

Tennessee Valley Authority
Strategic Sustainability Performance Plan

Executive Order 13514

Federal Leadership in Environmental, Energy, and Economic Performance

Prepared by:



June 29, 2012

Overview

Policy Statement

Since its inception, the people of the Tennessee Valley Authority (TVA) have maintained a proud history of environmental leadership. On May 18, 1933, the President signed the TVA Act into law to create an Agency that serves the Valley through its energy, environment, and economic development mission. To this day, TVA remains committed to leading the way in environmental sustainability. TVA's Environmental Policy is to provide cleaner, reliable, and affordable energy to support sustainable economic growth in the Tennessee Valley, and to engage in proactive environmental stewardship in a balanced and ecologically sound manner. TVA's pursuits in these areas benefit the well-being of its employees and customers, the people being served, and the natural resources it stewards.

In August 2010, the TVA Board of Directors adopted a renewed vision that will help TVA lead the Tennessee Valley region and the nation toward a cleaner and more secure energy future. Over the next decade, TVA will place greater emphasis on the following areas: low rates, high reliability, responsibility, cleaner air, more nuclear generation, and greater energy efficiency. By accomplishing these, TVA realizes its vision, meets the needs of its customers, and promotes a strong foundation for a sustainable future.

TVA employees manage many environmental sustainability programs, including technology innovation, environmental stewardship and compliance, a growing renewable energy portfolio, and a comprehensive economic development program. TVA will strive to integrate the goals of Executive Order (E.O.) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* and to understand and address climate change adaptation in its existing innovative programs and new efforts. Pursuant to the E.O., this comprehensive Strategic Sustainability Performance Plan (SSPP) addresses key aspects of TVA's energy, environmental, economic, and social resources and responsibilities in the 21st century.

As part of this SSPP, TVA has established specific goals. Annually, TVA will measure and report its progress toward each of these goals using the existing Environmental Management System (EMS) platform and performance reporting process. TVA's SSPP will be driven not only by the goals set forth in E.O. 13514, but also by the TVA Strategic Plan, the 2010 TVA Environmental Policy, and the TVA Integrated Resource and Natural Resource plans. These environmental goals will be an integral part of how TVA does business, and will be tracked along with its other business objectives.

TVA's budget for meeting the TVA SSPP goals will be based upon non-appropriated dollars; therefore, this plan and all proposed goals and projects hereunder shall be subject to the availability of funding as TVA, at its discretion, deems appropriate and practicable.

To conclude, this SSPP is intended for the internal management of TVA only and is not intended to, nor does, create any right or benefits, substantive or procedural, enforceable at law or equity against TVA or the United States, or their officials, employees, or agents or any other person.

Signed,



Dr. Joseph J. Hoagland
Senior Sustainability Officer

Executive Summary

TVA's key achievements and challenges for FY 2011 and future plans (FY 2013) toward sustainability are outlined in this summary.

Key Achievements and Successes

- TVA has consistently met building energy reduction goals and currently is using nearly half the energy of the federal average for goal-subject buildings.
- TVA began a four-year process to upgrade its video and audio conferencing capabilities and increase employee awareness of such capabilities in order to reduce employee business travel, as appropriate, in order to meet the greenhouse gas (GHG) targets.
- TVA ended FY 2011 with an agency renewable energy percentage of 8.4%, which exceeds the FY 2011 goal of 5% and the FY 2013 goal of 7.5%.
- TVA continues to manage its building assets through its TVA Facilities Strategic Plan – removing 100 buildings from the TVA corporate portfolio resulting in a total savings of over \$64 million.
- In FY 2011, TVA surveyed 4,434,619 sq. ft. of covered facilities, meeting the 75% survey goal. These surveys resulted in identification of \$7.9 million in energy and water improvements with a potential cost savings of \$0.83 million per year.
- TVA added 183 flex fuel vehicles, 4 electric vehicles to its fleet, and installed four charge outlets at its Chattanooga Office Complex to support the use of electric vehicles.
- TVA executed an agency-wide waste disposal contract to achieve progress towards waste diversion targets and to establish a reporting process for waste diversion.
- TVA's Office Recycling Program has a 30% recycling rate for office waste at its Knoxville and Chattanooga locations.
- TVA launched a pilot recycling effort for used writing instruments, including pens, markers and pencils.
- TVA's Green Products List, which details over 350 required green products, was revamped to serve as a more user-friendly resource for employees and contractors. As a result of the implemented correction plan, TVA achieved 95% compliance for FY 2011 Q4.
- TVA purchased over 10,300 environmentally preferred (Electronic Product Environmental Assessment Tool [EPEAT] designated) PCs and monitors, and achieved a 99.7% EPEAT purchase rate.
- TVA hosted the first TVA Solar Solutions Forum to bring together Tennessee Valley solar stakeholders to promote innovative solar technology solutions at a collaborative and educational two-day event.

Key Challenges, Lessons Learned, and Tradeoffs

- The E.O. 13514 applicability of TVA's vehicle fleet has been uncertain, making the implementation of various vehicle fleet strategies more difficult. TVA has concluded discussions with the Office of Management and Budget (OMB) on this issue toward addressing its vehicle fleet strategies.
- TVA has turned its attention to retrofitting multiple smaller buildings due to the OMB rule change that emphasized numbers of building reporting verses square footage reporting. This change has "reduced" TVA's progress toward the associated goal due to its previous focus on the largest office buildings.
- The availability of E85 fuel is limited within the Tennessee Valley region.
- TVA also determined that retrofitting the Sustainable Guiding Principles to smaller buildings has a much lower payback.

Future Plans

- TVA is focusing on expanding its renewable program to support a shift to cleaner energy; we actively promote residential, commercial, and industrial energy efficiency programs.
- TVA is targeting research and development programs to support electric vehicles, charging infrastructure, and charging energy efficiency.
- TVA is planning for the third year of hosting the Utility Environmental Benchmarking Forum, with a focus to improve utilities' environmental performance.
- TVA's Fleet Plan will be revised to focus on a long-term integrated strategy for reducing petroleum consumption and increasing alternative fuel usage.
- TVA plans to reduce its industrial water use by switching from wet ash handling and storage to dry ash handling and storage. Once this is accomplished the resulting non-potable water savings will well exceed the goal.
- TVA's Natural Resource Plan (NRP) Climate Sentinel Monitoring is expected to begin in FY 2013. Additional detail is provided in TVA's Climate Change Adaptation Action Plan (Appendix 2).
- TVA plans to continue adopting the Electric Utility Industry Sustainable Supply Chain Alliance's (EUISSCA's) best practices, standards, and metrics as part of the TVA Integrated Supply Chain Sustainability Strategy and will establish appropriate targets for focused improvements.

Section 1: Organization and Scope

I. Sustainability and the Agency Mission

The TVA Mission includes serving the Tennessee Valley through energy, environment, and economic development. These areas of service have a direct, clear relationship with environmental sustainability, so achieving the E.O. 13514 goals directly supports the broader TVA Mission.

Sustainability focuses on environmental, economic and social criteria, aspects that are already integral to TVA and its mission:

The TVA Environmental Policy and commitment to cleaner energy correlates exactly with the environmental aspect of sustainability. TVA efforts to manage natural resources responsibly, reduce emissions, explore renewable energy, all while providing affordable and reliable power, are central to this commitment.

TVA's economic development commitment mirrors the economic aspect of sustainability through goals of increasing capital investment and attracting and retaining good jobs for the people served by TVA.

The TVA mission is supported by its values, all of which reflect sustainability's social aspect: safety, diversity, integrity and respect, honest communication, accountability, teamwork, flexibility, and continuous improvement.

