



FY 2014

USDA Headquarters & GWCC
Energy & Water Management
Action Plan



USDA
Office of Operations
October 2013



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Background

The recent significant reductions in operational budgets and the expected continued reductions results in the need for the Office of Operations (OO) to take more aggressive energy conservation measures as spelled out in this plan. Executive Order 13514 “Federal Leadership in Environmental, Energy, and Economic Performance” and EISA 2007 “Energy Independence and Security Act” require a 3% annual reduction in energy intensity through the end of FY 2015 (30% reduction overall.) In addition, the E.O. requires that at least half the statutorily required (7.5%) renewable energy consumed by the agency in a fiscal year comes from new renewable sources and to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use.

Environmental Footprint

The following table highlights the USDA Headquarters facilities environmental aspects and impacts associated with various operations conducted at the facilities.

Operation	Environmental Aspects	Environmental Impact
Administrative Offices	<ul style="list-style-type: none"> ➤ Electronics ➤ Vampire Electricity ➤ Appliances ➤ Supplemental A/C/ and Heating Units 	<ul style="list-style-type: none"> ➤ The primary environmental impact of electricity consumption is the production of greenhouse gases that contribute to global warming ➤ Water use for irrigation and for cooling electric power plants are tops among US water uses, at about 136 billion gallons a day. So, not only does using less electricity save you money and reduce global warming impacts, but it also protects our precious fresh water supplies. USDA operations are not water intensive, but we recognize that water consumption is a growing concern. We are addressing our main uses of water: landscape irrigation, domestic use in the HQ facilities.
Cafeteria & Food Service Operations	<ul style="list-style-type: none"> ➤ Hot Water Used for cooking Kitchen Appliances 	
Janitorial Services	<ul style="list-style-type: none"> ➤ Water used in cleaning 	
Operation & Maintenance	<ul style="list-style-type: none"> ➤ Lighting ➤ HVAC 	
Landscaping	<ul style="list-style-type: none"> ➤ Water Use irrigation 	



Overall Program Goals

The Office of Operations strives to achieve the following goals in Fiscal Year 2014:

1. Reduce energy and water use by three percent this year;
2. Increase efficiency of major mechanical systems and related components;
3. Reduce the Headquarters dependency on non-renewable energy sources by implementing green energy projects and purchasing Renewable Energy Credits (RECs) to offset at least 50% of the total facilities electrical energy use;
4. And reduce greenhouse gas emissions in accordance with E.O. 13514.

Specific Program Objectives

- **Energy Efficiency:** Reduce energy intensity 30 percent by 2015, compared to the FY 2003 baseline.
- **Greenhouse Gases:** Reduce greenhouse gas emissions through reduction of energy intensity 30 percent by 2015, compared to an FY 2003 baseline.
- **Renewable Power:** At least 50 percent of current renewable energy purchases must come from new renewable sources (in service after January 1, 1999). EPA Act 2005 requires that U.S.D.A purchase at least 7.5% of its electricity from renewable source.
- **Water Conservation:** Reduce water intensity (gallons per square foot) by 2% each year through FY 2015 for a total of 16% based on water consumption in FY 2007.
- **Electronics Management:** Annually, 95 percent of electronic products purchased must meet Electronic Product Environmental Assessment Tool (EPEAT) standards for energy conservation where applicable; enable Energy Star® features on 100 percent of computers and monitors.
- **Building Performance:** Renovate buildings in accordance with sustainability strategies, including energy and water conservation.
- **Cost Reductions:** Position OO to achieve over \$100,000 in electrical cost reduction in FY 2014.



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Energy Performance

In FY 2013, OO spent \$5,838,110 on facilities energy compared \$8,300,000 in FY 2010, and \$9,000,000 in FY 2007. Overall, OO's energy usage per square foot decreased by 4.5% compared to FY 2012 and over 29% compared to our baseline year of FY 2003. OO is therefore on track to meeting our 30% reduction by FY 2015 compared to the baseline FY 2003.

