DEPARTMENT OF VETERANS AFFAIRS

Strategic Sustainability Performance Plan

June 2010

EXECUTIVE SUMMARY

Introduction

The Department of Veterans Affairs (VA) Strategic Sustainability Performance Plan (SSPP) responds to Section 8 of Executive Order (EO) 13514 *Federal Leadership in Environmental, Energy, and Economic Performance*, which requires federal agencies to "develop, implement, and annually update an integrated Strategic Sustainability Performance Plan that will prioritize agency actions" for meeting sustainability goals identified in statutes, regulations, and EOs. The SSPP identifies VA's sustainability goals and defines VA's policy and strategy for achieving these goals. It provides a means to review and evaluate the Department's performance and progress toward achieving the sustainability goals.

Agency Policy and Strategy

VA recognizes when conducting its mission to care for our Nation's Veterans, it has a responsibility to minimize environmental and energy-related impacts, including but not limited to greenhouse gas emissions (GHG). In its strategic goals for completing its mission, and through ongoing collaboration with the Department of Defense, VA's activities are tied intimately to sustainability. VA's strategic goals and sustainability goals, as described in the SSPP, reinforce that connection. At the same time, VA faces mission-specific challenges in meeting sustainability goals. The table below presents several of these challenges and VA's approaches to addressing them.

Challenge	Description	VA's Approach
Hospital Energy Requirements	• Providing cutting-edge health care requires an increasing amount of energy-intensive equipment and processes. • Many standards, such as indoor air quality, are more complex than for other building types. Air-handling and sterilization requirements are particularly strict.	• Aggressively implement energy conservation measures to reduce non-healthcare plug load. • Increase the use of renewably fueled, on-site electricity and thermal energy generation. • Commissioning/recommissioning, so systems work as designed, improving energy efficiency, comfort, and indoor air quality.
Hospital Water Requirements	• Infection control protocols are water-intensive. • Sterilization requires steam, and laundry operations require large amounts of hot water. • Water reuse is particularly difficult.	• Aggressively implement water conservation measures and best water management practices to reduce non-healthcare water use. • Water reduction in laundry and non-medical areas
Expanding Mission	• VA services increasingly brought to Veterans at their homes. • Increase outreach and services provided to women Veterans. • Returning Operation Enduring Freedom and Operation Iraqi Freedom Veterans.	• Increase the use of alternative fuels in VA fleet vehicles. • Right size the fleet and expand use of fuel-efficient vehicles.
Respectful Cemeteries	• Maintaining cemetery grounds is water-intensive.	• Increased xeriscaping[i], such as at Fort Bliss National Cemetery. • Use of "smart" irrigation controllers.

[i] Xeriscaping is landscaping that reduces or eliminates the need for supplemental irrigation.

VA has built its strategy for meeting sustainability goals around a Department-level Green Management Program (GMP), led by the VA Senior Sustainability Officer, which encompasses each of VA's major organizational components (the Veterans Health Administration, the Veterans Benefits Administration, the National Cemetery Administration and relevant staff offices). The GMP works through a set of task forces and advisory groups responsible for developing and coordinating implementation of action plans, communicating policies, soliciting feedback from stakeholders, and ensuring commitment of the necessary resources to accomplish actions and goals.

The processes for establishing budgets dedicated to meeting VA's sustainability and other goals are complex and vary both within and across VA organizational components, relying on lifecycle cost analyses where practical. Through the Strategic Capital Investment Planning (SCIP) process, VA is integrating its capital investment process, taking a holistic approach to budgets for the next ten years.

Goals and Performance Review

VA is committed to meeting all statutory, regulatory, and EO-mandated sustainability goals. Furthermore, VA has demonstrated an ability to lead federal agencies with respect to sustainability goals. Some areas in which VA leads the Federal government in achieving and surpassing sustainability goals include:

- Establishing a goal to increase renewable electricity consumption to 15 percent by fiscal year (FY) 2013, which is twice the federal mandate.
- Metering installations to meet statutory requirements two years ahead of schedule for electric meters and five years ahead of schedule for non-electric meters.
- Increasing alternative fuel use by an order of magnitude, from 78,168 gallons of gasoline equivalent (GGE) to 778,946 GGE, over the period 2007 to 2009.
- Preparing energy management plans at all VA facilities, including a comprehensive water management plan.
- Bringing over 13 percent of existing building square footage (six percent of buildings) into compliance with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings.
- Allocating $1.013 billion in green projects between FY 2009 and FY 2010.
- Expanding the number of alternative fueling stations from 12 to 106.
- Developing a set of comprehensive green product requirements for a major office supply solicitation that General Services Administration ultimately incorporated into the Federal Strategic Sourcing Initiative office supply solicitation.
- Installing approximately 12 megawatts of renewable electricity capacity, including solar photovoltaic systems, at 21 VA medical centers and two national cemeteries, and renewably fueled CHP systems at two VA medical centers.
- Completing energy and water needs assessments at all facilities ahead of schedule.
- Updating two cemeteries to meet net-zero energy requirements.
- Acquiring, installing, and deploying 310,000 licenses of power management software by the end of FY 2010.
- Exceeding two years in a row the potable water intensity reduction targets
- Establishing an aggressive 10 percent reduction target in Scope 3 GHG emissions.
- Implementing xeriscaping at Fort Bliss National Cemetery and National Memorial Cemetery of Arizona.

- Implementing innovative use of ground and reclaimed water as a conservation method in Bay Pines, Florida.
- Installing laminar flow faucets to reduce water consumption at Huntington VA Medical Center.

TABLE OF CONTENTS

Section 1: Agency Policy and Strategy

I. Agency Policy Statement

The Department of Veterans Affairs (VA) recognizes when conducting its mission to care for our Nation's Veterans, it has a responsibility to minimize environmental and energy-related impacts. VA is committed to complying with relevant environmental and energy statutes, regulations, and Executive Orders (EO). VA is formalizing this commitment by issuing an expanded sustainability policy in fiscal year (FY) 2010.

In addition to a strong policy statement from VA leadership, the Department is demonstrating its commitment to meeting sustainability targets and goals through green projects and programs. Results of recent efforts include:

- Bringing over 13 percent of existing building square footage (six percent of buildings) into compliance with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles).
- Centrally funding 90 facility-level energy engineer positions and a regional energy manager position at each of VA's 21 Veterans Integrated Service Networks (VISNs). These energy experts support all VA facilities in the VISN.
- Increasing alternative fuel use by an order of magnitude, from 78,168 GGE in 2007 to 778,946 GGE in 2009.
- Centrally funding 40 new facility-level Green Environmental Management System (GEMS) coordinator positions and 20 regional-level GEMS positions to improve management of environmental issues at the facility level and provide regional oversight.

As outlined in this Strategic Sustainability Performance Plan (SSPP), VA's mission poses special challenges in achieving sustainability targets and goals. VA hospitals and community living centers operate continuously, use a variety of energy-intensive medical equipment and processes, and are subject to stringent indoor air quality and other healthcare-specific standards that impact energy use. In addition, VA's mission is expanding to reach more Veterans in more locations, resulting in a growing carbon footprint.

VA plans to implement a number of projects to extend its success in overcoming these challenges in the coming years. These projects include:

- Constructing up to 91 alternative fueling stations to implement VA's principle strategy for reducing petroleum use in the face of an expanding mission.
- Completing building-level metering at all owned VA facilities years ahead of the Energy Independence and Security Act of 2007 (EISA) requirements for both electric and non-electric metering.
- Installing at least 26 on-site renewable electricity generation systems.
- Implementing renewably fueled combined heat and power (CHP) projects, also known as cogeneration, at multiple VA facilities.

II. Sustainability and the Agency Mission

The VA mission is to fulfill President Lincoln's promise, "To care for him who shall have borne the battle, and for his widow, and his orphan," by serving and honoring the men and women who are America's Veterans. In its four strategic goals for completing this mission, and in its collaboration with the Department of Defense (DoD), VA's activities are intimately tied to sustainability. The ways in which these four goals and this collaboration relate to sustainability are:

1. **Restoration and Improved Quality of Life For Disabled Veterans** – Improved environmental quality is consistent with VA's goal to provide the best quality health care.
2. **Smooth Transition to Civilian Life** – While VA is responsible for vocational rehabilitation and employment, it has also found that non-recurring maintenance (NRM) projects for energy, water, and environmental improvements at VA facilities are often good opportunities for service disabled Veteran-owned small businesses and Veteran Owned small businesses.
3. **Honoring, Serving, and Memorializing Veterans** – Providing respectful and pleasing surroundings at national cemeteries currently requires over 1 billion gallons of water per year. This makes up approximately 12 percent of total VA water consumption, making it an important area for water conservation.
4. **Contributing to the Nation's Well-Being** – At the same time that VA provides vital medical research for improving the Nation's health care, VA can also contribute to the Nation's goals of reducing environmental and energy-related impacts.
5. **VA/DoD Collaboration: Working Together to Serve our Veterans** – DoD has concluded that "while climate change alone does not cause conflict, it may act as an accelerant of instability or conflict, placing a burden to respond on civilian institutions and militaries around the world."[ii] By contributing to a reduction in the impacts of climate change through sustainable practices, VA hopes to help reduce the instances of conflict.

In addition, some of VA's Strategic Plan initiatives address sustainability, such as the Enterprise Energy Cost Reduction initiative. These initiatives are part of VA's strategy to pursue the President's two overarching goals for the Department -- to transform VA into a 21st Century organization and to ensure that we provide timely access to benefits and high quality care to our Veterans over their lifetimes; from the day they are honorably discharged to the day they are laid to rest.

VA's mission also introduces key challenges regarding sustainability. **Table 1** on the following page summarizes these challenges and VA's approach to addressing them.

[ii] Quadrennial Defense Review Report dated February 2010 (http://www.defense.gov/qdr/images/QDR_as_of_12Feb10_1000.pdf)

Table 1: VA mission-specific challenges and approaches

Challenge	Description	VA's Approach
Hospital Energy Requirements	• Providing cutting-edge health care requires an increasing amount of energy-intensive equipment and processes. • Many standards, such as indoor air quality, are more complex than for other building types. Air-handling and sterilization requirements are particularly strict.	• Aggressively implement energy conservation measures to reduce non-healthcare plug load. • Increase the use of renewably fueled, on-site electricity and thermal energy generation. • Commissioning, so systems work the way they were designed, improving energy efficiency, comfort, and indoor air quality.
Hospital Water Requirements	• Infection control protocols are water-intensive. • Sterilization requires steam, and laundry operations require large amounts of hot water. • Water reuse is particularly difficult.	• Aggressively implement water conservation measures and best water management practices to reduce non-healthcare water use. • Water reduction in laundry and non-medical areas
Expanding Mission	• VA services increasingly brought to Veterans at their homes. • Increase outreach and services provided to women Veterans. • Returning Operation Enduring Freedom and Operation Iraqi Freedom Veterans.	• Increase the use of alternative fuels in VA fleet vehicles. • Right-size the fleet and expand use of fuel efficient vehicles
Respectful Cemeteries	• Maintaining cemetery grounds is water-intensive.	• Increased xeriscaping[iii], such as at Fort Bliss, TX. • Use of "smart" irrigation controllers.