Table 1: Agency Size and Scope

<i>Table Color Codes:</i>	
Yellow:	Agency enters
Green:	Prepopulated with data from FY11 plan if available; agencies update if needed
Blue:	Prepopulated with data from Federal Energy Management Program (FEMP) if available
Orange:	Prepopulated from FY11 plan and agencies do not need to update
Purple:	Prepopulated with data from Federal Real Property Profile (FRPP) if available
Pink:	Prepopulated with data from (Federal Automotive Statistical Tool) FAST if available

Agency Size and Scope	FY10	FY11	Comments
Total # Employees as Reported in the President's Budget	12457	12457	
(New) Estimated # Onsite M&O Contractors in Government-owned Contractor-operated (GOCO) Facilities		13000	Varies; changes regularly
Total Acres Land Managed	328,000	328,000	
Total # Facilities Owned	2841	2304	
Total # Facilities Leased (General Services Administration [GSA] lease)	0	0	
Total # Facilities Leased (Non-GSA)	35	35	
Total Facility Gross Square Feet (GSF)	28512948	28512948	
(New) Facility Gross Square Feet (GSF) Subject to Energy Intensity (Btu/GSF) Reduction Goal	9032	8288	
Facility Gross Square Feet (GSF) Excluded from Energy Intensity (Btu/GSF) Reduction Goal	19481	18706	

Agency Size and Scope	FY10	FY11	Comments
Operates in # of Locations Throughout U.S.	7	7	States
Operates in # of Locations Outside of U.S.	0	0	
Total # Fleet Vehicles Owned	1685	1966	
Total # Fleet Vehicles Leased	0	0	
Total # Exempted-Fleet Vehicles (Tactical, Emergency, Etc.)	1685	140	
Total Discretionary Budget as Enacted for the Fiscal Year (\$MIL)	10870	10870	
Total # New Contracts Awarded as Reported in Federal Procurement Data System (FPDS)	90680	90680	
Total Amount Contracts Awarded as Reported FPDS) (\$MIL) ¹	3300	3300	
Total Amount Spent on Facility Energy Consumption (\$MIL)	25.6	25.7	
Total Amount Spent on Mobility and Other Non-Facility Energy Consumption (\$MIL)	11.4	14.9	
Total Energy Intensity of Goal-Subject Buildings (Btu/GSF)	55628	53529	
Total Gallons of Potable Water Consumed per GSF	25.0	23.3	
Industrial, Landscaping and Agricultural Water (Non-Potable) (Thous.	115010040	114062000	

II. Greenhouse Gas Reduction Targets

TVA has established greenhouse gas (GHG) emission reduction targets for Scope 1 (direct) and Scope 2 (indirect) emissions in accordance with E.O. 13514. The GHG target is a 17 percent reduction of Scope 1 and 2 emissions from the FY 2008 baseline by FY 2020. This emission reduction will be supported through two primary mechanisms: 1) improving the energy efficiency of the TVA Chattanooga and Knoxville Office Complexes and other major buildings; and 2) improving the reliability and efficiency of the TVA hydro-generating portfolio. Based on the guidance in E.O. 13514, direct emissions from TVA's operations related to the production of power are excluded from the GHG reduction directives.

TVA has also established GHG reduction targets for Scope 3 (indirect) emissions associated with employee travel, waste disposal, and transmission and distribution losses from purchased electricity as required by E.O. 13514. The overall reduction target for Scope 3 emissions is 20.7 percent by FY 2020, compared to an FY 2008 baseline. Efforts to achieve the target will be based primarily through reductions in solid waste disposal, reduced energy usage in TVA buildings, higher fuel efficiency standards for new cars and light trucks, and increased use of employee telecommuting and employee car-pooling.

III. Plan Implementation

TVA will use its re-deployed EMS to identify high priority environmental sustainability projects and, in conjunction with its business planning process, to consider environmental sustainability in all projects implemented at TVA. Metrics for these projects will be tracked through the EMS procedures and aligned with TVA's performance reporting process.

a. Internal Coordination and Communication

TVA will communicate the objectives and goals of this SSPP, as well as progress toward objectives, to all TVA employees via the TVA internal website—InsideNet. Additionally, highlights of initiatives and significant progress toward meeting plan goals will be shared via the daily—TVA Today email updates and monthly newsletter—Inside TVA. TVA's Environmental Policy and Regulatory Affairs Business Unit is responsible for compiling information and reporting on progress under this SSPP; as well as, other aspects of the TVA Environmental Program. This mechanism will allow the continued identification of opportunities to integrate sustainability requirements into existing planning documents. The Environmental Performance and Regulatory Affairs Business Unit works closely with the Employee and Stakeholder Environmental Relations and Environmental Sustainability Business Units and the TVA Corporate Communications Staff to ensure coordination and communication of this plan across the agency.

b. Coordination and Dissemination of the Plan to the Field

In addition to the Internal TVA communications detailed in Section "a." above, Environmental Program objectives and targets (including targets associated with each Goal Performance Area) will be incorporated into facility-level (field-level) business plans, as appropriate, to ensure implementation in the field as well as at Corporate Offices.

c. Leadership and Accountability

TVA implementation of the Sustainability Plan will be accomplished by the following key staff:

Dr. Joe Hoagland – TVA Senior Vice-President of Policy and Oversight and TVA Senior Sustainability Officer.

John Myers – under Policy and Oversight, TVA Director, Environmental Policy and Regulatory Affairs.

Robert M. Balzar – under Policy and Oversight, TVA Vice-President, Energy Efficiency and Demand Response.

Jason Mitchell – under Environmental Policy and Regulatory Affairs, TVA SSPP Senior Project Manager.

David R. Zimmerman – under Energy Efficiency and Demand Response, TVA Chief Energy Manager and Manager of TVA Internal Energy Management Program (IEMP).

TVA maintains a staff of dedicated professionals to provide leadership and focus for its environmental sustainability efforts, including the TVA-designated Chief Energy Manager, as required by past E.O.s and

legislation. The Director, Environmental Policy and Regulatory Affairs is the TVA point of contact with the OMB and Council on Environmental Quality (CEQ) on sustainability reporting.

The Environmental Sustainability Program's goal is to reduce the non-power block component of the TVA environmental footprint as a federal agency. The program achieves this goal by issuing and maintaining the TVA SSPP; directing the TVA internal Environmental Sustainability team; engaging employees on personal sustainability; and implementing actions to improve the TVA internal environmental footprint in collaboration with others.

TVA has set up a governance structure that includes the Sustainability Steering Committee (SSC) and the Energy and Environmental Sustainability Committee (EESC) which develops, prioritizes, and approves projects to coordinate energy-saving and sustainability efforts throughout the agency. This governance structure includes executive leadership and their representatives across TVA strategic business units. Members of the SSC are executive leaders that have buildings, systems, assets, facilities, and programs that either implement or are affected directly by the implementation of SSPP projects. They approve annual funding for the most cost-effective and practicable sustainability projects that reflect TVA priorities.

Members of the EESC manage TVA facilities, buildings, vehicles and information technology (IT) assets. They report and communicate about the TVA sustainability goals and accomplishments and also serve on eight subcommittees. The EESC will serve the role required of an Agency Energy Management Committee by past E.O.s and legislation.

The EESC membership includes Environmental Sustainability Program staff, Working Subcommittee leads, Federal Working Group members, and representatives from organizations that are signatories to the SSPP. This subcommittee leads and manages the collaborative, cross-organizational efforts of the Working Subcommittees as TVA updates and achieves the goals in the SSPP. As part of developing and maintaining the SSPP, this subcommittee sets priorities and agrees on projects. It makes presentations internally and externally to promote the TVA Environmental Sustainability Program. Representatives on Working Subcommittees are responsible for achieving the E.O. goals and related TVA environmental sustainability goals. The Working Subcommittees develop, implement and oversee planned projects within their own organizations; report implementation progress and results; and update the SSPP annually. Working Subcommittees include:

- Communications and Innovations,

- Electronic Stewardship and Data Centers,

- Greenhouse Gas,

- Green Procurement,

- High-Performance Facilities and Regional and Local Planning, and

- Pollution Prevention and Waste Reduction.

Accountability for accomplishing the SSPP will be managed through TVA's Integrated Performance Management (IPM) system. The system is a five-step process designed to improve individual employee performance by providing clear goals, support for learning and development, ongoing coaching and feedback, and periodic performance reviews. The overall goal of the IPM is to promote excellence in business performance and public service through high-performing and fully engaged employees.

Through the system, employees clearly see how their individual performance objectives support their Business Unit performance plans, which then support the TVA Critical Success Factors. All employees involved in accomplishing E.O.s can align their efforts with the TVA Critical Success Factors to continue to reduce the impacts of TVA operations on the environment.

d. Agency Policy and Planning Integration

TVA will seek to incorporate the goals of the SSPP into existing plans and policies. The following describes four major plan and policy documents:

Delivering the Vision

In August 2010, the TVA board of directors adopted a renewed vision that will help TVA lead the Tennessee Valley region and the nation toward a cleaner and more secure energy future, relying more on nuclear power and energy efficiency and less on coal. TVA's renewed vision is to be one of the nation's leading providers of low-cost and cleaner energy by 2020.

More specifically, TVA intends to be: the nation's leader in improving air quality, the nation's leader in increased nuclear production, and the Southeast's leader in increased energy efficiency. Greater emphasis will be placed on: low rates, high reliability, responsibility, cleaner air, more nuclear generation, and greater energy efficiency. By aligning TVA's sustainability efforts with our Vision, we link our efforts toward achieving the TVA mission by improving quality of life and economic prosperity for people and businesses in the TVA service area.

TVA Environmental Policy (2010)

The TVA Environmental Policy objective is to provide cleaner, reliable, and affordable energy; support sustainable economic growth in the Tennessee Valley; and engage in proactive environmental stewardship in a balanced and ecologically sound manner. In 2010, a biennial assessment of the 2008 Environmental Policy was conducted and reviewed by the TVA Board of Directors. The results of this review indicated that the Policy continues to reflect TVA's current environmental intentions and serve as a guide for strategic and operational decision-making.