Headquarters Complex Update: Between FY 2000 and FY 2006, there was a steady increase in electrical energy usage in the Headquarters Complex. Since FY 2006 there have been significant reductions in electric consumption due to increased and coordinated efforts by facilities staff, data center personnel, and office occupants. During FY 2013 there was over a 26% reduction in HQ electrical energy usage compared to FY 2003 (baseline year) and over a 31% reduction since FY 2006 (our peak usage year). During FY 2013 there was a 13% decrease in water usage compared to FY 2007 at the Headquarters Complex.

GWCC Updates: The GWCC has seen a steady increase in electric use and cost from FY 1999 to FY 2010. The electric use at GWCC has increased by 21% in FY 2013 compared to our baseline year of FY 2003. The electrical use decreased by over 17% compared to FY 2010.

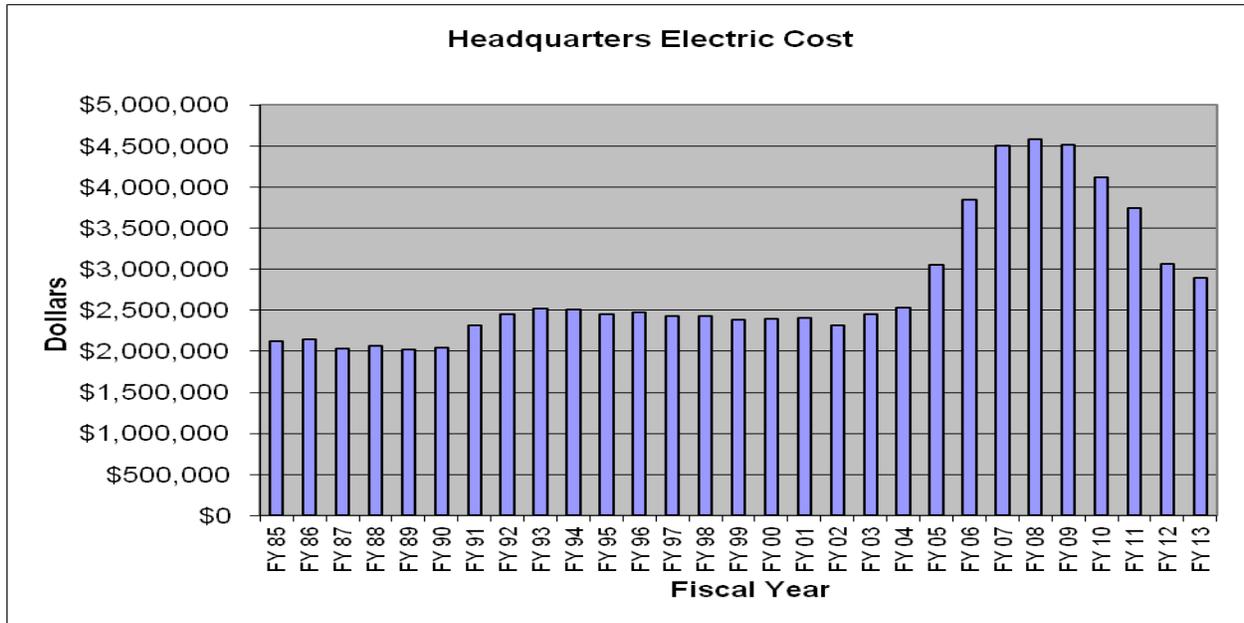
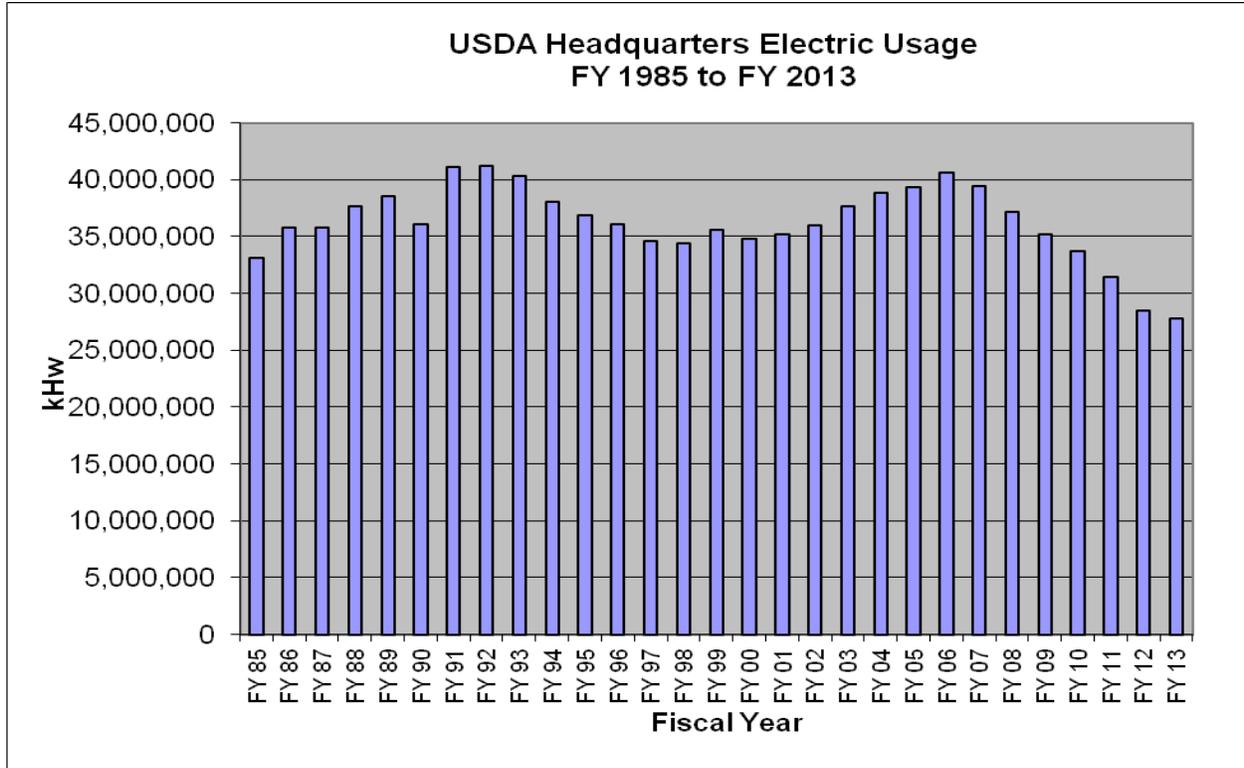
DM has made significant progress in FY2012 to improve energy efficiency and awareness in the Headquarters Complex in support of Executive Order 13514 including:

- Continued the conversions of exterior lighting the LED technologies.
- Implemented a significant conversion of florescent lights to LED lights in South Building Cafeteria during the renovations.

The Figures below illustrate the Headquarters (Whitten and South Buildings) electrical energy usage and costs for the past 27 years. As of October 2007, Cotton Annex was removed from our building inventory. As you can see, there has been a steady increase in electric usage and cost from FY00 to FY06, due to office automation and increased loads from the data centers, server rooms, increases in electric rates, deferring of energy conservation projects, and space utilization policies (increasing number of employees and associated electrical usage in the OO facilities).

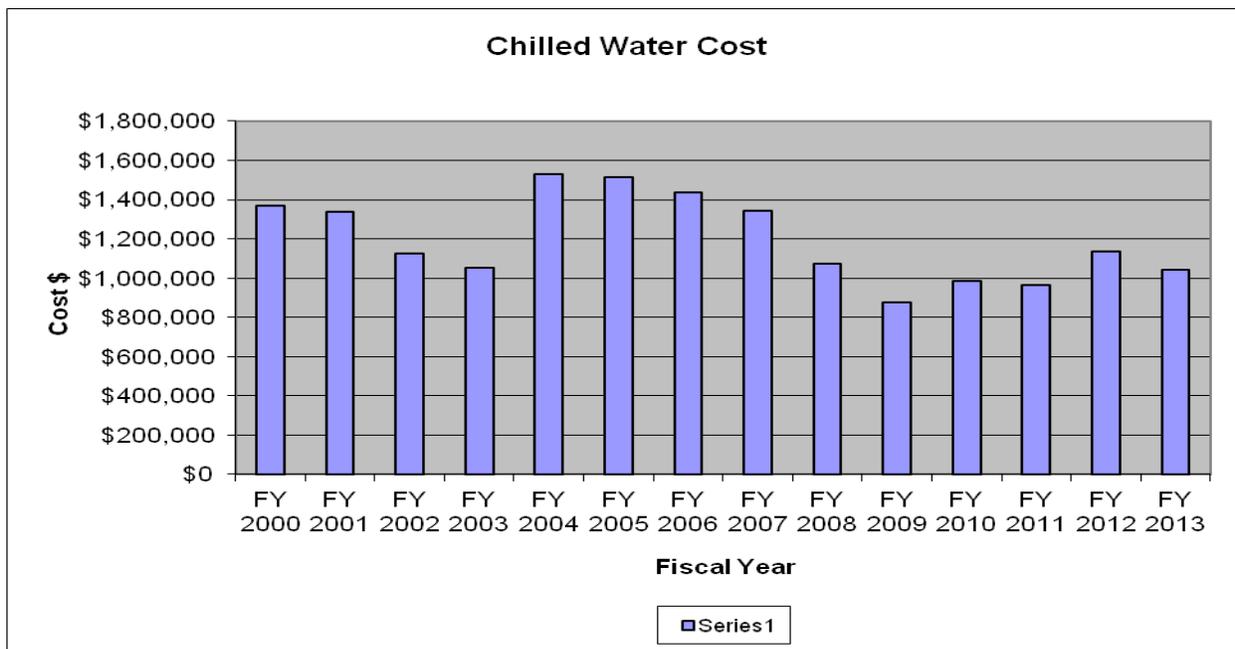
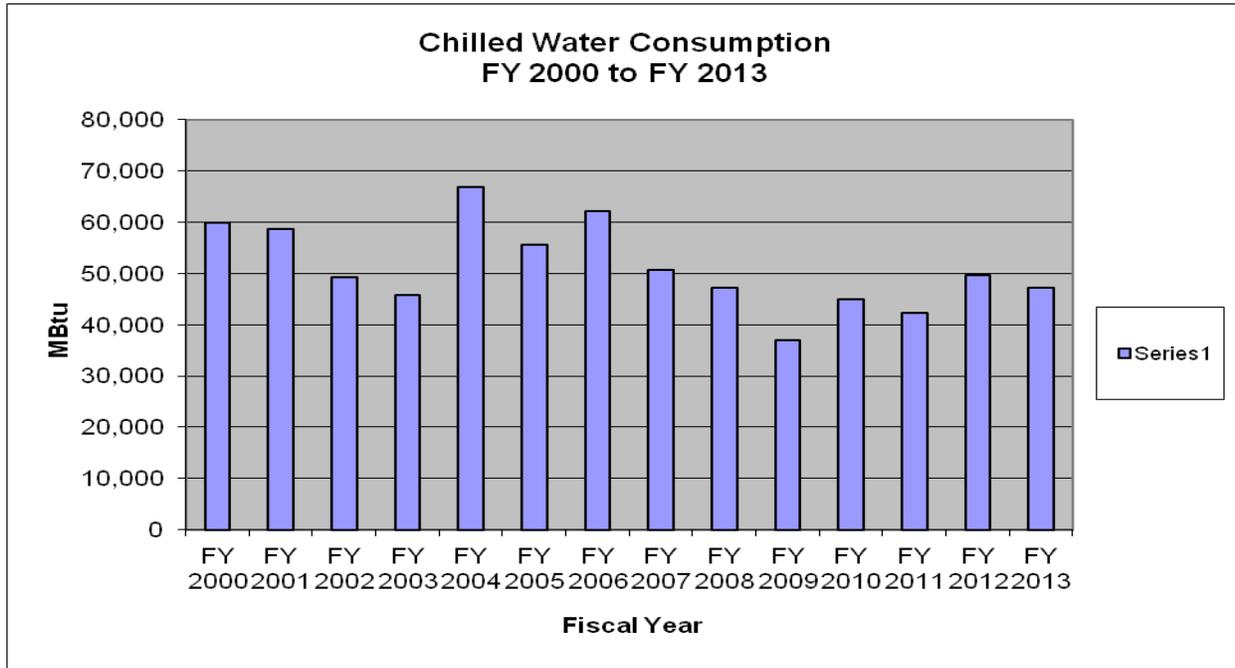