[iii] Xeriscaping is landscaping that reduces or eliminates the need for supplemental irrigation.

III. Greenhouse Gas Emissions Reduction Goals

VA is targeting a 29.6 percent reduction in Scope 1 and Scope 2 greenhouse gas (GHG) emissions by FY 2020 below the FY 2008 baseline.[iv] A 26.2 percent reduction in emissions is projected to come from meeting the FY 2015 alternative fuel use, petroleum reduction, energy intensity reduction, and on-site renewable electricity targets as set forth in the Energy Policy Act of 2005. VA plans to meet these targets through a combination of initiatives funded at the facility-, regional-, and Department- level. Facility- and regional-level strategies include energy conservation measures (ECM), retro-commissioning, alternative fueling station installations, such as the one at Martinez VA Outpatient Clinic in **Figure 1**, and on-site renewable electricity generation. Projects funded at the Department level include additional alternative fueling stations, additional on-site renewable electricity generation through technologies such as solar and renewably fueled CHP.

VA's current plan to achieve further reductions after FY 2015 is to leverage renewably fueled CHP. Based on a preliminary inventory completed as part of the Public Sector Standard (PSS) Road Test, which did not completely account for VA's Scope 3 emissions, 99 percent of VA Scope 1 and Scope 2 emissions come from the Veterans Health Administration (VHA) operations and 90 percent of those emissions are from purchased electricity and on-site energy generation. In addition, the large thermal loads at VA medical centers (VAMC) make them good candidates for CHP. VA has identified renewably fueled CHP projects at VA medical centers that would produce an estimated 170,000 megawatt hours (MWh) per year. These projects are projected to provide the additional 3.4 percent reduction required to meet VA's FY 2020 GHG goal.

VA has set an FY 2020 Scope 3 GHG emissions reduction target of 10 percent below the FY 2008 baseline. VA considers this target to be aggressive but achievable, despite its limited ability to control the sources of Scope 3 emissions. VA's emissions from employee commuting are a particular challenge, given the current size of VA and its potential for growth in order to meet the demand for Veterans care and services. To meet its target, VA is relying on a combination of strategies and technology advances that include meeting existing targets (such as energy intensity and pollution prevention); improving fuel economy based on Corporate Average Fuel Economy (CAFE) standards; implementing innovative commuting strategies; and developing an action plan that will address non-commuting emissions, such as telework and alternate work schedules.

[iv] Scope 1 GHG emissions are direct emissions and Scope 2 GHG emissions are indirect emissions from the consumption of purchased electricity, heat, or steam, respectively.

IV. Plan Implementation

VA built its processes for effective implementation of environmental- and energy-related EOs and statutes around its Department-level Green Management Program (GMP), within the Office of Asset Enterprise Management (OAEM), which is led by the Senior Sustainability Officer (SSO). OAEM is responsible for setting VA policy on sustainability, fleet, environmental and energy-related issues, and overseeing implementation of these policies within each of the three Administrations (VHA, National Cemetery Administration [NCA], Veterans Benefits Administration [VBA]) and staff offices. Staff offices that are key to implementation efforts include the Office of the Chief Information Officer, the Office of Acquisition, Logistics, and Construction (OALC), including the Office of Construction and Facilities Management (OCFM), and the National Energy Business Center.

OAEM further built its processes around three task forces (Energy Management, Fleet Management, and Environmental Management) and two advisory councils (Green Building and GHG). These groups are ongoing and feature active participation from members, who include facility, regional and central office representatives from a variety of functional areas. The task forces and advisory councils meet at least quarterly and have four main responsibilities:

1. Develop, maintain and coordinate implementation of an action plan for VA-wide approaches to meeting the challenges relevant to the task force.
2. Communicate policies and approaches within the task force for improved coordination.
3. Disseminate policies and approaches to the field and other stakeholders, and solicit critical feedback.
4. Identify and ensure commitment of the necessary resources for Department-level actions and initiatives.

These groups update the action plans quarterly in coordination with representatives from the Administrations and staff offices to track progress, provide a mechanism for constant re-evaluation and improvement, and maintain member focus on these issues. The task forces and advisory councils report up to an overarching Sustainability Task Force. The Sustainability Task Force is comprised of cross-functional senior level executives.

OAEM resides within the Office of Management, led by the Assistant Secretary for Management, who also serves as the Department's Chief Financial Officer. This organizational structure allows for close coordination and allocation of resources to achieve VA's sustainability goals. In addition, while the SSO is ultimately responsible for meeting VA's sustainability targets and goals, accountability for improvements in sustainability is shared throughout the organization. The SSO chairs the Sustainability Task Force. VA defined sustainability-related metrics in the position descriptions for VISN directors. While VA has not included these requirements in the position descriptions of VISN energy engineers, facility energy engineers, and the NCA and VBA energy and environmental management systems (EMS) coordinators, it has communicated the requirements to these staff and is working to include these requirements in all related position descriptions.

While VA has successfully integrated accountability throughout the Department with metrics appropriate to an individual's level, reporting is centralized within OAEM. This office uses a number of tools to track progress. The primary external tools are the Office of Management

and Budget (OMB) scorecards. However, because these scorecards do not evaluate granular progress, either by level of organization or by metrics beyond the top-level targets, VA uses three additional tools. First, VA has measurable deliverables for every action in its action plans. As mentioned previously, the task forces review these action plans quarterly, and OAEM tracks progress. Secondly, VA uses surveys of the GEMS coordinators to understand how each facility is maintaining its EMS. Finally, the GMP tracks a number of additional metrics, such as ENERGY STAR ratings, Leadership in Energy and Environmental Design (LEED) certifications, and Green Globe certifications for VA facilities.[v]

Table 2 shows the long-term integrating relationship between the sustainability plan and other planning and reporting efforts that VA employs. Through the use of "yes", "no", and "N/A", this table shows progress toward producing the desired integration. A "yes" means the goal has been integrated into the subject report, "no" means it has not yet been integrated, and "N/A" means integration is not applicable or not appropriate. It is important to note agencies other than VA control the content and format of a number of these reports.

Table 2: Critical Planning Coordination

Originating Report / Plan	Scope 1 & 2 GHG Reduction	Scope 3 GHG Reduction	Agency Comprehensive GHG Inventory Development and Maintenance	High-Performance Sustainable Design / Green Buildings	Regional and Local Planning	Water Use Efficiency and Management	Pollution Prevention and Waste Elimination	Sustainable Acquisition	Electronic Stewardship and Data Centers	Agency Specific Innovation
GPRA Strategic Plan	Yes	Yes	N/A	Yes	No	Yes	No	Yes	Yes	N/A
Agency Capital Plan	Yes	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A
A-11 300s	N/A	N/A	N/A	Yes	N/A	N/A	N/A	Yes	No	Yes
Annual Energy Data Report	Yes	No	Yes	N/A	N/A	Yes	N/A	N/A	N/A	N/A
EISA Section 432 Facility Evaluations/Project Reporting	Yes	N/A	N/A	No	N/A	Yes	N/A	N/A	Yes	No
Budget	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes
Asset Management Plan / 3 Year Timeline	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	N/A	N/A
Circular A-11 Exhibit 53s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes	N/A
OMB Scorecards	Yes	N/A	N/A	Yes	N/A	Yes	Yes	Yes	Yes	N/A
Department of Energy's Annual Federal Fleet Report to Congress and the President	Yes	N/A	Yes	N/A	Yes	N/A	N/A	Yes	N/A	N/A
Data Center Consolidation Plan	Yes	Yes	N/A	Yes	N/A	N/A	N/A	N/A	Yes	N/A
EMS	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A
Sustainable Acquisition Practices Report[vi]	N/A	Yes	N/A	N/A	N/A	N/A	Yes	Yes	Yes	N/A

[v] Green Globes: http://www.thegbi.org/. LEED: http://www.usgbc.org/leed

[vi] The Agency Capital Plan and Annual Energy Data Report were completed before EO 13154 was signed and EO 13154 goals will be integrated into the report next year.

V. Evaluating Return on Investment

The methodologies VA uses to determine investment decisions are complex and vary by administration, region, and facility. Regardless of these variations, VA is a mission-driven organization. Any investment that would degrade VA's ability to meet its mission is not considered feasible. VA's current capital expenditure evaluation process, outlined below, exemplifies VA's current processes for making investment decisions after it applies the mission criteria.

Current Process

For major projects (≥ $10 million) and minor projects (< $10 million)—both of which require construction outside of existing building envelopes—the process is shown in **Figure 2**.

Figure 2. Major and minor project decision process.

For NRM projects[vii], decision criteria vary widely. The VA Capital Investment Panel (VACIP) process does not include NRM projects. VA provides a budget to each administration to complete NRM projects. Administrations then determine the percentage of NRM funds that each region will receive. **Figure 3** is an example of the decision process that may take place in a VISN.

[vii] The primary objective of the NRM Program is to maintain the safe, effective, and efficient function of VHA infrastructure. The program focuses on projects that exceed the normal scope and funding limitations of the recurring maintenance program, but that do not exceed limitations for the value of Minor Improvements.

Figure 3. NRM project decision process.