This Environmental Policy provides Board-level guiding principles to successfully lead TVA to reduce its environmental footprint while continuing to provide reliable and competitively priced power to the Tennessee Valley. There is a growing recognition of the environmental and economic need for an increased emphasis on actions that support sustainable initiatives to most effectively meet the three dimensions of the TVA mission. Following the release of the 2007 TVA Strategic Plan, the Board asked for the development of an integrated environmental policy to outline objectives and critical success factors across the multiple areas of TVA activities. The TVA Environmental Policy has objectives in each of the following six areas: Climate Change Mitigation and Adaptation, Air Quality Improvement, Water Resources Improvement, Waste Minimization, Sustainable Land Use, and Natural Resource Management.

TVA Integrated Resource Plan

TVA has completed its Integrated Resource Plan (IRP), titled—TVA's Energy and Environmental Future. This plan and the associated Environmental Impact Statement (EIS) are the result of extensive analysis and collaboration with TVA partners and stakeholders.

The IRP supports TVA's comprehensive mission of service, which includes meeting the electric power needs of its customers in a reliable, affordable, and sustainable manner. The plan identifies the resources that will be needed to satisfy expected energy demand in the Tennessee Valley region over the next 20 years.

TVA Natural Resource Plan

TVA has completed a Natural Resources Plan (NRP) – a comprehensive strategic study of environmental stewardship needs. The NRP addresses strategies for Water Resources; Reservoir Lands Planning; Recreation, Biological and Cultural Resources; and Public Engagement and Governance on TVA lands. The NRP is consistent with the TVA Environmental Policy and TVA Land Policy, and with the previous Shoreline Management Initiative and Reservoir Operations Study.

e. Agency Budget Integration

The TVA Business Plan is the fundamental link between the TVA Strategic Plan and its business processes. The implementation of this Business Plan reinforces TVA's commitment to the TVA Mission and stakeholders and aligns each business unit's key initiatives with the TVA Critical Success Factors. This alignment enables TVA to manage its priorities and resources in order to effectively address customer, financial, operational, and organizational initiatives for each fiscal year.

TVA plans to establish environmental program objectives and targets for each of the E.O. 13514 goals as a part of the TVA EMS planning process. TVA would outline these objectives and goals in the annual Business Planning guidance. The guidance will be used by the Strategic Business Units (SBU) for incorporation in SBU and facility-level Business Plans, as appropriate.

E.O. 13514 projects have been identified and will be monitored manually in FY 2012 and FY 2013. Projects will be incorporated into the TVA project justification process and entered into the project's accounting system for capturing cost and budget information. The TVA budget for meeting the TVA SSPP goals will be based on non-appropriated dollars; therefore, this plan and all proposed goals and projects hereunder shall be subject to the availability of funding as TVA, at its discretion, deems appropriate and practicable. E.O. 13514 goals that are identified as part of the TVA routine operations and maintenance activity will be monitored manually by coordinating efforts between senior management and Financial Services. Specific routine tasks will be identified for reporting on a monthly basis.

In FY 2013, the SSPP budget will be derived from the TVA Business Plan and incorporated into the TVA project accounting system. The E.O. 13514 projects will be flagged in the TVA project accounting system to automate the capture of cost and budget information.

f. Methods for Evaluation of Progress

Objectives and targets for each of the E.O. 13514 goals have been outlined in this SSPP and will be incorporated into the TVA EMS planning process and in the annual Business Plan guidance. As a part of Business Plan development for the upcoming fiscal year, metrics and performance indicators will be established for each goal area and incorporated in applicable SBU and TVA Business Plans. Progress toward achieving the objectives and targets will be tracked using the EMS and performance monitoring and reporting processes, and will be communicated using existing internal reports. Self-assessments and periodic independent internal audits at the facility level and program audits conducted under the EMS will also be used to evaluate progress toward meeting the E.O. 13514 goals. Significant deviations from plans and targets will be managed using the Corrective Action Program (CAP), as required in the EMS. Table 2 presents the critical planning coordination activities being conducted by TVA business units.

Table 2: Critical Planning Coordination

Originating Report / Plan	Scope 1&2 GHG Reduction	Scope 3 GHG Reduction	Develop and Maintain Agency Comprehensive GHG Inventory	High-Performance Sustainable Design / Green Buildings	Regional and Local Planning	Fleet Management	Water Use Efficiency and Management	Pollution Prevention and Waste Elimination	Sustainable Acquisition	Electronic Stewardship and Data Centers	Agency Specific Innovation
Government Performance Results Act (GPRA) Strategic Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agency Capital Plan	N/A	N/A	N/A	N/A	N/A	No	N/A	N/A	N/A	N/A	N/A
A-11 300s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Annual GHG Inventory and Energy Data Report	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	N/A
Energy Independence and Security Act (EISA)-Covered Facility Evaluations/Project Reporting/Benchmarking	Yes	Yes	Yes	Yes	No	N/A	Yes	No	No	No	N/A
Budget	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Asset Management Plan / 3 Year Timeline	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Circular A-11 Exhibit 53s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OMB Scorecards	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	N/A
DOE's Annual Federal Fleet Report to Congress and the President	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A
Data Center Consolidation Plan	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A
Environmental Management System	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No	Yes
Climate Change Adaptation Plan	No	No	No	No	Yes	No	Yes	No	No	No	Yes
Fleet Management Plan	Yes	Yes	N/A	N/A	No	Yes	N/A	N/A	Yes	N/A	Yes
Other (reports, policies, plans, etc.)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A

IV. Evaluating Return on Investment

TVA considers the economic business case for all new projects and initiatives. Understanding that many projects can increase social and environmental benefits, these costs and benefits also will be analyzed in the future for most projects. There are no mission-specific factors that prevent TVA from implementing sustainability projects.

TVA also has started developing a Return on Investment (ROI) tool to compare the overall economic, environmental, and social costs and benefits of a project. This tool provides an initial rating based on expected project performance. The following summarizes the rating system.

Rating Description

Green: GREEN indicates a project will provide a high ROI in this category.

Yellow: YELLOW indicates a project will provide an average ROI in this category.

Red: RED indicates a project will provide a minimal or negative ROI in this category.

In developing these ratings, TVA considers the following factors.

a. Economic Cost and Benefits

TVA considers discounted payback, profitability index, upfront investment needed, and ongoing annual costs. TVA has been quantifying economic ROI for seven decades. Capital projects and other major investments are considered on a 10- to 15-year energy savings return for major investments. Under a regulatory framework, TVA is also subject to the National Environmental Policy Act (NEPA) and other statutes. For sustainability projects, TVA is using the life-cycle analysis (LCA) approach to determine the cost-effectiveness of identified projects.

b. Social Costs and Benefits

TVA recognizes social benefits to be the following: employee morale and satisfaction; stakeholder interest or support; brand management; increase in jobs; promotion of a healthy workplace; community impact; and safety and reliability. TVA is evaluating approaches for quantifying and measuring these on a regular basis.

c. Environmental Costs and Benefits

TVA considers environmental benefits to include reduction to Scope 1, 2, and 3 GHG emissions, water usage and waste management. TVA also takes into consideration sustainable acquisition, recycling, and other environmental issues. Environmental costs and benefits have largely been driven by regulatory considerations (e.g., NEPA, Clean Air Act) over the years. TVA prioritizes the projects with the greatest benefits to the TVA Mission and Environmental Policy. Moving forward, consideration of environmental cost and benefits will continue to include the TVA Mission and Environmental Policy, regulatory requirements and goals in the E.O., and this sustainability plan.

d. Mission-Specific Costs and Benefits

This SSPP is consistent with the TVA Mission—to serve the Valley through Energy, Environment, and Economic Development. Sustainability projects that address Tennessee Valley economic development,

environmental, and social responsibility are well within the TVA mission. By integrating the E.O. 13514 responsibilities into the TVA personal scorecard, TVA can demonstrate both management commitment and personal engagement to sustainability.

e. Operations and Maintenance and Deferred Investments

The existing TVA Facilities Asset Preservation (FAP) Program addresses deferred maintenance needs across TVA. FAP sub-teams, each led by a member of the FAP team along with SBU representatives, gather asset information, identify deficiencies, recommend corrective action, implement planned and approved projects, and report status back to the FAP team. Due to the diversity and complexity of facilities, TVA divides the work into the following five focus areas:

1. Building Envelope - (roofs, walls, siding, insulation, doors, windows, caulking, foundations and footings, slabs, damp proofing, waterproofing and fireproofing)
2. Building Systems - (elevators; plumbing; life safety systems; heating, ventilation, and air conditioning [HVAC]; chillers; electrical distribution; lighting; emergency generators; water treatment and sewer)
3. Architectural Systems - (finishes and furnishings, specialty finishes, walls, floors, ceilings, partitions and aesthetic/image appearance)
4. Roads, Parking and Grounds - (roads, parking areas, grounds and landscaping, erosion control, sidewalks, trails, recreation areas and signs)
5. Coatings and Corrosion Control - (specialized protective coatings for plant and process equipment subjected to harsh environmental conditions, dam safety spillway gates, other hydro structures and water barriers)

The FAP Program goal is to have all important facility assets in good or better condition and included in a routine preventive maintenance program with minimum backlog. The FAP Program achieves this goal using an approach that focuses available resources first on facility assets with the greatest need for repair and importance to the TVA Mission. Additionally, this approach focuses resources first on maintenance items in Failed Condition, then on those in Poor Condition, and those in Fair Condition, with the potential of extending their economic life.

