0.0	0.0
Other	BBtu	0.0	\$0.0	0.0
		Total Costs:	\$0.0	0.0
EPACT Excluded Facilities (Thou. Gross Square Feet)		0.0	Btu/GSF:	#DIV/0!

ALL FACILITIES COMBINED				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	133,543.2	\$7,844.1	455.6
Fuel Oil	Thou. Gal.	525.4	\$513.9	72.9
Natural Gas	Thou. Cubic Ft.	354,470.0	\$2,604.7	365.5
LPG/Propane	Thou. Gal.	9.8	\$18.3	0.9
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	13.1	\$526.1	13.1
Other	BBtu	534.5	\$5,257.8	534.5
		Total Costs:	\$16,764.8	1,442.5
All Facilities (Thou. Gross Square Feet)		3,713.9	Btu/GSF:	388,400

FY 2003 ENERGY DATA BASELINE WORKSHEET - REVISED BASELINE

Agency: EPA
Date: 12/29/2010

Prepared by: Evan Snyder
Phone: 202-564-0358

EXECUTIVE ORDER 13123 REPORTING CATEGORIES				
1-1. Standard Buildings/Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	0.0	\$0.0	0.0
Fuel Oil	Thou. Gal.	0.0	\$0.0	0.0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	0.0
LPG/Propane	Thou. Gal.	0.0	\$0.0	0.0
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	0.0	\$0.0	0.0
Other	BBtu	0.0	\$0.0	0.0
		Total Costs:	\$0.0	0.0
Standard Buildings/Facilities (Thou. Gross Square Feet)		0.0	Btu/GSF:	#DIV/0!
1-2. Industrial, Laboratory, Research, and Other Energy-Intensive Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	133,707.1	\$7,844.1	456.2
Fuel Oil	Thou. Gal.	525.7	\$513.9	72.9
Natural Gas	Thou. Cubic Ft.	354,470.0	\$2,604.7	365.5
LPG/Propane	Thou. Gal.	9.8	\$18.3	0.9
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	13.1	\$526.1	13.1
Other	BBtu	534.5	\$5,257.8	534.5
		Total Costs:	\$16,764.8	1,443.1
Energy-Intensive Facilities (Thou. Gross Square Feet)		3,713.9	Btu/GSF:	388,561
1-3. Exempt Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	0.0	\$0.0	0.0
Fuel Oil	Thou. Gal.	0.0	\$0.0	0.0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	0.0
LPG/Propane	Thou. Gal.	0.0	\$0.0	0.0
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	0.0	\$0.0	0.0
Other	BBtu	0.0	\$0.0	0.0
		Total Costs:	\$0.0	0.0
Exempt Facilities (Thou. Gross Square Feet)		0.0	Btu/GSF:	#DIV/0!

ENERGY POLICY ACT 2005 REPORTING CATEGORIES				
EPACT Goal-Subject Buildings/Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	133,707.1	\$7,844.1	456.2
Fuel Oil	Thou. Gal.	525.7	\$513.9	72.9
Natural Gas	Thou. Cubic Ft.	354,470.0	\$2,604.7	365.5
LPG/Propane	Thou. Gal.	9.8	\$18.3	0.9
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	13.1	\$526.1	13.1
Other	BBtu	534.5	\$5,257.8	534.5
		Total Costs:	\$16,764.8	1,443.1
EPACT Goal Buildings/Facilities (Thou. Gross Square Feet)		3,713.9	Btu/GSF:	388,561
EPACT Excluded Facilities				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	0.0	\$0.0	0.0
Fuel Oil	Thou. Gal.	0.0	\$0.0	0.0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	0.0
LPG/Propane	Thou. Gal.	0.0	\$0.0	0.0
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	0.0	\$0.0	0.0
Other	BBtu	0.0	\$0.0	0.0
		Total Costs:	\$0.0	0.0
EPACT Excluded Facilities (Thou. Gross Square Feet)		0.0	Btu/GSF:	#DIV/0!

ALL FACILITIES COMBINED				
Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Site-Delivered Btu (Billion)
Electricity	MWH	133,707.1	\$7,844.1	456.2
Fuel Oil	Thou. Gal.	525.7	\$513.9	72.9
Natural Gas	Thou. Cubic Ft.	354,470.0	\$2,604.7	365.5
LPG/Propane	Thou. Gal.	9.8	\$18.3	0.9
Coal	S. Ton	0.0	\$0.0	0.0
Purch. Steam	BBtu	13.1	\$526.1	13.1
Other	BBtu	534.5	\$5,257.8	534.5
		Total Costs:	\$16,764.8	1,443.1
All Facilities (Thou. Gross Square Feet)		3,713.9	Btu/GSF:	388,561