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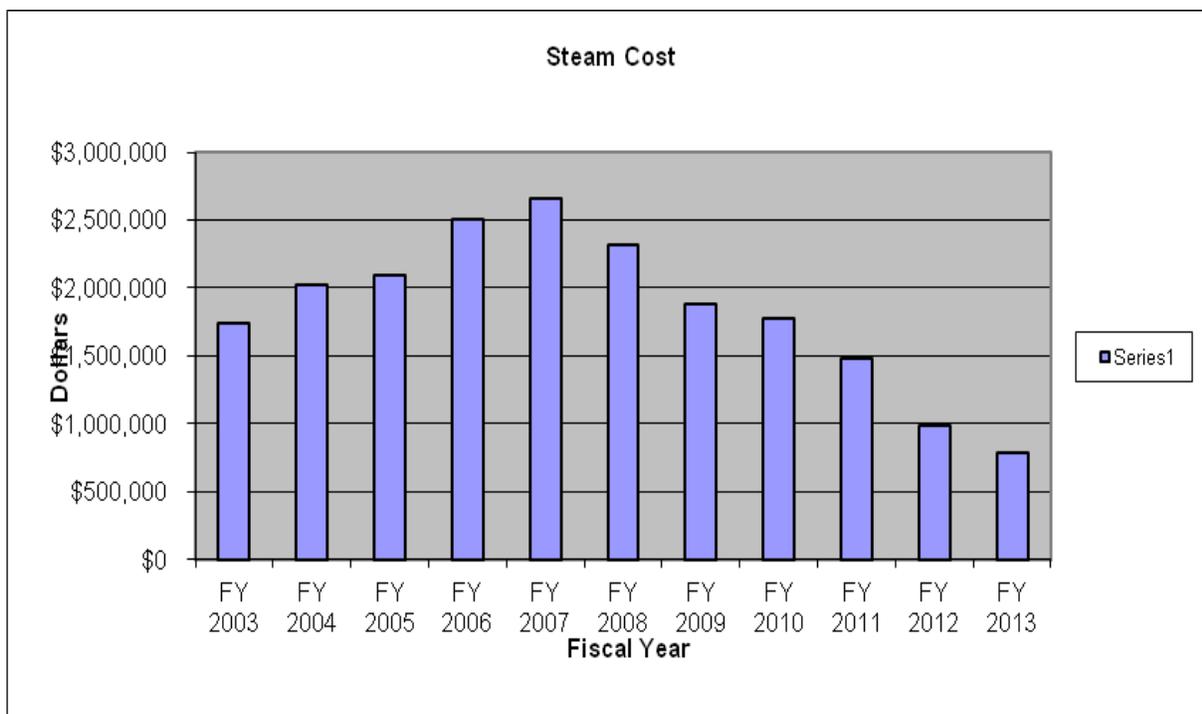
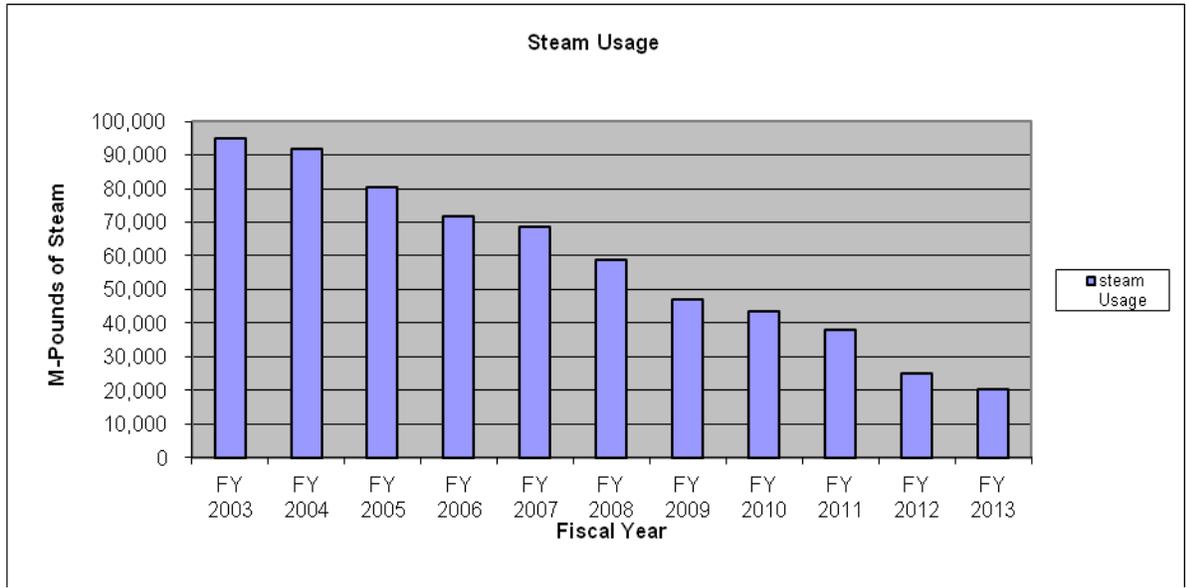