The approach relies on a prioritization method that draws on evaluated or gathered data. This data includes asset importance ratings, observed condition ratings, life-cycle expectations, actual age, environmental conditions, and health and safety and environmental regulations. Assets are sorted first by observed condition and then by importance. Other factors are considered when needed to refine the lists. Project lists are coordinated with SBUs, line management, TVA Power Planning staff, and the TVA Strategic Facilities Planning organization to gain concurrence and consensus. Finally, project approvals are made contingent on the availability of annual funding.

TVA calculated ROI for the overall FAP program as it was developed and approved. TVA does not calculate ROI on a year-to-year or individual project basis. Because of the large backlog of deferred maintenance, most repairs and replacements are on assets that are beyond their useful life and must be replaced to continue supporting the TVA Mission.

Through the FAP program, TVA continues to reduce its deferred maintenance backlog. The program was started in the early 2000s and has made excellent progress, especially in some areas such as coatings and roofing.

TVA has an active program to reduce building/facility footprint size. Financial imperatives drive this program, which also provides GHG reduction benefits. GHG requirements will have only a minor impact on facilities with large, deferred maintenance backlogs. Condition and mission-criticality drive maintenance schedules, with environmental and regulatory issues as secondary concerns. FAP budgets are only sufficient to handle failing or very poor condition assets so additional weighting factors have not been necessary.

f. Climate Change Risks

In November 2009, the Electric Power Research Institute (EPRI) published a report entitled “Potential Impacts of Climate Change on Natural Resources in the Tennessee Valley Authority Region”. TVA co-sponsored this report, with the objective of providing preliminary information on climate change impacts across the Tennessee Valley.

Based on the “Fourth Assessment Report of the Intergovernmental Panel on Climate Change” (the Intergovernmental Panel on Climate Change [IPCC] Report), published in 2007 and subject to substantial uncertainties, EPRI concluded that future precipitation will vary substantially across the Tennessee Valley, with increased precipitation during the winter and unchanged or lower precipitation over the summer. In addition, extreme weather events, such as droughts and floods, are also expected to become more frequent, although difficult to quantify. The IPCC Report also indicates threat temperatures will steadily increase across the Tennessee Valley.

TVA manages the Tennessee River System for multiple purposes, including power generation, water use, commercial navigation, recreation, and water quality and flood control. If realized, projected changes in precipitation and increasing temperatures will directly impact future TVA management of the water resources of the Tennessee Valley.

Power generation is dependent on having sufficient water flow available to produce hydroelectric power, as well as water temperature for cooling fossil and nuclear power plants. Generation of hydroelectric power will depend on the precipitation runoff within each reservoir drainage basin and the upstream flow into each reservoir. A rise in water temperatures would require withdrawing more water to achieve the same amount of cooling at fossil and nuclear power plants, or reducing power generation to match the available water supply.

Agricultural, municipal and industrial water uses are driven by temperature and extreme weather. Warmer temperatures and extreme weather (droughts) will increase water demand for crops, gardens, and landscaping. Industrial process cooling water needs will be impacted by water temperature in the same manner as power generation.

Commercial navigation relies on maintaining the minimum channel depth, as well as reasonable flow rates. Increasingly frequent extreme weather events (drought episodes and flooding) may create more challenges to maintaining the entire length of the commercial navigation channel.

Recreational uses of the Tennessee River and its tributaries include boating and fishing and are dependent on water levels related to precipitation runoff. Sport fishing may also be impacted by water temperature for certain species in certain areas.

Water quality impacts to aquatic life are dependent on the river system. Changes in water flow due to the increasing frequency of extreme weather events may impact the habitats and biodiversity of the Tennessee River system.

As changes in future precipitation and temperature develop, the current river management system employed by TVA (reservoir operating guides) may require periodic reevaluations to balance the competing water uses across the Tennessee Valley.

g. Other, as defined by agency

Agencies should consult OMB Circulars A-4, Regulatory Impact Analysis (RIA), and A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, when developing the methods and plans for Section IV.

V. Transparency and Open Government

TVA will communicate to internal and external stakeholders the objectives outlined in this SSPP; as well as, the measures that will be taken to meet those objectives. This communication will take place in a transparent, easy-to-understand format on the TVA website and in published annual reports. TVA also will communicate anticipated impacts of TVA actions on stakeholders and will include opportunities for stakeholders to participate in programs that improve sustainable performance.

Section 2: Performance Review and Annual Update

I. Goal Performance Review and Planning:

GOAL 1: Greenhouse Gas Reduction and Maintenance of Agency Comprehensive Greenhouse Gas Inventory

Goal Description-Scope 1 and 2

Scope 1 GHG emissions are from equipment or operations owned or controlled by TVA that directly emit GHGs. Pursuant to the provisions of E.O. 13514, direct emissions from the production of power and steam sold commercially to other parties in the course of regular business are excluded from the GHG reduction directives. Scope 2 GHG emissions are direct emissions resulting from the generation of electricity, heat, or steam purchased by TVA.

TVA will report Scope 1 GHG emissions in the baseline year, in FY 2010, and annually thereafter. Reportable Scope 1 and 2 emissions result from the following types of activities: stationary combustion and generation of electricity, heat or steam (including carbon dioxide (CO₂), methane (CH₄) and nitrous oxides (N₂O) emissions from biomass combusted for production of electricity, heat, cooling, or steam), and combustion of fuels in agency-controlled mobile sources and process operations.

TVA has set a Scope 1 and 2 GHG emissions reduction target of 17 percent by FY 2020, relative to the emissions in FY 2008. This emission reduction target is based on a 5% reduction target from FY 2010 through FY 2015 and a 4.7 percent reduction target from FY 2015 through FY 2020 for Excluded Buildings. In addition, this emission reduction target is based on a 30 percent reduction target from FY 2006 through FY 2015 and a 1 percent reduction target from FY 2015 through FY 2020 for Goal Subject Buildings.

Goal Description-Scope 3

Scope 3 GHG emissions are a result of TVA activities that originate from sources outside of TVA's organizational boundary. They include indirect emissions not accounted for in Scope 1 or 2 emissions, such as employee travel, waste disposal, and transmission and distribution (T&D) losses. TVA's overall reduction target for Scope 3 emissions is 20.7 percent by FY 2020, compared to a FY 2008 baseline.

E.O. 13514 and guidance from the Office of the Federal Environmental Executive (OFEE) and OMB have established three sub-targets for Scope 3 GHG reductions associated with employee travel, waste disposal, and transmission and distribution losses from purchased electricity. TVA will specify reduction targets to meet these three sub-targets as summarized in the Planning Table. TVA will strive to meet these sub-targets by FY 2020, compared to the FY 2008 baseline. A large component of Scope 3 GHG emissions are from contracted waste disposal activities. Therefore, a significant portion of the reduction targets for Scope 3 GHG is predicated on the successful completion of a pilot Municipal Solid Waste (MSW) reduction program, and the rollout and achievement of the 50 percent MSW reductions goal. Progress is expected to continue, subject to budget approval and constraints.

Agency Lead

Implementation of Scope 1, 2, and 3 GHG reductions will be accomplished by the following key groups and individuals:

- TVA Senior Sustainability Officer
- TVA Director, Environmental Policy and Regulatory Affairs
- TVA Vice-President of Energy Efficiency and Demand Response
- TVA Environmental and Energy Sustainability Committee
- TVA Climate Regulatory Policy Team (RPT)

Staff Resources

These groups and individuals will be supported by key areas of the TVA organization, including the TVA Internal Energy Management Program headed up by the TVA Vice-President of Energy Efficiency and Demand Response. The TVA Director, Environmental Policy and Regulatory Affairs will communicate the E.O. goals and legislative requirements and implementation progress toward Scope 1 and 2 GHG reductions through the TVA EESC and the TVA Climate RPT. The TVA Manager of Sustainable Design and the TVA GHG reporting staff will assist the TVA Director, Environmental Policy and Regulatory Affairs.