It is important to note that the Department is re-evaluating the way it makes major, minor, and NRM project decisions, and will be implementing a new process in time for FY 2012 project decisions. This new Strategic Capital Investment Planning (SCIP) process is designed to help VA develop a master capital investment plan that will allow it to better focus investment decisions on an organization-wide basis. Unlike the current process, which evaluates only major and minor projects and compares only within project type, the SCIP will also evaluate NRM and lease projects and will compare across project types. VA has not yet finalized the details of the SCIP process.

a. Economic Lifecycle Cost / Return on Investment

VA performs a cost-benefit analysis for selecting projects and initiatives. All major and minor projects must complete an OMB A-11 Exhibit 300 or similar business case document. This process takes into account the entire lifecycle of the investment, from initial acquisition to final disposition.

b. Social Costs and Benefits

While VA does not directly calculate the social costs and benefits of its investment decisions, social costs and benefits are taken into account for all investment decisions. Because all of the investment decisions VA makes must further its mission to provide world-class services and benefits for our Nation's Veterans, and because no investment will take place if it impedes this mission, the social benefits must outweigh the costs for any investment to take place.

c. Environmental Costs and Benefits

The previous statutes and EOs mandating water and energy conservation and use of renewable energy provide a strong framework for continuing VA's efforts to reduce its collective environmental impact. The new SCIP process explicitly includes criteria for water and energy conservation, renewable energy, sustainable buildings and GHG emissions reduction.

d. Mission-Specific Costs and Benefits

Investments that do not interfere with VA's ability to complete its mission may entail associated costs that other government agencies would not encounter. For example, if state-of-the-art medical technology requires greater amounts of energy to operate, VA may have to purchase renewable energy credits to offset energy intensive operations in order to meet GHG emissions reduction targets.

e. *Operations & Maintenance and Deferred Investments*[viii]

VA performs facility condition assessments (FCA) on a three-year cycle, covering one-third of its facilities each year. VA prioritizes maintenance and repair activities based on factors including safety, quality of life, protection of assets, and protection of the environment. VA uses the FCAs to allocate the needed resources including fund allocations based on facilities' needs.

f. Climate Change Risk and Vulnerability

Climate change risk and vulnerability is not directly included in VA investment decisions. Although a risk analysis is included with completion of the OMB A-11 Exhibit 300 and reviewed by the VACIP, VA has not explicitly considered climate change risk as part of that analysis. However, VA is preparing for some of the potential risks associated with climate change. For example, VA has undertaken studies on how it could respond to and operate during severe weather occurrences such as Hurricane Katrina that may become more common and severe because of climate change. One way VA deals with such events is to set requirements for the survivability of its major facilities. VA considers survivability and sustainability as mutually supporting objectives and is actively exploring possible ways to use sustainable practices to fulfill survivability requirements.

g. Alternate Financing

VA has successfully used third-party financing mechanisms such as energy savings performance contracts (ESPC), utility energy services contracts (UESC), and enhanced use leases (EUL) to finance energy and water conservation measures. When entering into such financing arrangements, VA works to ensure reasonable cost savings estimates, proper project implementation, and accurate measurement and verification of savings. VA considers the cost and availability of funds from multiple sources when evaluating project viability.

[viii] VA uses the facility condition assessment process rather than calculating deferred maintenance.

VI. Transparency

VA believes external audiences will be most interested in VA's GHG reduction goals, summary of accomplishments, and performance review for each goal. Of the various communications vehicles for making these details public, VA plans for its website to play the major role. VA website coverage will include:

- Dedicated coverage on the VA's GMP webpage.[ix]
- Brief coverage in the "Fiscal Year 2010 Performance and Accountability Report."

In addition to these postings, the VA Office of Public and Intergovernmental Affairs will send an announcement about the SSPP's completion to its email distribution list and include a link to further details on the VA website: http://www4.va.gov/environment. VA will also publicize plan highlights in an article in VA's in-house magazine *VAnguard*. Broad internal agency communication on goals and accomplishments will include outreach through VA's intranet and VA-wide broadcast messages such as "Hey VA" and "VA Central Office Daily News."

The larger focus for internal agency communication will be on assuring the necessary implementation. At the outset, high-level communications from the SSO to heads of Administrations and staff offices will provide a framework for Department-wide action by engaging these leaders in the completion of the five top-level implementation action plans mentioned in Section 1.IV, Plan Implementation.

The primary burden for internal communications will fall to the three task forces and two advisory groups. As the drivers of implementation, these task forces will share the details of their respective action plans and follow up as needed with appropriate staff, to include chief engineers, facility energy engineers, VISN energy managers, VISN directors, chief asset managers, facility and regional fleet managers, and GEMS coordinators. Tracking of performance metrics will thus be pushed to the facility- level. In turn, the staff will provide feedback through the task forces.

[ix] http://www.va.gov/oaem/greenmanagement/

Section 2: Performance Review & Annual Update

I. Summary of Accomplishments:

VA marked FY 2009 and FY 2010 with a number of significant accomplishments, challenges, and lessons.

Management

- Created, funded and deployed positions for 90 facility-level energy engineers and 21 regional energy managers.
- Addressed the challenges VA's decentralized organizational structure presents in terms of managing information in such areas as purchasing by coordinating effectively across Administrations and staff offices.
- Increased number of facility-level GEMS coordinators from 78 to 119. Established 20 regional-level GEMS positions.
- Continued integration of environment, energy, and transportation functions across the Department.
- Prepared energy management plans for all VA facilities.
- Created a centralized green procurement office for managing energy and other sustainability-related contracts, such as purchasing commodities and fueling stations.
- Allocated $1.013 billion in green investments.

Buildings

- Brought over 13 percent of existing building square footage (6 percent of buildings) into compliance with the Guiding Principles. Eighteen facilities are Green Globes certified at the three-Globe level, three facilities at the two-Globe level, and four additional facilities are LEED-certified.[x]
- Installed electric, steam, natural gas, water and chilled water advanced metering systems at two VISNs in a pilot project. This early installation provided critical information in terms of procurement language and facility staff interaction that is enabling installation of advanced metering systems at all VA-owned facilities several years ahead of the statutory requirements.
- Completed energy assessments at all VA facilities.

Renewable Energy

- Awarded over 10 megawatts of on-site renewable energy projects, including solar photovoltaic (PV) and wind.
- Awarded one ground source heat pump project at St. Cloud VAMC.

[x] In the US, the highest Green Globes certification level possible is four Green Globes.

Fleet

- Increased alternative fuel use by an order of magnitude, from 78,168 GGE to 778,946 GGE, over the period 2007 to 2009.
- Identified 91 VA medical centers for possible installation of alternate fueling stations. Fifteen additional stations are currently operable.

GHG

- Conducted a GHG preliminary inventory for Scope 1, Scope 2, and selected Scope 3 emissions under the PSS Road Test.

Water

- Implemented xeriscaping at Fort Bliss National Cemetery and National Memorial Cemetery of Arizona located in Phoenix.
- Innovative use of ground and reclaimed water as a conservation method implemented in Bay Pines, Florida.
- Conducted leak detection and repair projects at medical centers such as Butler VAMC.
- Huntington VA Medical Center installed laminar flow faucets to reduce water consumption.

Electronics and Solid Waste

- Diverted 36 percent solid waste from landfills and incinerators.
- Ninety-nine percent of computers, monitors, and laptops acquired were Electronic Product Environmental Assessment Tool (EPEAT)-registered.
- Obtained 310,000 licenses of 1E Night-Watchman power management software for installation in 2010.

Education

- Developed Green Routine program to educate VA central office personnel on ways to instill and encourage green, sustainable practices at their workplace and to provide awards for personnel who initiate these programs.

II. Goal Performance Review

1. GOAL: Scope 1 & 2 Greenhouse Gas Reduction

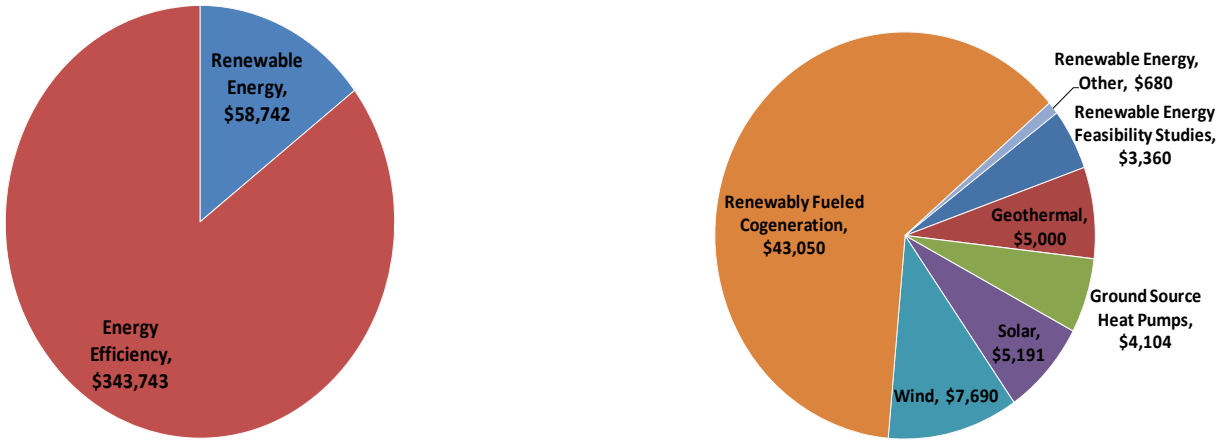
Based on a preliminary inventory of VA's FY 2008 GHG emissions, VA's on-site energy use accounts for 25-30 percent of Scope 1 and Scope 2 emissions and purchased electricity accounts for 65-70 percent. Therefore, improvements in building energy efficiency and installation of on-site renewable energy systems will play the most important role in reducing VA's GHG emissions 29.6 percent below the FY 2008 baseline by FY 2020. By aggressively pursuing ECMs with a positive NPV and a simple payback of up to 20 years, as well as meeting its stretch goal of 15 percent renewable electricity, VA expects to exceed FY 2015 energy intensity and renewable installation targets. This will result in a 26.2 percent reduction in Scope 1 and Scope 2 GHG emissions. VA will achieve the remaining 3.4 percent reduction between FY 2015 and FY 2020 by installing renewably fueled CHP systems at up to 17 facilities, supplying up to 170,000 MWh annually. The CHP plant in North Chicago (**Figure 4**) and the ground source heat pump installation at St. Cloud VAMC (**Figure 5**) demonstrate progress in Scope 1 and Scope 2 reductions. VA made significant progress in its energy efficiency and renewable energy efforts in FY 2009 and FY 2010 thanks in part to over $402 million in funding from the American Recovery and Reinvestment Act of 2009 (ARRA). **Figure 6** shows the allocation of these funds between energy efficiency and renewable energy projects on the left and the allocation of renewable energy funds on the right.

VA's fleet-related emissions play a minor role in its total Scope 1 and Scope 2 GHG emissions inventory (less than 3 percent). Therefore, reductions in these emissions will play a limited role in meeting VA's GHG emissions reduction targets. However, VA recognizes the importance of EISA and EO requirements for reducing petroleum use and increasing alternative fuel use. VA is committed to maximizing the use of alternative fuels and minimizing petroleum consumption consistent with its mission by installing up to 91 alternative fueling stations.

VA's achievement of its energy intensity reduction, renewable energy installations, petroleum reduction, alternative fuel increase, and, ultimately, Scope 1 and Scope 2 GHG emissions reduction goals, is planned and coordinated primarily through the Energy Management and Fleet Management task forces. These groups meet quarterly and coordinate implementation of Department-level action plans for meeting VA's energy- and fleet-related targets. The task forces have updated these plans to reflect the requirements of EO 13514. In addition, VA established a GHG Advisory Group, which developed a GHG

action plan explicitly to address the GHG requirements of EO 13514. VHA developed five-year VISN- and facility-level energy management plans that provide a roadmap for how VHA will meet its targets. **Table 3** provides information on the challenges identified in the Department-level action plans that outline the implementation plans for meeting each sub-goal and VA's planned projects to continue to meet its targets in FY 2010 and FY 2011.