Appendix B: List of Excluded Facilities

**For Submittal With EPA's
Energy Management and Conservation Program
FY 2010 Annual Report**

This Page Intentionally Blank

APPENDIX B – LIST OF EXCLUDED FACILITIES

Table B-1. List of Excluded Facilities		
<i>Facility</i>	<i>Explanation</i>	<i>FY 2010 Energy Consumption</i>
Research Vessel, Mid-Continent Ecology Division Laboratory (MED), Duluth, Minnesota	A research vessel based out of MED in Duluth, Minnesota, consumes energy when it is docked; this is known as “cold iron energy.” FEMP’s <i>Guidelines for Establishing Criteria for Excluding Buildings</i> , dated January 27, 2006, states that “Federal ships that consume ‘Cold Iron Energy’ (energy used to supply power and heat to ships docked in port),” are “assumed to already be excluded from the energy performance requirements of Section 543” of EPAAct 2005. Therefore, EPA is reporting the energy consumed by this vessel in FY 2010 in the Energy Goal Excluded category of the <i>GHG and Sustainability Data Report</i> accompanying this narrative. The energy consumed by this vessel was, however, included in the Agency’s Scope 1 and 2 GHG emissions calculations per the EO 13514 <i>Federal Greenhouse Gas Accounting and Reporting Guidance</i> .	58,673 kWh

This Page Intentionally Blank



Appendix C: EPA's FY 2010 EPA Act 2005 Goal Subject Building Inventory

**For Submittal With EPA's
Energy Management and Conservation Program
FY 2010 Annual Report**

This Page Intentionally Blank

APPENDIX C – EPA’s FY 2010 EPAct 2005 GOAL SUBJECT BUILDING INVENTORY

Table C-1. EPA’s FY 2010 EPAct 2005 Goal Subject Building Inventory¹		
<i>Facility Name</i>	<i>Location</i>	<i>Site Energy Manager</i>
Robert S. Kerr Environmental Research Laboratory	Ada, Oklahoma	Frank Price
National Vehicle and Fuel Emissions Laboratory	Ann Arbor, Michigan	Steven Dorer
National Exposure Research Laboratory	Athens, Georgia	Rick Pittman
Science and Ecosystem Support Division Laboratory	Athens, Georgia	Betty Kinney
New England Regional Laboratory	Chelmsford, Massachusetts	Bob Beane
Andrew W. Breidenbach Environmental Research Center	Cincinnati, Ohio	Rich Koch
Test and Evaluation Facility	Cincinnati, Ohio	Rich Koch
Center Hill Test and Evaluation Facility	Cincinnati, Ohio	Rich Koch
National Health and Environmental Effects Research Laboratory, Western Ecology Division	Corvallis, Oregon	Primo Knight
Willamette Research Station	Corvallis, Oregon	Primo Knight
National Health and Environmental Effects Research Laboratory, Mid-Continent Ecology Division	Duluth, Minnesota	Rod Booth
Region 2 Laboratory	Edison, New Jersey	Joseph Pernice
Environmental Science Center	Fort Meade, Maryland	Rick Dreisch
Region 8 Laboratory	Golden, Colorado	Craig Greenwell
Large Lakes Research Station	Grosse Ile, Michigan	Rod Booth
National Health and Environmental Effects Research Laboratory, Gulf Ecology Division	Gulf Breeze, Florida	Clay Peacher
Region 6 Environmental Laboratory	Houston, Texas	L.C. Miner
Kansas City Science and Technology Center	Kansas City, Kansas	John Begley
University of Nevada, Las Vegas, On-Campus EPA Facilities	Las Vegas, Nevada	Robert Andrews
Region 10 Laboratory	Manchester, Washington	Linda Donahue
National Air and Radiation Environmental Laboratory	Montgomery, Alabama	Mike Clark/ Jonathan Aplin

<i>Facility Name</i>	<i>Location</i>	<i>Site Energy Manager</i>
National Health and Environmental Effects Research Laboratory, Atlantic Ecology Division	Narragansett, Rhode Island	Russ Ahlgren
National Health and Environmental Effects Research Laboratory, Western Ecology Division	Newport, Oregon	Primo Knight
New Consolidated Facility	Research Triangle Park, North Carolina	Sam Pagan
New Computer Center	Research Triangle Park, North Carolina	Sam Pagan
National Health and Environmental Effects Research Laboratory	Research Triangle Park, North Carolina	Sam Pagan
Chapel Hill Laboratory	Chapel Hill, North Carolina	Sam Pagan
New Page Road	Research Triangle Park, North Carolina	Sam Pagan
Central Regional Laboratory	Richmond, California	Jennifer Mann

¹EPA is required to report to DOE and OMB the energy use at facilities for which the Agency pays utility bills. Although EPA occupies other facilities, utility expenses for those facilities are paid by GSA.