Table Color Codes:

Yellow: Agency enters

Green: Prepopulated with data from FY11 plan, if available

Blue: Prepopulated with data from FEMP, if available

Baseline

Description	Baseline Year	Baseline Value
Total scope 1&2 GHG emissions (comprehensive) MTCO ₂ e	2008	572590
Total scope 1&2 GHG emissions (subject to agency scope 1&2 GHG reduction target) MTCO ₂ e ⁶	2008	350790
Total scope 3 GHG emissions (comprehensive) MTCO ₂ e ⁶	2008	107853
Total scope 3 GHG emissions (subject to agency scope 3 GHG reduction target) MTCO ₂ e ⁶	2008	102366

Planning/Status Table

GHG Emissions	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Total scope 1&2 GHG emissions (comprehensive) (MTCO ₂ e) ACTUAL	569388	599169	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	N/A	N/A	Scope 1 GHG emissions are from equipment or operations owned or controlled by TVA that directly emit GHGs. Scope 2 GHG emissions are direct emissions resulting from the generation of electricity, heat, or steam purchased by TVA. The scope 1 and 2 GHG inventory was developed in accordance with the <i>Federal GHG Accounting and Reporting Guidance</i> .
Total scope 1&2 GHG emissions (subject to agency scope 1&2 GHG reduction target) (MTCO ₂ e) TARGET⁶	315000	316000	309000	303000	296000	289000		...	278000	N/A	N/A	N/A	Pursuant to the provisions of E.O. 13514, direct emissions from the production of power and steam sold commercially to other parties in the course of regular business are excluded from the GHG reduction directives.
Total scope 1&2 GHG emissions (subject to agency scope 1&2 GHG reduction target) (MTCO ₂ e) ACTUAL	314831	310317	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	[Met/Exceeded Target]	[Met/Exceeded Target]	Progress is expected to continue subject to budget approval and constraints.
Overall agency scope 1&2 GHG reduction (reduced from FY08 base year) (%) TARGET⁶	3.9	5.9	7.8	9.8	11.7	13.7		...	17	N/A	N/A	N/A	TVA's 17% reduction target for Scope 1 and 2 GHG emissions is currently based on reductions in building energy use and use of renewable energy. Pursuant to the provisions of E.O. 13514, direct emissions from the production of power and steam sold commercially to other parties in the course of regular business are excluded from the GHG reduction directives.

GHG Emissions	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Overall agency scope 1&2 GHG reduction (reduced from FY08 base year) (%) ACTUAL	10.3	11.5	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	[Met/Exceeded Target]	[Met/Exceeded Target]	Progress is expected to continue subject to budget approval and constraints.
Total scope 3 GHG emissions (comprehensive) (MTCO ₂ e) ACTUAL	109492	107172	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	N/A	N/A	The GHG inventory was developed in accordance with the <i>Federal GHG Accounting and Reporting Guidance</i> .
Total scope 3 GHG emissions (subject to agency scope 3 GHG reduction target) (MTCO ₂ e) TARGET⁶	105000	102000	99000	96000	92000	89000		...	82000	N/A	N/A	N/A	Pursuant to the provisions of E.O. 13514, direct emissions from the production of power and steam sold commercially to other parties in the course of regular business are excluded from the GHG reduction directives.
Total scope 3 GHG emissions (subject to agency scope 3 GHG reduction target) (MTCO ₂ e) ACTUAL	104775	102442	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	[Met/Exceeded Target]	[Met/Exceeded Target]	Progress is expected to continue subject to budget approval and constraints.
Overall agency scope 3 GHG progress (reduced from FY08 base year) (%) TARGET⁶	-0.031	-0.1	3.2	6.7	9.8	12.8		...	21	N/A	N/A	N/A	Current Scope 3 GHG calculation methodologies are heavily dependent on the number of employees.
Overall agency scope 3 GHG progress (reduced from FY08 base year) (%) ACTUAL	-2.4	-0.1	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	[Met/Exceeded Target]	[Met/Exceeded Target]	TVA has submitted a 21% Scope 3 GHG emissions reduction target which covers emissions from employee business and commuter travel, municipal solid waste disposal and waste water treatment and emissions related to transmission of power to TVA buildings. Progress is expected to continue subject to budget approval and constraints.

GHG Emissions	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Other, as defined by agency TARGET								...		N/A	N/A	N/A	
Other, as defined by agency ACTUAL			N/A	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	

Progress Questions

1. Use the table below to describe where agency Scope 1&2 GHG emissions reductions came from in FY11. For each category, choose the best answer to describe the relative significance in reducing the agency’s emissions. The options are Primary (~>40% of reduction), Secondary (~20-40% of reduction), Minor (~1-20% or reduction), and None/Insignificant (~0-1% of reduction).

For all primary and secondary categories, also indicate whether the agency had a category specific GHG reduction target, whether formal strategies were implemented related to achieving that target, and the results. If the emissions from a specific category increased perceptibly (as in more than 1% of the reduction target), choose “Increase”.

Emissions Reduction: Scope 1&2

Strategy Category	FY11 Contribution (Primary, Secondary, Minor, None/Insignificant, Increase, N/A)	GHG Category Target in Place (Y,N,N/A)	Formal Strategies Implemented Related to Target (Y, N, N/A)	Results (Met/Exceeded target, Did not meet target, Not tracked, Other, N/A)	Comments
Facility Energy Intensity	[Primary]	[Y]	[Y]	[Met/Exceeded Target]	TVA has consistently met building energy reduction goals and currently is using almost half the energy of the Federal average for goal-subject buildings. TVA has achieved at least an 18% reduction in energy intensity and is on track for 30% by 2015 in goal-subject facilities compared with 2003. Progress is expected to continue, subject to budget approval and constraints.
Renewable Energy	[Primary]	[Y]	[Y]	[Met/Exceeded Target]	TVA has already achieved its 7.5% by 2013 goal. Progress is expected to continue subject to budget approval and constraints.
Space Management	[N/A]	[N/A]	[N/A]	[N/A]	From 2001 to 2010, TVA implemented a Strategic Facilities Plan (SFP) that resulted in a reduction of more than 1 million square feet.
Fleet Petroleum Use	[N/A]	[N]	[N]	[Other]	TVA's vehicle fleet has been historically excluded from past requirements due to the nature of its make-up and use and its connection to the operation and maintenance of TVA power system. TVA will continue to strive to reduce petroleum use in fleet vehicles. Progress is expected to continue, subject to budget approval and constraints
Fleet Alternative Fuel Use	[N/A]	[N]	[N]	[Other]	TVA will continue to strive to increase use of alternative fuels in fleet Alternative Fueled Vehicles (AFVs). TVA is working with DOE to establish baseline date for applicable vehicles. Progress is expected to continue, subject to budget approval and constraints.

Strategy Category	FY11 Contribution (Primary, Secondary, Minor, None/Insignificant, Increase, N/A)	GHG Category Target in Place (Y,N,N/A)	Formal Strategies Implemented Related to Target (Y, N, N/A)	Results (Met/Exceeded target, Did not meet target, Not tracked, Other, N/A)	Comments
Optimizing Fleet Size	[N/A]	[N]	[Y]	[Other]	TVA will continue to strive to optimize use of vehicles and right-size its fleet. TVA is working with DOE to establish baseline date for applicable vehicles. Progress is expected to continue, subject to budget approval and constraints.
Fugitive Emissions	[Increase]	[N/A]	[N/A]	[N/A]	TVA has set a Scope 1 and 2 GHG emissions reduction target of 17 percent by FY 2020, relative to the emissions in FY 2008.
Landfills, Wastewater Treatment	[Increase]	[N/A]	[N/A]	[N/A]	TVA has set a Scope 1 and 2 GHG emissions reduction target of 17 percent by FY 2020, relative to the emissions in FY 2008.
Other (describe in comments)	[Primary]	[Y]	[Y]	[Met/Exceeded Target]	Contracted Waste Disposal (Solid Waste and Wastewater Treatment) The overall reduction target for Scope 3 emissions is 20.7 percent by FY 2020, compared to a FY 2008 baseline. A large component of the Scope 3 GHG emissions are from contracted waste disposal activities. This target encompasses contracted MSW (trash) and domestic wastewater (sewage) disposal. This target does not include industrial solid waste (e.g., fly ash), industrial wastewater and once-through cooling water generated in the course of the normal TVA business of generating electric power (energy).