Figure 6. VA ARRA Allocation by Category ($1000's) (left) and VA ARRA Renewable Energy Allocation by Category ($1000's) (right)



OAEM is responsible for setting targets and policy for each sub-goal, as well as reporting, while the Administrations, staff offices, and OCFM are responsible for implementation. Within VHA, the facility energy engineers and VISN energy managers work closely with the GEMS coordinators to integrate energy planning and EMS implementation.

VA has consistently met its GHG-related energy goals receiving a "green" status rating on the OMB energy management scorecard since January 2007. While VA has maintained a green rating on many metrics on the OMB transportation management scorecard, it has struggled to use alternative fuel in all non-waivered alternative fuel vehicles (AFV). However, VA has increased its total alternative fuel use by an order of magnitude over this same period. Furthermore, VA selected locations and set aside funding for up to 91 new alternative fueling stations at VHA facilities across the nation, which will further increase VA's use of alternative fuel and reduce the number of waivered AFVs.

In addition to some of the innovations listed above (e.g., renewably fueled CHP, 15 percent renewable electricity stretch goal, and accelerated metering installation), VA began a behavioral change initiative this year featuring employee education and awards. Furthermore, VA uses ENERGY STAR Portfolio Manager to benchmark the performance of VHA and NCA facilities, with VBA facilities soon to be included. VA is also training energy managers in continuous commissioning and re-commissioning, as well as energy audit procedures. This training will improve VA staff's ability both to identify energy inefficiencies and operational deficiencies in the course of everyday operations and to better specify, contract for, and manage third-party audit and commissioning efforts. The operational improvements from commissioning, re-commissioning, and continuous commissioning not only improve energy efficiency, but also improve comfort and health-related indoor air quality and ventilation/filtration/negative pressurization measures.

Finally, VA created positions for 90 facility energy engineers and 21 VISN energy engineers since 2007. These full-time employees work together with OAEM, as well as engineering and fleet management staff throughout the agency for whom energy and fleet management are collateral responsibilities. In addition to these full-time staff, additional staff may be required to operate and monitor the new alternative fueling stations mentioned previously.

Table 4 shows the targets for Scope 1 and Scope 2 GHG-related projects. Funding for Goal 1 comes from four sources: the GMP budget, the minor and major construction budgets, and the NRM budget. In addition to these sources, VA received $144 million in additional funding in FY 2010. VA expects to meet its targets in the near term without the need for incremental funding.

Table 3: VA Lead, Implementation Methods, and Projects for Scope 1 and Scope 2 GHG-Related Goals

Goal	Sub-Goal	Implementation Lead	Implementation Methods	Projects
Buildings	Reduce Facility Energy Intensity	For design and implementation: Major Construction (≥$10M): OCFM Minor Construction (<$10M) and NRM: Administrations	Energy Management Action Plan Challenges 2 and 3	• Comply with EISA electric metering requirements two to three years ahead of statutory schedule. • Comply with EISA non-electric metering requirements five years ahead of the statutory schedule using ARRA funding. • Implement ECMs using ARRA funding. • Install up to 11 renewably fueled CHP systems at VHA medical centers using ARRA funding. • Identify and implement additional renewably fueled CHP projects, based on 38 feasibility studies.
	Renewable Electricity Installation & Use	Implementation: These projects are implemented at the agency level by OAEM with site selection support from the Administrations. VA's goal is to reduce its carbon footprint and VA is allocating the necessary resources to accomplish the goal.	Energy Management Action Plan Challenges 3 and 4	• Install solar photovoltaic (PV) systems at 21 VAMCs and 2 national cemeteries. • Install renewably fueled CHP systems at two VAMCs. • Install two wind power systems. • Install one ground source heat pump at St. Cloud VAMC. • Identify additional renewably fueled CHP projects, based on 38 feasibility studies.

Goal	Sub-Goal	Implementation Lead	Implementation Methods	Projects
Fleet	Reduce Petroleum Use in Fleet Vehicles	Implementation: Facility Fleet Managers	Fleet Management Action Plan Challenge 4.3.e	Install up to 91 alternative fueling stations at VHA medical centers.
	Increase Use of Alternative Fuels in AFVs	Implementation: Facility Fleet Managers	Fleet Management Action Plan Challenges 3 and 4.3	Install up to 91 alternative fueling stations at VHA medical centers.
	Optimize Use of Vehicles and Right-Size Fleet	Implementation: Facility Fleet Managers	Fleet Management Action Plan Challenges 2 and 4.2	• Complete development of a Vehicle Allocation Methodology tool for use in the field. • Investigate ridesharing in support of VA's Strategic Plan initiative #5: Improve Veteran Mental Health.
	Increase Use of Low Emission and High Fuel Economy Vehicles	Implementation: Facility Fleet Managers	Fleet Management Action Plan Challenges 4.2.d and 4.3	Complete development of a Vehicle Allocation Methodology tool for use in the field.
GHG	Scope 1 and Scope 2 Emissions Reduction	Implementation: OAEM, with Administrations and staff offices	GHG Action Plan Challenge 2	See all projects listed above.

Table 4: Scope 1 and Scope 2 GHG-Related Targets

	SCOPE 1&2 GHG TARGET	Unit	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	....	FY 20
Buildings	Energy Intensity Reduction Goals (BTU/SF reduced from FY 2003 base year)	%	15 %	18 %	21 %	24 %	27 %	30 %	hold	....	hold
	Planned Energy Intensity Reduction (BTU/SF reduced from FY 2003 base year)	%	15 %	18 %	21 %	24 %	27 %	30 %	hold	....	Hold
	Renewable Electricity Goals (Percent of electricity from renewable sources)	%	5 %	5 %	5 %	15 %	hold	hold	hold	hold	hold
	Planned Renewable Electricity Use (Percent of electricity from renewable sources)	%	5 %	5 %	5 %	15 %	hold	hold	hold	hold	hold
Fleet	Petroleum Use Reduction Targets (Percent reduction from FY 2005 base year)	%	10 %	12 %	14 %	16 %	18 %	20 %	22 %	....	30 %
	Planned Petroleum Use Reduction (Percent reduction from FY 2005 base year)	%	10 %	12 %	14 %	16 %	18 %	20 %	22 %	....	30 %
	Alternative Fuel Use in Fleet AFV Target (Percent increase from FY 2005 base year)	%	61 %	77 %	95 %	114 %	136 %	159 %	hold	.....	hold
	Planned Alternative Fuel Use in Fleet AFV (Percent increase from FY 2005 base year)	%	61 %	77 %	95 %	114 %	136 %	159 %	hold	.....	hold
	Scope 1 & 2 - Reduction Target (reduced from FY 2008 base year)	%	0 %	3 %	6 %	9 %	12 %	15 %	18 %	...	29.6 %

2. GOAL: Scope 3 Greenhouse Gas Reduction

With over 271,000 employees in FY 2009, VA was the second largest federal agency and would have ranked in the top 15 largest United States (U.S.) companies.[xi] In addition, VA's staff grew by approximately 35 percent since FY 2000, due to its expanding mission, two on-going wars, and an increase in the number of Veterans requiring services. VA's size presents a serious challenge for VA in reducing Scope 3 GHG emissions, because all of the Scope 3 categories required by federal guidance except transmission and distribution (T&D) losses are either directly or indirectly dependent on the number of employees at the agency. Federal employee commuting presents a particular challenge for VA, since this category accounts for nearly 75 percent of VA's Scope 3 emissions, based on a preliminary Scope 3 emissions inventory. Despite this challenge, VA selected a Scope 3 reduction target of 10 percent below the FY 2008 baseline by FY 2020. While this target may seem conservative compared to VA's Scope 1 and Scope 2 reduction target, VA considers this target aggressive, considering VA's limited ability to control the sources of Scope 3 emissions, which are, by definition, outside of VA's operational control.

To meet this aggressive target, VA will rely on four approaches and technological advances. First, by meeting other sustainability targets, VA will make progress toward its Scope 3 emissions reduction target. These targets include energy intensity

[xi] CNNMoney.com Fortune 500, *Top Companies: Biggest*, http://money.cnn.com/magazines/fortune/fortune500/2009/performers/companies/biggest/employees.html accessed May 13, 2010.

reduction; increased use of on-site electricity generation, both through CHP and renewable electricity; and increased pollution prevention. Second, VA expects that new CAFE standards will improve the average on-the-road fleet economy of the U.S. fleet from approximately 21 miles per gallon (mpg) in 2008 to over 24 mpg by 2020.[xii] Third, VA will investigate innovative strategies for reducing emissions from employee commuting. Depending on the extent to which VA grows, this approach will play the most important role in VA's ability to meet its target. Analysis of VA's preliminary inventory suggests that the growth in VA workforce required to meet its mission had a counterproductive effect on Scope 3 emissions. Since the baseline of 2008, VA has experienced major workforce increases to meet the needs of our Nation's Veterans. If VA grows as much over the next 10 years as it has over the past 10 years, nearly 50 percent of VA employees would need to alter their commuting strategies in order for VA to see no increase in emissions from employee commuting. Finally, VA is developing a Scope 3 Emissions Reduction Plan to address all Scope 3 emission categories currently required under federal guidance.

In addition to the Scope 3 GHG emission categories required by federal guidance, VA has begun to consider the impacts of its supply chain. One area that VA hopes to investigate is the impact on its transition to just-in-time inventory on its Scope 3 GHG emissions.

VA manages its efforts to meet its Scope 3 GHG emission reduction target through the GMP office with the help of the Energy Management Task Force, the Environmental Management Task Force and the GHG Advisory Group. As discussed in the Scope 1 and Scope 2 GHG Reduction and Pollution Prevention and Waste Elimination sections, the task forces are responsible for helping VA meet its energy and waste targets that provide Scope 3 GHG emissions reductions. The GHG Advisory Group developed a GHG Action Plan and Scope 3 Reduction Action Plan. These plans define VA's strategies for meeting its Scope 3 GHG emissions reduction target beyond those reductions accomplished through meeting its other targets. In addition, the GHG Advisory Group will develop a Scope 3 Data Action Plan in July 2010 to identify and address gaps, such as strategies for determining VA commuting modalities, given the challenges associated with gathering these data at an organization as large as VA. In addition, the GMP office will work with the Office of Human Resources and Administration on innovative commuting strategies.

[xii] Supplemental Tables to the *Annual Energy Outlook 2010*, http://www.eia.doe.gov/oiaf/aeo/supplement/supref.html, accessed May 13, 2010

Table 5 shows VA's targets for addressing its Scope 3 GHG emissions.