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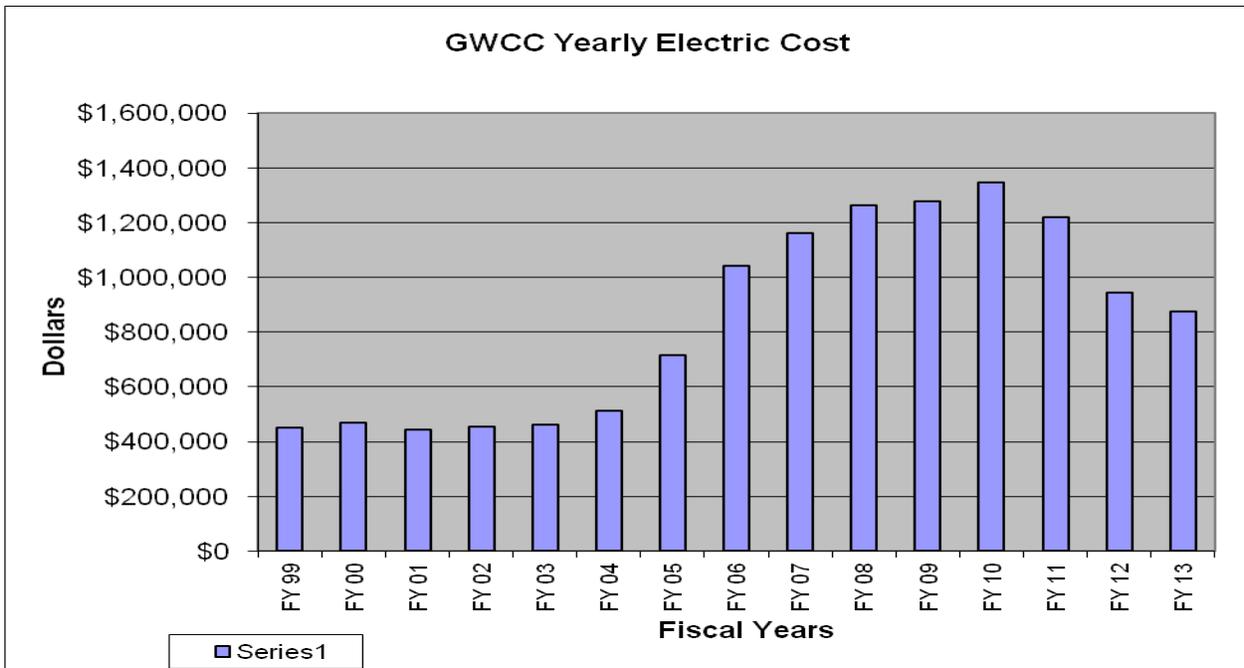
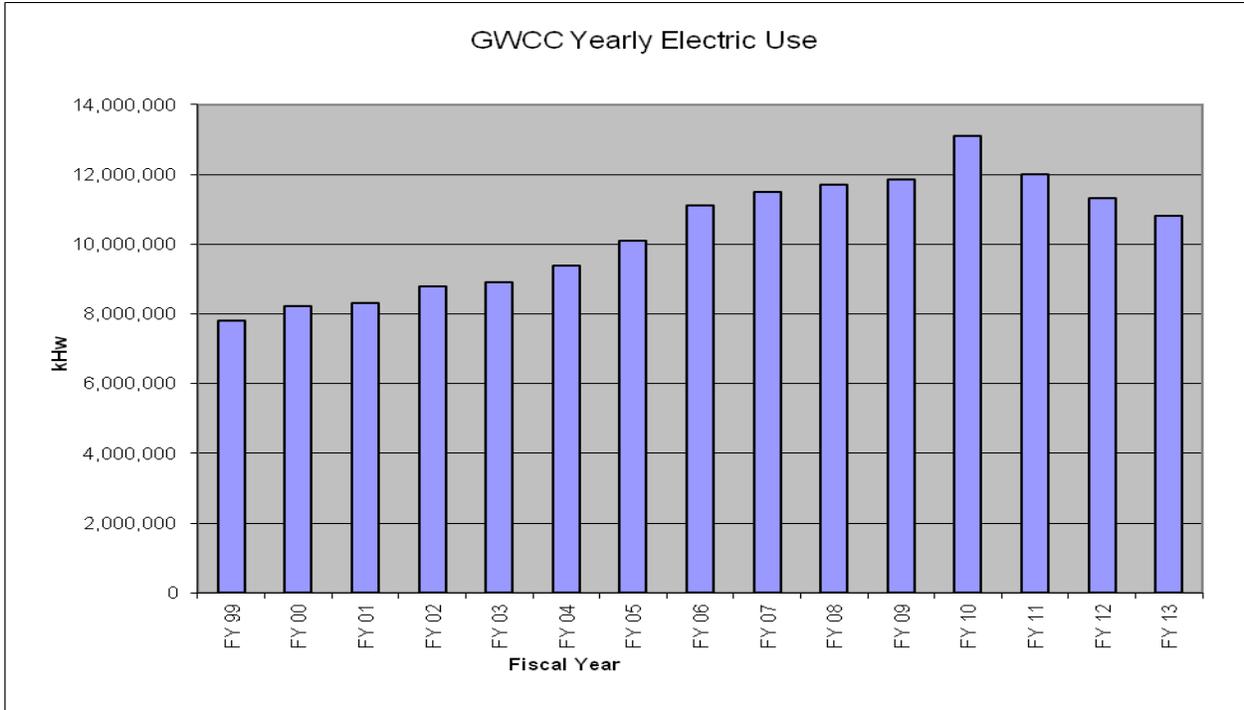