Strategy Category	FY11 Contribution (Primary, Secondary, Minor, None/Insignificant, Increase, N/A)	GHG Category Target in Place (Y,N,N/A)	Formal Strategies Implemented Related to Target (Y, N, N/A)	Results (Met/Exceeded target, Did not meet target, Not tracked, Other, N/A)	Comments
Other (describe in comments)	[Increase]	[N/A]	[N/A]	[N/A]	Travel TVA continues to implement information technologies that enable employees to perform their jobs more efficiently while also saving energy and reducing GHG emissions. Since the TVA service area covers most of Tennessee and portions of six other states, employees are widely dispersed and often need to meet with others in different work locations. In recent years, technologies have been implemented that enable employees to travel less and conduct more meetings from their remote work sites, saving fuel and related travel expenses.

2.

For which of the following activities does the agency...	Federal employee commuting	Federal employee business air travel	Federal employee business ground travel	Contracted solid waste disposal	Contracted wastewater disposal	Other (describe in comments)	Comments
...have an identified and specific target for actions to satisfy scope 3 emissions reduction goals?	[No]	[No]	[No]	[Yes]	[No]	[N/A]	
...have identified and specific strategies for achieving scope 3 emissions reductions?	[Yes]	[No]	[Yes]	[Yes]	[Yes]	[N/A]	
...have identified and specific metrics to measure progress towards the scope 3 target?	[No]	[No]	[No]	[Yes]	[No]	[N/A]	
...show measured progress towards scope 3 emissions reductions?	[Yes]	[Yes]	[Yes]	[Yes]	[Yes]	[Yes]	

Challenges/Justification

ID	Title	Description	First Related Goal (if applicable)	Second Related Goal (if applicable)	Third Related Goal (if applicable)
1	Scope 1 and 2: Buildings: Facility Energy Intensity	Budget constraints	[Goal 1]	[NA]	[NA]
2	Scope 1: Fleet: Hybrid Vehicle Cost	Budget constraints: Acquiring hybrid electric vehicles through GSA at an affordable cost	[Goal 3]	[Goal 1]	[NA]
3	Scope 1: Fleet: Supporting Infrastructure for E-85 and Plug-In Vehicles	The lack of commercial facilities for the refueling of Ethanol (E-85) and fast charging stations for Plug-In Electric Vehicles (PEVs)	[Goal 3]	[Goal 1]	[NA]
4	Scope 1: Fleet: Limited range of PEVs	Limited range of PEVs	[Goal 3]	[Goal 1]	[NA]
5	Scope 3: MSW Reduction	A large component of TVA's Scope 3 emission reductions is predicated on the successful completion of a pilot MSW reduction program, and the rollout and achievement of the 50 percent MSW reductions goal. Progress is expected to continue, subject to budget approval and constraints.	[Goal 1]	[NA]	[NA]
6	Scope 3: Federal Employee Travel (Ground Travel)	TVA's light duty vehicles are spread across a seven-state service area and are often required to travel in rural areas outside the major metropolitan areas where alternative fuels are not readily available.	[Goal 1]	[Goal 3]	[NA]
7	Scope 3: Federal Employee Travel (Commuter)	TVA's employees are spread across a seven-state service area; mass transit is not readily available. Initiatives must focus on van/carpools and Telework. GHG inventory improvements can improve TVA's measurement capability regarding such initiative performance.	[Goal 1]	[NA]	[NA]
8	GHG Inventory: Improve Accounting Capability	Various initiatives will be taken in FY2013 to continuously improve TVA's GHG accounting capability. These initiatives will include improvements to data quality, activities to improve inventory comprehensiveness and integrate GHG accounting systems with existing environmental management systems. Progress is expected to continue subject, to budget approval and constraints.	[Goal 1]	[NA]	[NA]
9	Climate Change Adaptation Action Plan	One of the five ecoregions (Mississippi Alluvial Plain) may be problematic for establishing a sentinel monitoring site. Progress is expected to continue, subject to budget approval and constraints.	[Adaptation]	[NA]	[NA]

Best Practices/Highlights

ID	Title	Description
1	Scopes 1 and 2-Buildings: Facility Energy Intensity	TVA has consistently met building energy reduction goals and currently is using almost half the energy of the Federal average for goal-subject buildings.
2	Scope 3-Federal Employee Travel (ground): Increase Use of Video and Audio Conferencing	In FY 2011, TVA began a four-year process to upgrade its video and audio conferencing capabilities and increase employee awareness of such capabilities in order to reduce employee business travel, as appropriate in order to meet the GHG targets. Progress is expected to continue subject to budget approval and constraints.
3	Scope 3-Federal Employee Travel (Commuter): Increase use of car/van pools	The TVA van pool program is operated by Fleet Management in the Supply Chain organization and is self-supporting. Since 2001, employees and contractors have been reimbursed for up to \$65 monthly for participation. This reimbursement is a TVA benefit and is charged to the participant's organization. TVA plans to evaluate the car/van pool program and identify methods to increase employee participation during FY 2012, including incentives related to levels of participation.
4	GHG Inventory: EPA GHG Mandatory Reporting Rule	TVA's electrical power production system emissions were reported to EPA beginning in 2011 per the requirements of the EPA GHG Mandatory Reporting Rule (GHG MRR) (40 CFR Part 98) and will be reported annually thereafter.

Planning

Strategies

ID	Description	Strategy Type	Time Frame	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
Scope 1 and 2-GHG Reduction	TVA incorporates sustainable practices into mission and emission reduction projects.	[Infrastructure e/ Settings Change]	[Ongoing]	[Facility Level]	GHG Reduction Target of 7.8%	GHG Reduction Target of 9.8%	[Goal 1]	[N/A]	TVA is currently ahead in meeting its Scope 1 and 2 reduction target and plans to continue implementing projects. Progress is expected to continue, subject to budget approval and constraints.
Scope 3-GHG Reductions	TVA incorporates sustainable practices into mission and emission reduction projects. Scope 3 includes: <ul style="list-style-type: none"> • employee business air travel, • contracted disposal of waste generated in operations (solid waste and wastewater treatment), • transmission and distribution losses, • employee business ground travel, and • employee commuter travel. 	[Infrastructure e/ Settings Change]	[Ongoing]	[Facility Level]	GHG Reduction Target of 3.1%	GHG Reduction Target of 6.7%	[Goal 1]	[N/A]	Employee travel emissions are related to future employment levels at TVA, participation in car/van pools, telecommuting programs, and national fuel economy standards (Corporate Average Fuel Economy [CAFE] standards) for passenger cars and light-duty trucks. Progress is expected to continue, subject to budget approval and constraints.

ID	Description	Strategy Type	Time Frame	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
GHG Inventory	Various initiatives will be taken in FY2013 to continuously improve TVA's GHG accounting capability. These initiatives will include improvements to data quality, activities to improve inventory comprehensiveness, and integrate GHG accounting systems with existing environmental management systems.	[Infrastructure/Settings Change]	[Ongoing]	[Regional]	Review GSA Tool. Review/Improve Scope 3 Accounting Methodologies.	Maintain and Improve Efficiency and Accuracy of Inventory Data Collection. Continue to improve Scope 3 Accounting Methodologies.	[Goal 1]	[N/A]	Progress is expected to continue subject to budget approval and constraints.
Climate Adaptation-TVA NRP Climate Sentinel Monitoring	NRP Climate Sentinel Monitoring in the five predominant ecoregions with 10 sites a year. One of the five ecoregions (Mississippi Alluvial Plain) may be problematic for establishing a sentinel monitoring site.	[Plan]	[Ongoing]	[Regional]	[Planning during FY2012];	[Monitoring begins in FY2013]	[N/A]	[N/A]	This program is listed in TVA's NRP and focuses on collecting biological, chemical, and physical data in each of the five predominant ecoregions in the Tennessee Valley. Additional detail is provided in TVA's Climate Change Adaptation Action Plan. Progress is expected to continue, subject to budget approval and constraints.

ID	Description	Strategy Type	Time Frame	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
Climate Adaptation-Strategic Partnership Planning	Develop shared understanding of potential climate change effects on the Tennessee River watershed and identify opportunities to improve and/or maintain water quantity and water quality.	[Plan]	[Ongoing]	[Regional]	[Program Planning during FY2012]	[Program begins in 2013]	[N/A]	[N/A]	This program is listed in TVA's NRP and focuses on building strong partnerships with state and other federal agencies, and with regional nongovernmental organizations, to address stewardship issues of mutual importance and drive measurable improvement of health of the region's waters. Additional detail is provided in TVA's Climate Change Adaptation Action Plan. Progress is expected to continue, subject to budget approval and constraints.
Climate Adaptation-Water Resource Outreach Campaign	Develop better understanding of potential climate change effects on the Tennessee River watershed and identify opportunities to increase public awareness of the issue.	[Plan]	[Ongoing]	[Regional]	[Program Planning during FY2012]	[Program begins in 2013]	[N/A]	[N/A]	This program is listed in TVA's NRP which focuses on increasing public awareness and involvement through the promotion of water resource protection and improvement best practice. Additional detail is provided in TVA's Climate Change Adaptation Action Plan. Progress is expected to continue subject to budget approval and constraints.
Climate Adaptation-Water Availability and Resource Risk Management, EPRI Program 55:	This research program includes the development of Decision Support tools, national assessments and projections of water use and consumption, as well as water benchmarking and reporting. Project is in the testing phase.	[Review/Analysis]	[Ongoing]	[Regional]	[Decision Support Tools]	[Decision Support Tools]	[N/A]	[N/A]	Additional detail is provided in TVA's Climate Change Adaptation Action Plan. Progress is expected to continue subject to budget approval and constraints.