Table 5: Scope 3 GHG-Related Targets

SCOPE 3 GHG TARGET	Units	FY 10	FY 11	FY 12	FY 13	FY 14	....	FY 20
Overall Agency Scope 3 Reduction Target (reduced from FY08 base year)	%	0 %	1 %	2 %	3 %	4 %		10 %
Sub-Target for Federal Employee Travel	%	0 %	0 %	1 %	1 %	2 %	....	5 %
Sub-Target for Contracted Waste Disposal	%	0 %	0 %	1 %	2 %	3 %	....	9 %
Sub-Target for Transmission and Distribution Losses from Purchased Energy	%	3 %	6 %	9 %	12 %	15 %	....	33 %

3. GOAL: Develop and Maintain Agency Comprehensive Greenhouse Gas Inventory

VA has taken a number of actions to prepare for completing its FY 2008 baseline inventory and FY 2010 inventory. By participating in the PSS Road Test, VA gained an understanding of the difficulties it will face in its first full inventory and is addressing those difficulties proactively, especially regarding data availability. Based on the lessons learned during the PSS Road Test, VA established a GHG Data Action Plan for closing the data gaps identified during the road test. The Department is currently developing a Scope 3 Data Action Plan that will help VA to achieve its Scope 3 target.

The GMP office is responsible for completing the FY 2008 baseline and FY 2010 inventory and will continue to be responsible for maintaining the inventory in future years. While VA is confident that the current GHG Data Action Plan and Scope 3 Data Action Plan will be comprehensive, VA looks forward to revisiting these action plans each year based on lessons learned from that year's inventory experience. VA will closely review data availability, tools used, and calculation methodologies to improve data accuracy, reduce process inefficiencies, and increase the overall simplicity of the inventory process.

4. GOAL: High-Performance Sustainable Design / Green Buildings

VA is a charter signatory to the Memorandum of Understanding on High Performance and Sustainable Buildings and is active in this area. It sought and received third-party certification for a number of its facilities, supported governmental and industry groups devoted to high performance building, and developed industry-leading building designs. VA currently has 18 facilities with Green Globe certification at the three-Globes level and three at the two-Globes level. One VA facility attained a Certified rating in the LEED certification process, two attained a Silver rating, and the VBA Boise Regional Office, received a rating of LEED Gold (**Figure 7**). Additionally, 13 percent of VA facilities by gross square footage, and six percent by number of buildings, meet the Guiding Principles. All new construction projects started in FY 2009 and after should meet or exceed the Guiding Principles and will be designated as appropriate facilities requiring them to establish and maintain an EMS.

Figure 7. LEED-Gold rating at VBA Boise Regional Office.

In addition, VA is involved with many governmental and industry groups that focus on high performance buildings. Through its participation in the Interagency Sustainability Working Group, VA assisted in drafting guidance on high performance buildings. VA also is an active member of the National Institute of Building Science (NIBS) and played an integral role in the development of the Whole Building Design Guide for Hospitals. This guide reaches beyond VA and encourages the design, building, and operation of high performance hospitals everywhere.

VA regularly updates its Hospital Building System, initially developed in 1977, to take into account state-of-the-art hospital design. A key tenet of this system is to minimize the impact of both cost and materials required for future renovations and modifications. By planning for future needs in the initial design of a facility, VA lessens the lifetime impact of building reconstruction and maintenance, thus lowering the total cost of ownership for all facilities.

As **Table 6** shows, the Green Building Advisory Council Sustainable Building Implementation Plan covers the implementation methods for these goals. VA has a number of current projects that will help it reach the goals set out in this SSPP, also outlined in the table. OCFM is responsible for the design and implementation of major construction (≥ $10 million), while the VA Administrations are responsible for the design and implementation for minor construction (< $10 million) and NRM. OAEM provides guidance and takes the lead on reporting for this goal. VA may have difficulty meeting all of the goals shown in **Table 6** given the nature of its mission. For example, VA may never be able to achieve net-zero energy for buildings for healthcare facilities but may achieve the goal for non-healthcare facilities. Net-zero energy is defined as returning as

much energy to the grid, on an annual basis, as a facility takes from it. Since VA builds and operates energy-intensive hospitals and medical research facilities, it may not be realistic to meet this goal. In order to deal with this issue, VA's goal in aiding in the development of federal guidance around net-zero energy buildings will be to determine and develop the appropriate net-zero energy definition for VA medical and research facilities.

VA budgeted $1,194 million for new construction and major renovation projects in FY 2010, $703 million for minor construction, and $592 million for NRM projects. On average, VA designates seven percent of funds for new construction and major renovation projects to address energy and sustainability requirements. However, it is difficult to determine the exact portion of these budgets dedicated to meeting sustainable building goals. Therefore, VA assumes that it leverages 3.5 percent of new construction and major renovation project funding to accomplish these goals. In addition, $3.6 million will be spent in FY 2010 on retro-commissioning projects.[xiii] Individual facilities may also allocate money to projects that satisfy these requirements, but this value has not been captured in **Table 7,** because there is currently no direct mechanism for facilities to report these projects to OAEM. VA anticipates meeting the targets of this goal without the need for incremental funding.

The targets shown in **Table 7** are given in terms of both percent of buildings meeting the Guiding Principles and percent of gross square footage meeting these principles. It is important to note VA plans to achieve the Department's overall target of 15 percent by number of buildings through projects at its owned buildings. VA selected this approach, as it generally does not have significant control over buildings it leases. VA expects to benefit from the EISA requirement that all new building leases after December 19, 2010, will be for buildings that have earned an ENERGY STAR label. Some of these leased buildings may meet Guiding Principles, but VA is not counting on these buildings to meet its targets.

Several organizations within VA provide staff for the sustainable buildings effort. At the Department-level, OAEM provides policy and reporting support. OCFM personnel provide design guidance and standards generation, construction oversight, and program management support. At the VA Administration and facility levels, energy and construction managers, contracting officers, and facility managers all provide support for this effort. Finally, the VA Green Building Advisory Council, Energy Management Task Force, and the Environmental Management Task Force all support various facets of VA's sustainable building efforts.

[xiii] Retro-commissioning is a systematic, documented process that identifies operational and maintenance improvements in existing buildings and brings the buildings up to the design intentions of its current usage. It is a required step in ensuring an existing building meets the Guiding Principles.

Table 6: VA Lead, Implementation Methods, and Projects for Sustainable Buildings

Sub-Goal	Implementation Lead	Implementation Methods	Projects
All	For design, implementation, and internal reporting: • Major Construction (≥$10M): OCFM • Minor Construction (<$10M) and NRM: Administrations External Reporting: OAEM	Sustainable Building Implementation Plan	
All new Federal buildings designed to achieve zero-net energy by FY 2030	See above	See above	• Continue to actively participate as a member of the Interagency Sustainability Working Group that is working to develop net zero energy guidance.
All new construction, major renovation or repair complies with the Guiding Principles	See above	See above	• Develop a new sustainable building standard in line with Guiding Principles. • Certify new major construction projects through either Green Globes or LEED. For example, VA is designing the new hospitals in New Orleans and Denver to be LEED silver and meet the Guiding Principles.
At least 15 percent of existing buildings and leases meet Guiding Principles by 2015	See above	See above	• Continue established program for retro-commissioning existing buildings to ensure they comply with Guiding Principles. • Perform sustainable building assessments to obtain Green Globe or LEED certification.
Demonstrate annual progress towards 100 percent conformance with Guiding Principles	See above	See above	• Develop new sustainable building standard that is in line with Guiding Principles. • Continue established program for retro-commissioning existing buildings to ensure they comply with Guiding Principles.

Sub-Goal	Implementation Lead	Implementation Methods	Projects
Demonstrate cost-effective and innovative building strategies to minimize energy, water and materials consumption	See above	Environmental Management Action Plan Challenge 6	• Develop a new sustainable building standard that is in line with Guiding Principles. • Install smart electric and non-electric meters on all VA owned facilities.
Manage existing building systems to reduce energy, water and materials consumption	See above	Energy Management Action Plan Challenge 2	• Continue established program for retro-commissioning existing buildings to ensure they comply with Guiding Principles.
Optimize real property portfolio to decrease environmental impact	See above	See above	• Develop, through the new SCIP process, a Department-wide plan for optimizing capital expenditures while taking into account environmental impacts.
Ensure best practices in the rehabilitation of historic Federal properties	See above	See above	• Continue to consult local, state, and federal historic preservation organizations before and during historic rehabilitations.

Table 7: Sustainable High Performance Building Targets

SUSTAINABLE HIGH PERFORMANCE BUILDINGS (Buildings Meeting Guiding Principles)	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Owned Facilities Targets (by number of buildings / by gsf)	%	6/13 %	7/13.5 %	8/14 %	10/14.5 %	12/15 %	15/15 %
Leased Facilities Targets (by number of buildings / by gsf)	%	0 %	0 %	0 %	0 %	0 %	0 %
Total Facility Targets (by number of buildings / by gsf)	%	6/13 %	7/13.5 %	8/14 %	10/14.5 %	12/15 %	15/15 %

5. GOAL: Regional and Local Planning

Regional and local planning plays a pivotal role in VA's operations. It is impossible for VA to build new medical centers, extend new services to Veterans, or honor the Nation's fallen without addressing environmental stewardship, transportation, and energy planning of the region. Implementation methods for these goals vary broadly depending on the sub-goal. **Table 8** summarizes the VA lead for each sub-goal and the implementation methods used, as well as a summary of regional and local planning-related projects that are currently underway.

VA identified innovative approaches for integrating its mission with regional and local transportation and energy networks. The Department actively engages with local and regional transportation planners to ensure Veterans are able to travel to VA facilities without driving, since many of VA's customers are elderly or disabled. The Department is moving to a patient-centered healthcare model and, as part of that effort, is co-locating community based outpatient clinics close to the Veterans' residences to reduce Veteran and employee travel distances. In addition, VA works collaboratively with regional and local authorities regarding their energy networks. For example, VA planned the Mountain Home VAMC CHP project in close collaboration with both the local steam consumers and, later, an enhanced-use lease provider. This collaboration resulted in a CHP system fueled by renewable landfill gas that provides steam to local customers through an enhanced-use lease. Another example is one of VA's first major solar PV installations at the Dallas VAMC (**Figure 8**). VA facility staff used the solar PV system to relieve congestion on the local electricity grid as a selling point for the project to the local utility. On-site renewable electricity generation also provides VA Scope 3 emissions savings by reducing T&D losses of purchased electricity. Lastly, while VHA's policy against the use of generators during surgical procedures limits its ability to employ load-shedding, it continues to investigate

Figure 8. Solar PV installation at the Dallas VAMC.

demand response agreements at some VISNs. NCA is currently investigating the benefits of load-shedding both for themselves and for the local and regional electric systems. Another key factor in regional and local planning is water use. Through examining alternative landscape options for its cemeteries, VA can significantly contribute to local water management initiatives in water scarce regions like the West.

Currently, no specific budget for regional and local planning is required, as these actions are incorporated inherently into projects and activities such as EMS implementation. Therefore, no budget table is included for this goal. Determining how many employees work on these issues is difficult. Staff from OCFM, OAEM, the Environmental Management Task Force, the Energy Management Task Force and the Green Buildings Advisory Council all incorporate regional and local planning into their projects and activities when applicable.