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Targets FY 2014

- Continue working with OCIO to identify and reduce, if possible, after-hours and constant energy loads causing significant consumption of resources related to data centers and computer rooms.
- To identify after hours electrical loads that cannot be reduced and ensure those burdens are offset by tenant reimbursements. Conduct “after-hours” survey of window a/c unit usage. Notify agencies of policy of charging additional charges for after-hours usage of window a/c units. Use “smart plugs” to identify air condition unit electrical usage.
- To establish a framework to reduce energy consumption to meet or exceed Presidential mandates and legal requirements.
- To engage employees to participate in our Demand Response programs using outreach and education events, including participating in our PLC Program to reduce our Capacity Load Charges in FY 2015 by 10%.
- Implement upgrades to ensure significant cost reductions in FY 2014/2015.
- Work with agencies to reduce electricity relating to window air conditioning usage.



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Action plan for 2014

Scheduled Actions	Contact Person
Demand Response Program	Ed Hogberg, Ed Murtagh, Vicki Taylor, P.V. Alexander, Hossein Amini
Outreach Events	Ed Murtagh
Implement UESC with WG – GWCC Solar	Hossein Amini, Ed Murtagh
Implement UESC HQ CHP	Hossein Amini, Ed Murtagh
Replace lighting in the Whitten Patio	Engineering Branch
Replace Lighting in the tunnel	Engineering Branch
Hallway Lighting Projects	WASC Kelly Barr
Smart Plug Pilot with Window A/C Units	Walt
Window A/C Unit Survey	WASC/SSEO

1 st Quarter	Green Team Energy Meeting (Fall Planning Meeting – Winter Operations) Complete OO Energy Report to OPPM Begin Implementing Lighting Projects Begin Smart Plug Survey for Window A/C Units Begin Agency Room Surveys
2 nd Quarter	Complete Earth Day Event in April
3 rd Quarter	Green Team Energy Meeting (Spring Review Meeting, Planning Summer Operations) Test ILR Capabilities
4 th Quarter	Implement ILR and PLC Programs Update Energy Action Plan for FY 2015



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Performance Indicators

The Office of Operations will maintain an advance metering system for measuring and recording usage data. Energy usage data is reviewed daily to look for abnormalities and adjust energy usage accordingly.

Water use is monitored by the Office of Operations

The Energy Management Work Plan has a list of specific tasks, the person responsible for those tasks, intermediate deadlines, and the resources needed to achieve the objectives and targets above.

Operational Controls

There are certain controls in place to ensure we continue to maximize opportunities for energy and water reductions. Operational controls come in the form of policy, guidance, contractor specifications as well as employee awareness. Various operational controls for this environmental program our outline in our HQ Environmental management system. Refer to the operational controls for (1) Energy and Water reduction operational controls, this document is located at

http://www.dm.usda.gov/HQs_GreenTeam/references_energy_water_conser.htm

Team Roles, Responsibilities, and Competence

This program is managed by the EMS core team that consists of staff with environmental training from the sustainable operations group and the environmental management division within DM. This team relies heavily on volunteer participation from the USDA HQ Green Team. Team members provide a wealth of knowledge and experience in a broad range of areas, they volunteer their time based on their specific expertise and area of interest. Without their effort many of our achievements would be not obtainable.

Records

Records for this program along with other environmental program at headquarters are maintained by the EMS core team members. Most of the EMS documentation is available on the USDA web

http://www.dm.usda.gov/HQs_GreenTeam/references_energy_water_conser.htm