ID	Description	Strategy Type	Time Frame	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
EPRI Ecosystem Services	EPRI will be coordinating research efforts, along with TVA, to evaluate ecosystem services models on land management programs and their general use in the electric utility industry (environmental reporting, risk management, sustainability, and potential to climate change mitigation). Project is in the testing phase.	[Review/Analysis]	[Ongoing]	[Regional]	[High-Level Process Map]	[N/A]	[N/A]	[N/A]	Additional detail is provided in TVA's Climate Change Adaptation Action Plan. Progress is expected to continue, subject to budget approval and constraints.
Climate Adaptation-Internal Climate Change Adaptation Oversight Process	This action focuses on the identification of an internal process to ensure TVA has the needed capacity and organizational structures in order to effectively assess agency-specific climate change risks and opportunities and implement appropriate adaptation actions.	[Plan]	[Ongoing]	[Regional]	[High-Level Process Map]	[N/A]	N/A	[N/A]	Additional detail is provided in TVA's Climate Change Adaptation Action Plan. Progress is expected to continue, subject to budget approval and constraints.

ID	Description	Strategy Type	Time Frame	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
Climate Adaptation-External Coordination Efforts	This action focuses on the identification of an internal process to coordinate its adaptation planning with related efforts among state, local, tribal, and territorial partners. TVA will also coordinate climate change science and adaptation planning at regional levels. These efforts include TVA participation in the Appalachian Land Conservation Cooperative (LCC) and the Southeast Climate Science Center (CSC).	[Plan]	[Ongoing]	[Regional]	[High-Level Process Map; external adaptation project coordination table]	[N/A]	[N/A]	[N/A]	Additional detail is provided in TVA's Climate Change Adaptation Action Plan. Progress is expected to continue, subject to budget approval and constraints.

GOAL 2: Buildings, ESPC Initiative Schedule, and Regional and Local Planning

Goal Description

High Performance Sustainable Design

The goal to incorporate sustainability into new buildings has been in existence since the passage of the Energy Policy Act of 2005 (EPAct05) which required agencies to apply sustainable design principles into the siting and design of all new buildings, including water efficiency. When E.O. 13514 was published in October 2009, it added additional directives to show progress towards 100% application of the Sustainable Guiding Principles (SGPs) and limited their application to those buildings and leases that were greater than 5,000 gross square feet in size. The E.O. also guided agencies to only build zero-net-energy buildings by 2030, planning for such buildings in 2020. TVA will continue to review all new building designs and major renovations for incorporation of the SGPs and work toward retrofitting the SGPs into 15% of its greater than 5,000 square feet buildings by FY 2015.

Regional and Local Planning

The E.O. 13514 directs agencies to incorporate regional and local integrated planning into existing policy and guidance. TVA is already conducting many activities that specifically address several goal-specific items. Activities to address the goal-specific items have been identified within this plan and are described in detail. They can be integrated into the TVA existing operations as appropriate to streamline the overall goal implementation.

Agency Lead

Implementation of high performance sustainable design and regional and local planning will be accomplished by the following key groups and individuals:

High Performance Sustainable Design

- TVA Senior Sustainability Officer
- TVA Director, Environmental Policy and Regulatory Affairs
- TVA Vice-President of Energy Efficiency and Demand Response
- TVA Environmental and Energy Sustainability Committee
- TVA Chief Energy Manager
- TVA Manager of Sustainable Design
- TVA Property Acquisition, Management, and Leasing

Regional and Local Planning

- TVA Senior Sustainability Officer
- TVA Director, Environmental Policy and Regulatory Affairs
- TVA Property and Natural Resources
- TVA Federal Determinations
- TVA Environmental Policy, Clean and Renewable Energy; Customer Relations
- TVA Energy Efficiency and Demand Response

Staff Resources

High Performance Sustainable Design

TVA currently has one full-time equivalent (FTE), spending approximately 50 percent of their time dedicated to consulting on new sustainable design and managing the retrofit of the SGPs in existing buildings. In addition, Facilities Management is assisting with the retrofit work by providing a minimum of one FTE towards construction management for those buildings being retrofitted with the SGPs.

Regional and Local Planning

To fully support the implementation of Goal 2, the current leveraged resources and an additional 0.4 positions are needed to expand existing review of transportation plans prepared by municipal or rural planning organizations in TVA-served states other than Tennessee and North Carolina.

<i>Table Color Codes:</i>	
Yellow:	Agency enters
Green:	Prepopulated with data from FY11 plan, if available
Blue:	Prepopulated with data from FEMP, if available
Purple:	Prepopulated with data from FRPP, if available

Baseline

Description	Baseline Year	Baseline Value
Energy intensity (Btu/GSF)	2003	65536

Planning/Status Table

Buildings	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Energy intensity reduction (% reduced from FY03 base year) TARGET	15	18	21	24	27	30		...		N/A	N/A	N/A	
Energy intensity reduction (% reduced from FY03 base year) PLAN	15	18	21	24	27	30		...		N/A	N/A	N/A	
Energy intensity reduction (% reduced from FY03 base year) ACTUAL	15.1	18.3	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	On track	
Renewable electricity (% of electricity from renewable sources) TARGET	5	5	5	7.5	7.5	7.5	7.5	...	7.5	N/A	N/A	N/A	
Renewable electricity (% of electricity from renewable sources) PLAN	7.8	8.2	9.6	10.2	10.2	10.2		...	10.2	N/A	N/A	N/A	
Renewable electricity (% of electricity from renewable sources) ACTUAL	7.8	8.4	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	On track	
% of renewable energy that is "new."	46.3	90.0	N/A	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	

Buildings	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Owned buildings meeting Guiding Principles (%) TARGET	0	0	5	10	13	15		...	21	N/A	N/A	N/A	
Owned buildings meeting Guiding Principles ⁸ (%) ACTUAL		0.00	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	No	Not on track	
FRPP-reported leased buildings meeting Guiding Principles ⁸ (%) TARGET	0	0	0	0	0	0		...	0	N/A	N/A	N/A	
FRPP-reported leased buildings meeting Guiding Principles ⁸ (%) ACTUAL		0.00	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	No	Not on track	
Total buildings meeting Guiding Principles ⁸ (%) TARGET	0	0	5	10	13	15		...	15	N/A	N/A	N/A	
Total buildings meeting Guiding Principles ⁸ (%) ACTUAL	0	0.00	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	No	Not on track	
% of EISA-covered facilities that have an energy manager		100.0	N/A	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	
% of EISA-covered facilities evaluated through June		N/A	100	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	
% of appropriate buildings metered for electricity	86	95.5	N/A	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	
% of metered buildings that are (or are part of) EISA-covered facilities that have been benchmarked through June		N/A	57	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	TVA successfully benchmarked its metered buildings where possible. TVA's covered facility list includes 54 buildings, of which 14 of the buildings are metered. Of the 14 buildings only 8 buildings were benchmarked due to 2 buildings having incomplete smart meter data and 4 buildings not having correct space types

Buildings	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
													available to properly benchmark the buildings. The remaining 40 buildings that are not metered are located at plant sites where it is not possible to separate the energy used to generate, transmit and control electricity from the building energy usage.
Other, as defined by agency TARGET								...		N/A	N/A	N/A	
Other, as defined by agency ACTUAL			N/A	N/A	N/A	N/A	N/A	...	N/A	[Please Choose]	[Please Choose]	[Please Choose]	

Progress Questions:

Sustainable Federal Locations

The E.O. and the Implementing Instructions – Sustainable Locations for Federal Facilities direct agencies to consider the impacts of their siting decisions not only on agency operations and employees, but also on the communities that host those facilities.

1. Agencies should link to or attach the agency memo or policy document that integrates the Principles for Sustainable Federal Location Decisions into the agency’s site selection and lease procurement procedures. If the agency has not yet prepared the necessary documents, indicate the status of the effort in the text box provided.

TVA’s Sustainable Buildings Plan is outlined in two TVA Processes: SPP-05.20 – Internal Environmental and Energy Sustainability Process, and SPP-05.21 – Resource Efficient Building Design Process. These processes have not been updated to include the Principles for Sustainable Federal Location Decisions into agency’s site selection and lease procurement. TVA will make this addition before the next SSPP reporting period.