Table 8: VA Lead, Implementation Methods, and Projects for Regional and Local Planning

Sub-goal	Implementation Lead	Implementation Methods	Projects
Environmental Stewardship Planning	• Major Construction ($>10M) design, implementation, and internal reporting: OCFM • Minor Construction ($<10M) and NRM design, implementation, and internal reporting: Administrations • Policy and External Reporting: OAEM	• Environmental Management Action Plan challenges 1 and 5 • Sustainable Building Implementation Plan challenge 1	• National Environmental Policy Act environmental assessment and environmental impact statement processes.
Regional Transportation Planning	• Major Construction ($>10M) design, implementation, and internal reporting: OCFM • Minor Construction ($<10M) and NRM design, implementation, and internal reporting: Administrations • Policy and External Reporting: OAEM	• NCA columbarium • Major construction projects generally bring transit to the medical center. • Rural Health Initiative • Home-based primary care	• Incorporating local and regional mass transportation into the design of new facilities.
Local Energy Planning	• Major Construction ($>10M) design, implementation, and internal reporting: OCFM • Minor Construction ($<10M) and NRM design, implementation, and internal reporting: Facilities and VISNs • Policy and External Reporting: OAEM	• Energy planning is part of the NCA evaluation criteria for new locations. • OCFM incorporates regional energy planning through: • LEED points • Architecture and Engineering firm coordination with providers • Utilities might have to build capacity • VA policy is to work with local university hospitals, including sharing: o Research facilities o Residencies o Researchers	• Investigate load shedding at VISN 1 and NCA facilities.

6. GOAL: Water Use Efficiency and Management

VA is committed to meeting EO water use efficiency and management goals, but faces unique challenges in meeting these goals. In addition, achieving water reduction goals presents challenges that vary not only by facility or region, but by Administration as well. Facility and regional challenges vary due to differences in deferred maintenance needs, budgetary priorities, and climate realities. Not all buildings are the same age or require the same degree of maintenance. Some facility and regional directors place greater emphasis on exceeding water reduction goals. No two regions, and few facilities, can expect the same temperatures or rainfall throughout the year.

While facilities and regions vary in the nature of the challenges they face, the Administrations vary by which goals are most challenging. VHA's potable water reduction challenges are greater than its non-potable water reduction challenges. Hospital operations have minimum water requirements, such as the amount of water used in sterilization, and they face concrete restrictions on how they can reuse water. Hospitals do not face challenges as severe, however, in reducing non-potable water usage. Cemetery operations, on the other hand, introduce challenges primarily in non-potable water use. Maintaining respectful cemeteries with the appearance that Veterans and their families currently expect requires large amounts of water, both potable and non-potable water. NCA water use, as a result, represents 12 percent of VA's total water consumption.

Despite the significant challenges VA faces, VA met its FY 2008 and FY 2009 potable water reduction targets. VA's ability to achieve its potable water use reduction goals owes much to the Energy Management Task Force. This task force meets quarterly and maintains VA's Department-level energy action plan, which includes water initiatives. The task force has already updated this plan to reflect the new non-potable water and water reuse requirements of EO 13514. One of the most challenging actions will be to begin measuring non-potable water, which is now metered at only a handful of VA facilities. Fort Bliss National Cemetery in El Paso, TX (**Figure 9**) demonstrates the use of xeriscaping to reduce water consumption while maintaining a respectful appearance.

OAEM is responsible for setting targets and policy for each sub-goal, as well as reporting, while the Administrations, staff offices, and OCFM are responsible for implementation. **Table 9** highlights where VA deviates from this structure, as well as

the implementation methods for each sub-goal. The table also provides a sample of projects that VA will pursue in FY 2010 and FY 2011 to meet its water-related goals.

Table 10 shows the targets for water use efficiency. The energy engineers, VISN energy managers, GMP staff, and GEMS coordinators collaborating on GHG reduction and energy goals also work on water use efficiency. In addition, NCA agronomists, engineers, and maintenance staff have collateral responsibilities for managing water use.

Table 9: VA Lead, Implementation Methods, and Projects for Water-Related Goals

Sub-Goal	Implementation Lead	Implementation Methods	Projects
Reduce Potable Water Use Intensity	For design and implementation: Major Construction (≥$10M): OCFM Minor Construction (<$10M) and NRM: Administrations	Energy Management Action Plan Challenges 2 and 3	• Implement water-related ECMs, including waterless urinals and steam trap maintenance. • Retrofit higher-efficiency steam sterilizers.
Reduce Non-Potable Water Use	For design and implementation: Major Construction (≥$10M): OCFM Minor Construction (<$10M) and NRM: Administrations	Energy Management Action Plan Challenges 2 and 3	• Xeriscaping at Fort Bliss National Cemetery. • Use of “smart” irrigation controllers.
Identify and Implement Water Reuse Strategies	For design and implementation: Major Construction (≥$10M): OCFM Minor Construction (<$10M) and NRM: Administrations	Energy Management Action Plan Challenges 2 and 3	• Continue to identify opportunities such as those identified at Bourne National Cemetery, which uses pump and treat effluent from a project at Otis Air Force Base for irrigation purposes.
Achieve Stormwater Objectives	For design and implementation: Major Construction (≥$10M): OCFM Minor Construction (<$10M) and NRM: Administrations	Sustainable Building Implementation Plan Challenges 1 and 2	• Updated the Sustainability & Energy Reduction Manual to encourage the mitigation of stormwater effects. • Green roofing projects at new construction sites like New Orleans and Bronx VAMC.

Table 10: Water Use Efficiency and Management Targets

WATER USE EFFICIENCY & MGMT	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	....	FY 20
Potable Water Reduction Targets (gal/SF reduced from FY07 base year)	%	6 %	8 %	10 %	12 %	14 %	16 %	....	26 %
Planned Potable Water Reduction (gal/SF reduced from FY07 base year)	%	6 %	8 %	10 %	12 %	14 %	16 %	....	26 %
Industrial, Landscaping, and Agricultural Water Reduction Targets (gal reduced from FY10 base year)	%	-	2 %	4 %	6 %	8 %	10 %	....	20 %
Planned Industrial, Landscaping, and Agricultural Water Reduction (gal reduced from FY10 base year)	%	-	2 %	4 %	6 %	8 %	10 %	....	20 %

7. GOAL: Pollution Prevention and Waste Elimination

VA already has in place several initiatives to accomplish reductions in solid and hazardous waste. For example, VA Caribbean Healthcare System is setting up a Hazardous Waste Minimization Center to help the San Juan VAMC to control and reduce the volume of hazardous materials used and the amounts of hazardous waste generated. In addition, VISN 1 participates in the Environmental Protection Agency's Waste Wise Program. In FY 2009, VA diverted 35.9 percent of its solid waste through recycling, source reduction, and composting programs.

A number of tools are either available or in development to help the Department address issues around paper. The VA Greening Action Guide and Toolkit helps educate staff on topics such as reducing paper usage.[xiv] Along these lines, VA is incorporating green purchasing training into GEMS training to ensure awareness at the facility-level. The training can emphasize source reduction and the message that one should buy only what is needed to avoid the waste of unused products and materials.

VA is facing a number of challenges to meeting pollution and waste goals, such as tracking. For example, VA does not have a standardized method to track the amount of waste generated and disposed. VHA currently gathers information on waste generation, disposal, and diversion by means of an annual data call, which is used to generate its Waste Minimization Report. VA faces some inherent difficulties in its efforts to track construction and demolition (C&D) debris and materials minimization. The contractors who implement the VA Master Construction Specification and who are executing the construction and renovation contracts must report on their C&D avoidance to the VA construction project managers. Currently, VA construction project managers do not have a means of independently verifying these C&D reports. VA is investigating ways to improve its solid waste and C&D debris tracking, either through developing a new system and/or by increasing the frequency of data calls.

VA's mission also makes meeting pollution and waste reduction goals challenging. For example, the use of chemical solvents is required due to Joint Commission on Accreditation of Healthcare Organizations standards and infection control

[xiv] http://www4.va.gov/greenroutine/greeningvaco/toolkit004.asp

requirements.[xv] These cleaning solvents can emit hazardous vapors and be dangerous to work with if not handled properly. Although there are efforts to minimize the use of these solvents through the development of new cleaning procedures and processes, VA medical facilities are still currently required to use these hazardous chemicals. Another example of a challenge that VA faces is the use of fertilizers, herbicides, and pesticides, which may be required to create and maintain a respectful cemetery. To address this challenge, NCA agronomists are researching integrated pest management plans that will reduce the need for pesticides.

OAEM is responsible for setting targets and policy for each sub-goal, as well as reporting, while the VA Administrations and staff offices are responsible for implementation of the policy. The Environmental Management Action Plan is the main method for identifying and tracking actions needed to implement policy across the sub-goals. **Table 11** highlights this structure. The table also summarizes a number of projects that will help VA reach the goals set out in this SSPP. One of the key methods for achieving pollution prevention is the development of handbooks and guidance.

It is difficult to specify the amount VA spends to address pollution prevention and waste elimination, as costs generally occur at the facility-level and are accounted for in several different line items in the facilities' budgets. Furthermore, many of the costs are not readily apparent in cost avoidances. For example, revenue from recycling for a given facility may be greater than the cost of running the program. VA will need to address these and similar issues in order to get an accurate picture of the total investment spent to meet these requirements. VA does anticipate additional funding will be required to achieve the target goals in Table 12. For example, VA may require incremental funds to develop and implement new solid waste and C&D debris tracking methodologies and systems in order to meet the waste diversion targets.

[xv] Accreditation from the Joint Commission on Accreditation of Healthcare Organizations is required for the operation of hospitals in the VA system, as it ensures compliance to federal, state, and local health care related regulations.

Table 11: VA Lead, Implementation Methods, and Projects for Pollution Prevention and Waste Elimination

Goal	Sub-Goal	Implementation Lead	Implementation Methods	Project
Waste	Increase source reduction	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenge 6	• Draft Waste Prevention and Recycling Handbook. • Address source reduction in Draft Green Purchasing Handbook and GEMS green purchasing training.
	Divert at least 50 percent non-hazardous solid waste (excluding C&D debris)	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenge 6	• Draft Waste Prevention and Recycling Handbook. • Update VA Greening Action Guide and Toolkit.
	Divert at least 50 percent C&D materials and debris	• Design, implementation, and internal reporting: o Major Construction (≥$10M): OCFM o Minor Construction (<$10M) and NRM: Administrations • OAEM is responsible for external reporting	Environmental Management Action Plan Challenge 6	• Update Sustainable Design & Energy Reduction Manual. • Draft Waste Prevention and Recycling Handbook. • Draft Sustainable Buildings Handbook.
	Increase diversion of compostable and organic materials	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenge 6	• Draft Waste Prevention and Recycling Handbook. • Update VA Greening Action Guide and Toolkit.
Paper	Reduce printing paper use	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenge 6	• Draft Waste Prevention and Recycling Handbook. • Update VA Greening Action Guide and Toolkit.
	Increase use of uncoated paper containing at least 30 percent	• Office of Acquisition and Logistics and VHA Procurement and Logistics Office (P&LO) (implementation and internal reporting)	Environmental Management Action Plan Challenge 2	• Draft Green Purchasing Handbook. • Implement GEMS green purchasing training.

Goal	Sub-Goal	Implementation Lead	Implementation Methods	Project
	postconsumer fiber	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)		
Chemicals	Reduce the acquisition, use, and disposal of hazardous materials	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenges 2 and 3	• Draft Chemicals Management Handbook. • Initiate Hazardous Waste Minimization center in VA Caribbean Healthcare System. • Implementing GEMS green purchasing training.
	Implement integrated pest management and landscape management practices that lead to reduction of hazardous chemicals	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenge 3	• Draft Chemicals Management Handbook. • NCA agronomists developing integrated pest management guidance.
	Increase use of alternative chemicals and processes	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenge 3	• Draft Chemicals Management Handbook. • NCA agronomists developing integrated pest management guidance. • Drafting Green Purchasing Handbook.
	Decrease use of chemicals to assist in achieving FY 2020 GHG reduction targets	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenge 3	• Draft Chemicals Management Handbook. • NCA agronomists developing integrated pest management guidance.
	Report in accordance with Emergency Planning and Community Right-to-Know Act of 1986	• Administrations and staff offices (implementation and internal reporting) • OAEM (external reporting)	Environmental Management Action Plan Challenges 3 and 5	• Draft Chemicals Management Handbook.

Table 12: Pollution Prevention & Waste Elimination Targets

POLLUTION PREVENTION & WASTE ELIMINATION	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Non-Hazardous Solid Waste Diversion Targets (non C&D)	%	30 %	32 %	35 %	40 %	45 %	50 %
C&D Material & Debris Diversion Targets	%	5 %	10 %	20 %	30 %	40 %	50 %

8. GOAL: Sustainable Acquisition

Sustainable acquisition helps to reduce adverse impacts to the environment, conserve energy, water, and other natural resources, and improve public health and safety. VA has taken a leadership role regarding sustainable acquisition and strategic sourcing, developing a set of comprehensive green product requirements for a major office supply solicitation that VA ultimately transferred to General Services Administration (GSA) at its request. GSA subsequently incorporated these green requirements into the Federal Strategic Sourcing Initiative Office Supply Two solicitation. VA also created several tools to support the Department's sustainable acquisition efforts.

- VA's Environmental Management website includes a section dedicated to green purchasing.[xvi]
- NCA developed an Administration-level Green Purchasing Procedures Handbook.
- VA is drafting a Green Purchasing Handbook to consolidate information on sustainable acquisition into one helpful resource.

Along with these tools, VA is providing training to its employees on green procurement. For example, GEMS coordinators receive green procurement training. This training allows them to use their knowledge of environmental issues and solutions in concert with acquisition and logistics personnel to ensure that their facilities or regions purchase sustainable products and services. This approach greens VA's acquisitions from the bottom up.

VA has a long history of supporting sustainable acquisition efforts. VA has issued policies and procedures mandating the purchase of green products and services. In addition to the efforts described above, VA developed and regularly updates a list of required Federal Acquisition Regulation clauses related to sustainable acquisition that contracting officers should include in new solicitations and contracts. In accordance with its Master Specifications, the Department also requires that energy-consuming equipment acquired for use in new VA facilities be either Federal Energy Management Program (FEMP) designated or ENERGY STAR qualified.

Table 13 shows the projects underway at VA related to sustainable acquisition. For example, the VA Environmental Management Task Force, with support from the Green Purchasing Working Group, is drafting a green purchasing handbook and developing an

[xvi] http://www4.va.gov/environment/GreenPurchasing.asp

updated green purchasing training program to help acquisition staff and purchase cardholders make greener procurement decisions.

VA, along with other federal agencies, faces a tremendous challenge when it comes to meeting goals for sustainable acquisition. It is extremely difficult to track the sustainable attributes of each agency purchase. VA has several systems it uses to track purchasing. In order to measure and report progress towards sustainable acquisition targets, VA will need to continue to make enhancements to its electronic contract writing and financial management systems. Therefore, the targets for these sub-goals are to be determined (TBD), as shown in **Table 14**.

As shown by **Table 13**, OAEM is responsible for setting targets and policy for each goal, as well as providing reporting. The OALC, VHA Procurement and Logistics Office (P&LO), Administrations, and staff offices are responsible for implementation of the policy.

Many VA organizations have integrated support of the Department's sustainable acquisition efforts into their operations. At the Department level, OALC provides policy, logistics, and acquisition support while OAEM provides policy, training, and reporting support. In addition, each Administration has its own purchasing and contracting group. Finally, each facility or region may have its own contracting and purchasing personnel who can leverage the environmental knowledge of the GEMS coordinators to aid them in making green purchasing decisions.

Table 13: Lead, Implementation Methods, and Projects for Sustainable Acquisition

Goal	Implementation Lead	Implementation Methods	Project
Ensure 95 percent of new contract actions require the supply or use of products and services that are sustainable[xvii]	• Policy and External Reporting: OAEM • Implementation and Internal Reporting: OALC, VHA P&LO, Administrations, and staff offices	• Environmental Management Action Plan Challenges 2 and 4 • Green Purchasing Working Group Action Plan	• Negotiate future information technology (IT) products contracts. • Draft Green Purchasing Handbook. • Incorporate Green Purchasing Handbook in draft VA Acquisition Manual.
Update agency affirmative procurement plans, policies and programs to ensure that all Federally mandated designated products and services are included in all acquisitions.	• Policy and External Reporting: OAEM • Implementation and Internal Reporting: OALC, VHA P&LO, Administrations, and staff offices	• Environmental Management Action Plan Challenges 2 and 4 • Green Purchasing Working Group Action Plan	• Draft Green Purchasing Handbook. • Incorporate Green Purchasing Handbook in draft VA Acquisition Manual. • Identify and provide Green Purchasing training.

[xvii] For the purposes of this goal, sustainable products and services are defined as those that are energy efficient (ENERGY STAR or FEMP-designated), water efficient, biobased, environmentally preferable (excluding EPEAT-registered products), non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives.

Table 14: Sustainable Acquisition Targets

SUSTAINABLE ACQUISITION	Units	FY 10	FY 11	FY 12	....	FY 20
New Contract Actions Meeting Sustainable Acquisition Requirements	%	TBD	95 %	hold	hold	hold
Energy Efficient Products (Energy Star, FEMP-designated, and low standby power devices)	%	TBD	TBD	TBD	TBD	TBD
Water Efficient Products	%	TBD	TBD	TBD	TBD	TBD
Biobased Products	%	TBD	TBD	TBD	TBD	TBD
Recycled Content Products	%	TBD	TBD	TBD	TBD	TBD
Environmentally Preferable Products/Services (excluding EPEAT)	%	TBD	TBD	TBD	TBD	TBD
SNAP/non-ozone depleting substances	%	TBD	TBD	TBD	TBD	TBD

9. GOAL: Electronic Stewardship and Data Centers

Electronics stewardship addresses the entire lifecycle -- purchasing, use and disposal -- of electronic products. Given the scale of VA's computer usage - staff operate over 300,000 computers and laptops - addressing electronics stewardship issues is an important step to meeting Department-wide energy and environment goals. As shown in **Table 15**, Challenge 4 of the Environmental Management Action Plan covers all of the goals related to electronics stewardship and data centers.

As a charter signatory to the Federal Electronics Stewardship Memorandum of Understanding in 2004 and a gold-level partner in the Federal Electronics Challenge in 2006 and 2007, VA has demonstrated its leadership of and long-term commitment to electronics stewardship. In 2007, VA awarded a leasing blanket purchase agreement with Dell to provide the Department with EPEAT computers and monitors. In accordance with federal personal property and environmental mandates, VA policy is to reuse or recycle electronics at the end of their useful life at VA. If the equipment is leased, VA can return the equipment to the lessor.

By examining individual components of a data center such as electricity delivery, air handling/cooling, rack design, and structural consideration, VA identified issues it can address to improve the sustainability of its data centers. For example, VA has been able to raise the temperature of the data center from 69°F to 72°F, resulting in both cost and energy savings. VA also is planning to consolidate the total number of data centers it operates, reducing the number of data centers from twelve to four.

Table 15 lists current and future projects that will help VA meet its electronics stewardship and data center goals. For example, VA procured 310,000 licenses of power management software and expects to install them by the end of FY 2010. This will allow VA to track the energy used by the systems in order to create a baseline. Once the baseline is established, and once the software is actively implemented and in use, VA will be able to track the effectiveness of enabling the power management features of the software. VA anticipates that certain hospital-related mission-critical equipment will not be eligible for power management, for example, units connected to

biomedical equipment, and workstations in surgical suites and at nursing stations. By having this software ensure that eligible computers are shut down at night when not in use, VA can potentially reduce annual energy costs by $26 per workstation, potentially resulting in millions of dollars per year in savings.

VA faces some challenges meeting the goals listed in **Table 16**. For example, the Office of Information and Technology (OI&T) shares responsibility for meeting certain aspects of the power management and other energy-environmentally preferable features target with other VA staff offices and Administrations, as well as, to some extent, individual employees who have influence over what type of equipment is requested and purchased, and whether double-sided printing (duplexing) and other energy-environmentally preferable features are enabled and utilized. This shared responsibility introduces uncertainty regarding the exact percentage of VA eligible electronic products that meet this requirement. Therefore, the target for this sub-goal for FY 2010 is to be determined (TBD). In order to address this issue, VA can update guidance to stress the use of environmentally favorable imaging features such as duplexing. VA will also train purchase cardholders in accordance with the Green Purchasing Handbook to ensure that their purchases of eligible electronics include applicable environmentally favorable features. Finally, VA will enable the power management software on workstations and servers, where appropriate.

VA has long-standing policies to purchase and use ENERGY STAR qualified products, when available, and to include green clauses in contracts. Based on these policies, VA believes that it is performing well regarding this sub-goal. As stated above, all computers and monitors obtained through the current leasing agreement are ENERGY STAR qualified. In addition, as stated in Section II.8, Sustainable Acquisition, VA's Master Specification requires that energy consuming equipment acquired for use in new VA facilities be either FEMP designated or ENERGY STAR qualified. Furthermore, at least 80 percent of computers, monitors, and laptops obtained through NASA SEWP IV[xviii] are known to be ENERGY STAR compliant, with the remainder likely so, although data for them is not readily available. Finally, the VA OI&T data center program set a target to have 70 percent of applicable data center equipment be ENERGY STAR qualified for FY 2010. However, due to the decentralized purchasing and operation of other electronic equipment, such as imaging devices, it is extremely difficult for VA to quantify precisely the percentage of this equipment covered by current ENERGY STAR specifications. VA's strategy to mandate purchases of ENERGY STAR qualified equipment when available and to include green clauses in contracts is a better use of available resources at this time than creating a comprehensive inventory of all electronic equipment purchased and in use. Therefore, the target for this sub-goal is TBD. Similarly, due to the distributed responsibility for applicable electronics, VA currently does not have a way to centrally track the disposition methods of all electronics. Therefore, the target for this goal is also TBD. To address these challenges, VA is

[xviii] The NASA SEWP (Solutions for Enterprise-Wide Procurement) IV Government-Wide Acquisition Contract provides the latest in IT products for all Federal Agencies. While ENERGY STAR language was incorporated into the NASA SEWP IV contract, it appears that non-ENERGY STAR qualified equipment is available through the NASA SEWP IV catalog, and that NASA itself does not track whether the equipment that agencies purchase through the catalog is ENERGY STAR.

developing systems for tracking its progress in all three phases of the electronics stewardship lifecycle and instituted a data call to all Administrations and staff offices requesting information on the disposition of electronics. Thanks to a Memorandum of Understanding between VA and UNICOR, many VA facilities are using UNICOR to manage end-of-life electronics. UNICOR has stated that 100 percent of the material received from VA is recycled.

Several offices and groups support this effort. OI&T provides the staff to support and implement VA policy as it pertains to the operation, maintenance, and disposition of computers and data centers. OAEM staff, the Environmental Management Task Force, a VA greening data centers working group, VA personal property managers, and GEMS coordinators provide policy, reporting, and implementation support.

Table 15. Lead, Implementation Methods and Projects for Electronics Stewardship and Data Centers

Goal	Sub-Goal	Implementation Lead	Implementation Methods	Projects
Electronics Stewardship	Establish and implement policy to ensure use of energy and environmentally preferred options	• Policy and External Reporting: OAEM • Implementation and Internal Reporting: OI&T, Administrations and Staff Offices	Environmental Management Action Plan Challenge 4 Energy Action Plan	• Draft Electronics Stewardship Handbook. • Draft Green purchasing handbook. • Track future IT products contracts to ensure they meet green requirements. • Develop system for tracking progress in the three phases of the lifecycle. • Draft VA Greening Action Guide and Toolkit.
	Update policy to reflect environmentally sound practices for disposition of all agency excess or surplus electronics	• Policy and External Reporting: OAEM, OA&L • Implementation Internal Reporting: OI&T, OA&L, VHA P&LO, Administrations and Staff Offices	Environmental Management Action Plan Challenge 4	• Draft Electronics Stewardship Handbook.
	Discuss how the agency will increase the quantity of electronic assets disposed through sound disposition practices	• Policy and External Reporting: OAEM • Implementation Internal Reporting: OI&T, OA&L, VHA P&LO, Administrations and Staff Offices	Environmental Management Action Plan Challenge 4	• Draft Electronics Stewardship Handbook.
Data Centers	Update agency policy to ensure implementation of best management practices for energy efficient management of servers & Federal data centers	• Policy and External Reporting: OAEM and OI&T • Implementation Internal Reporting: OI&T	Environmental Management Action Plan Challenge 4	• Draft Data Center Consolidation Plan.
	Establish goals to meet technology energy consumption reduction goals in data centers	• Policy and External Reporting: OI&T • Implementation Internal Reporting: OI&T	Environmental Management Action Plan Challenge 4	• Draft Data Center Consolidation Plan.

Table 16: Electronics Stewardship and Data Center Targets

ELECTRONIC STEWARDHIP & DATA CENTERS	Units	FY 10	FY 11	FY 12	FY 13
percent of device types covered by current Energy Star specifications that must be energy-star qualified	%	TBD	TBD	TBD	hold
percent of electronic assets covered by sound disposition practices	%	TBD	hold	hold	hold
percent of cloud activity hosted in a data center	%	26 %	30 %	60 %	hold
percent of agency data centers independently metered or advanced metered and monitored on a weekly basis	%	85 %	90 %	100 %	hold
Reduction in the number of agency data centers	%	0 %	20 %	40 %	hold
percent of agency, eligible electronic products with power management and other energy-environmentally preferable features (duplexing) actively implemented and in use	%	TBD	95 %	100 %	hold
percent of agency data centers operating at an average bandwidth utilization of 85 percent	%	25 %	33 %	50 %	hold
percent of agency data centers operating with an average CPU utilization of 60-70 percent	%	33 %	50 %	75 %	hold
percent of agency data centers operating at a PUE range of 1.3 – 1.6	%	20 %	25 %	50 %	hold
percent of covered electronic product acquisitions that are EPEAT- registered	%	95 %	hold	hold	hold
percent of agency data center activity implemented via virtualization	%	18 %	30 %	40 %	hold

10. GOAL: Agency Innovation

As the largest civilian Federal agency, VA is in a unique position to employ innovative strategies to achieve its goals. New methods and programs are vital to allow VA to meet its mission demands in a dynamic world. The following are a sampling of ways in which VA is embracing innovation:

- VA is a leader in sustainable building design for hospitals and has worked with NIBS to develop the Whole Building Design Guide for Hospitals. In addition, VA is taking a lead in the Federal Interagency Sustainability Working Group to define net zero buildings.

- VA is conducting a study at the John D. Dingle VAMC to quantify the amount of process energy load that is typical of medical facilities. Process load energy use at medical facilities is not clearly understood in the industry. This study will help VA understand and manage medical process energy loads effectively.

- VA is working with the American Society of Heating, Refrigerating and Air-Conditioning Engineers to conduct ventilation studies and experiments in a vacant VA hospital in Florida. This is a unique opportunity as field experiments can be conducted in an actual hospital without affecting patient care, while providing real world results.

- VA installed a renewably fueled CHP system at the Mountain Home VAMC. This system is being used as a model for others.

- VA's telehealth program currently provides care to 42,000 Veteran patients in their homes and local communities using technologies, such as Home Telehealthcare System.[xix] This approach contributes to GHG emission savings by reducing the need for employee and patient travel while expanding services to Veterans.

- VA has two Department-level employee recognition programs, one for environmental and energy professionals who specialize in sustainable projects, and another for employee grassroots environmental efforts. The programs encourage and promote energy efficiency and sustainability along with other green management initiatives. VA gives Green Routine Awards to employees who have developed, initiated, and/or significantly contributed to efforts and programs outside of their daily duties to instill and encourage green, sustainable practices at their workplace. These practices encompass energy and water reduction, reduction in petroleum-based fuels, and other sustainability areas. The VA Sustainability Achievement Awards are given to professionals within the agency who have demonstrated outstanding environmental stewardship, and whose efforts have resulted in significant contributions to the environment. The award categories include waste/pollution prevention, recycling, green purchasing,

[xix] Telemedicine is the dissemination of medical information through interactive media for the purpose of consultation and possibly even remote medical examinations.

environmental management systems, high performance/ sustainable buildings, alternative fuel/ fuel conservation in transportation, and electronics stewardship.

Section 3: Agency Self Evaluation

Does your plan provide/consider overarching strategies and approaches for achieving long-term sustainability goals?	Yes
Does your plan identify milestones and resources needed for implementation?	Yes
Does your plan align with your agency's 2011 budget submission?	Yes
Is your plan consistent with your agency's FY 2011 budget and appropriately aligned to reflect your agency's planned FY 2012 budget submission?	Yes
Does your plan integrate existing EO and statutory requirements into a single framework and align with other existing mission and management related goals to make the best use of available resources?	Yes
Does your plan provide methods for obtaining data needed to measure progress, evaluate results, and improve performance?	Yes

Section 1: The Agency Policy and Strategy document outlines VA's planned actions for July through December 2010 and January through June 2011:

- Construct up to 91 alternative fueling stations to extend VA's alternative fuel use, recognizing that increased alternative fuel use is VA's best approach to reducing petroleum use, given its expanding mission.
- Complete electric metering at all VA owned facilities two to three years ahead of the EISA requirement and non-electric metering five years ahead of the EISA requirement.
- Install and commission at least 26 on-site renewable electricity projects, including solar PV, wind, and geothermal.
- Implement renewably fueled CHP projects at up to 17 VA facilities.
- Build 4 million square feet of new building space compliant with the Guiding Principles.
- Install power management software on 310,000 computers.
- Roll out 11 sustainability-related handbooks on topics such as green purchasing, energy, fleet, and EMS.

VA action plans – Energy and Water, Environment, Fleet, GHG, and Sustainable Buildings - contain target dates for these and other planned actions.

Appendix: Acronyms

AFV	Alternative Fuel Vehicle
ARRA	American Recovery and Reinvestment Act of 2009
BTU or Btu	British Thermal Unit
C&D	Construction and Demolition (waste)
CAFÉ	Corporate Average Fuel Economy
CHP	Combined Heat and Power
CPU	Central Processing Unit
DoD	Department of Defense
ECM	Energy Conservation Measure
EISA	Energy Independence and Security Act
EMS	Environmental Management System
EO	Executive Order
EPEAT	Electronic Product Environmental Assessment Tool
ESPC	Energy Services Performance Contract
EUL	Enhanced-Use Lease
FCA	Facility Condition Assessment
FEMP	Federal Energy Management Program
FTEE	Full-Time Employee Equivalent
FY	Fiscal Year
gal	Gallon
GEMS	Green Environmental Management System
GGE	Gallon of Gasoline Equivalent
GHG	Greenhouse Gas
GMP	Green Management Program
GP	Green Purchasing
GPRA	Government Performance and Results Act
GSA	General Services Administration
GSF	Gross Square Feet
IT	Information Technology
LEED	Leadership in Energy and Environmental Design
M	Million
mpg	Miles Per Gallon
MWh	Megawatt Hour
NCA	National Cemetery Administration
NIBS	National Institute of Building Sciences
NPV	Net Present Value
NRM	Non-Recurring Maintenance
O&M	Operations and Maintenance
OALC	Office of Acquisition, Logistics, and Construction
OAEM	Office of Asset Enterprise Management
OCFM	Office of Construction and Facilities Management
OI&T	Office of Information and Technology

OMB	Office of Management and Budget
P&LO	Procurement and Logistics Office
PPA	Power Purchase Agreement
PSS	Public Sector Standard
PUE	Power Usage Efficiency
PV	Photovoltaic
ROI	Return on Investment
SCIP	Strategic Capital Investment Plan
SIR	Savings-to-Investment Ratio
SF	Square Feet or Square Footage
SNAP	Significant New Alternatives Policy
SSO	Senior Sustainability Officer
SSPP	Strategic Sustainability Performance Plan
T&D	Transmission and Distribution
TBD	To Be Determined
UESC	Utility Energy Services Contract
UNK	Unknown
U.S.	United States
VA	Department of Veterans Affairs
VACIP	VA Capital Investment Panel
VAMC	VA Medical Center
VBA	Veterans Benefits Administration
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network