2. Agencies should link to or attach the agency procedures document that integrates the Principles into the agency’s processes for defining facility requirements and formulation of related funding requests. If the agency has not yet prepared the necessary documents, indicate the status of the effort in the text box provided.

TVA’s funding for projects required to meet legislative and E.O. directives can be found in the attached Energy and Environmental Sustainability Committee (EESC) Charter and Sustainability Steering Committee (SSC) Charter. The EESC votes on and approves projects needed to meet requirements and sends these projects to the SSC for funding approval.

3. In i, ii, and iii below, list recent and planned significant agency facility (or facilities areas, which are defined as multiple facilities in adjacent proximity) changes such as moves, expansions, consolidations, etc. For the purposes of this report, significant changes are changes that affect more than 500 employees. Where facility changes impact less than 500 employees but are otherwise deemed significant by the agency, those agencies are encouraged to provide the information on those projects.

TVA has not made any facility changes impacting 500+ employees during this past year. TVA does not plan, at this time, on making any facility changes impacting 500+ employees in the coming year.

- i. *Agency Experience (Sept 2011-June 2012)* Identify in the table below significant agency facility changes that occurred at a minimum of 6 months prior to June 2012 (December 2011 to June 2012) (significant changes are changes that affect more than 500 employees). Agencies may also include changes prior to December 2011. If the Principles for Sustainable Federal Location Decisions were applied to the location decision, discuss the successes, challenges, and impacts on workplace requirements and location decisions and how any issues were resolved.

ID	Facility Name ¹⁵	Facility Location (Zip Code) ¹⁵	Facility Function (HQ, customer service, etc.)	Facility Size (sq ft. and # employees)	Change Type	Date of Change [MM/YY]	Successes, Challenges, and Impacts to Workplace Requirements
	N/A				[menu]		

- ii. *Near-term Planning (FY12-FY13)* List all significant facility or facilities areas changes (not previously listed) that are planned or anticipated to be implemented in the remainder of the current fiscal year and following fiscal year.

ID	Facility Name	Facility Location ¹⁴ (Zip Code) ¹⁵	Facility Function (HQ, customer service, etc.)	Facility Size (sq ft and # employees)	Change Type	Date Planned [MM/YY]
	N/A				[menu]	

- iii. *Medium-term Planning (FY14-FY16)* Identify significant agency facility or facilities areas changes that are anticipated to occur in the next 2-4 years.

ID	Facility Name ¹⁵	Facility Location ¹⁴ (Zip Code) ¹⁵	Change Type	Year Planned
	N/A		[menu]	

Challenges/Justification

ID	Title	Description	First Related Goal (if applicable)	Second Related Goal (if applicable)	Third Related Goal (if applicable)
1	Metering at nuclear plant sites.	Six of the remaining smart meters TVA has plans to install are on buildings located at TVA nuclear plant sites. Trying to obtain outages to install these has been difficult since an outage impacts nuclear plant operations.	1	N/A	N/A
2	Assess and demonstrate that at least 15% of the agency's existing government-owned buildings, agency direct-leased buildings, delegated authority leased buildings, and FRPP-reported leased buildings meet Guiding Principles by FY15 [5,000 GSF threshold for existing buildings and building leases.	TVA has continued to apply the Sustainable Guiding Principles to its two largest office buildings; the Knoxville Office Complex (KOC) and the Chattanooga Office Complex (COC). Together these two buildings represent 21% of TVA goal subject buildings (as defined by EPCAct05) using square footage accounting. To date, 46% of the Sustainable Guiding Principle requirements have been completed in the KOC and 61% have been completed in the COC. If TVA could receive partial credit for this work the agency would be at 8.1% towards the 15% by FY 2015 requirement, taking into account that these two buildings represent 21% of total building square footage subject to this E.O. requirement, but to date there has been no avenue to obtain partial credit through FRPP reporting. TVA has been talking to the Department of Defense (DOD) to work on a joint proposal to recommend changes to reporting rules. TVA has also turned its attention to retrofitting a greater number of smaller buildings.	1	3	N/A

Best Practices/Highlights

ID	Title	Description
1	Reduce facility energy intensity	TVA continues to reduce energy use in its facilities through the coordination of energy management efforts, implementation of energy efficiency improvements and use of onsite renewable energy. TVA ended FY 2011 with a Btu/GSF/Yr of 53,529 (including the use of renewable energy generated and used on site); this is an 18.3 percent reduction from the FY 2003 base, down to 53,529 Btus/sf/yr is almost half the Federal average for all goal subject buildings.
2	EISA Section 432 requirements to evaluate (audit and commission) designated facilities; assign energy managers, benchmark, and implement projects.	TVA continues to evaluate facilities to identify potential ECMs as required by EPAct05 and EISA 2007. During FY 2011, TVA surveyed 9 covered facilities accounting for 4,434,600 square feet. In FY 2011, TVA implemented \$7.9M worth of energy improvements resulting in \$585,900 in annual savings and 10,260 MWh in energy consumption savings at both covered and non-covered facilities.
3	Optimize performance of the agency’s real property portfolio – dispose and consolidate excess and underutilized property.	<p>In 2001, TVA developed and implemented the TVA SFP as a result of an increased portfolio of vacant space. The plan was presented and approved by the TVA Board of Directors in 2001 and received an achievement award in the “Asset Management” category for “Real Property Innovation” in 2003 from the General Services Administration. Results of the plan include a reduction from 3.5 million square feet to the current level of 2.5 million square feet, removal of approximately 100 buildings from the TVA corporate portfolio, a cumulative savings of over \$64M over 10 years, and a greater alignment with the TVA business plan and corporate strategic plan. An on-going integral component of the SFP is to determine “core” versus “non-core” buildings in order to eliminate non-essential spending on buildings that are no longer necessary for TVA to achieve its mission or demand an exceptional investment in order to remain operational. If a building is determined to be core, operational and capital dollars are allotted for maintenance and improvements. In addition, a core building is considered for the FAP Program, which allocates dollars for capital improvements to building envelopes and systems for core properties.</p> <p>If determined to be “non -core” the property is further evaluated for demolition, disposal or “mothballing.”</p>

Planning

ESPC Implementation Schedule

Agencies should use the Performance Contracting Tracking Schedule Template sent out by FEMP and shown below. Each of these tables can be copied from Excel into MAX.

Performance Contracting Commitment Table

Total Agency Commitment:	\$17 million
Total Estimated Project Value	\$17 million

ESPC Implementation Schedule Tables

Planning Phase (complete prior to March 30, 2012)			
Action	Due Date	Complete	Lead
		(Yes/No)	(Name)
Identify sites and project investment	1/31/12	Yes	IEMP-Internal Energy Management Program
Engage FEMP Financing Specialist	1/31/12	Yes	IEMP-Internal Energy Management Program
Identify team and educate on roles	1/31/12	Yes	IEMP-Internal Energy Management Program
Identify internal approvals or issues	1/31/12	Yes	IEMP-Internal Energy Management Program
Develop full implementation schedule	1/31/12	Yes	IEMP-Internal Energy Management Program

Project Implementation Phase Table Part 1:

Project Implementation Phase Part 1															
										Agency Develops Acquisition Plan/Notice of Opportunity(NOO)		Agency Releases NOO		Agency Selects ESCO	
ID #	Facility Name	Project Champion	Agency Designated Covered Facility ID [Compliance Tracking System (CTS) Submittal]	Agency Designated Project ID (for CTS Submittal)	Facility Zip Code	Estimated Project Value	Contract Vehicle	Due Date	Actual	Due Date	Actual	Due Date	Actual		
1	TVA-PSO Funded Projects-FY12	TVA IEMP	NA - Covers multiple facilities that include covered and non-covered facilities.	NA - Covers multiple facilities that include covered and non-covered facilities.	37402	3,845,000	Other	3/30/12	1/31/12	2/1/12	1/31/12	3/1/12	1/31/12		
2	TVA-EEDR Funded Projects	TVA IEMP	NA - Covers multiple facilities that include covered and non-covered facilities.	NA - Covers multiple facilities that include covered and non-covered facilities.	37402	5,375,500	Other	3/30/12	1/31/12	2/1/12	1/31/12	3/1/12	1/31/12		

Contract Vehicle Options: DOE, Army Corps of Engineers (ACOE), Utility Energy Service Contracts (UESC), Other

Project Implementation Phase Table Part 2:

Project Implementation Phase Part 2																
ESCO Develops PA			Agency Reviews PA		Agency Releases Notice of Intent to Award (NOITA)		ESCO Conducts and Submits Intergovernmental Agreement (IGA)		Agency Reviews IGA and Submits Comments to Energy Services Company (ESCO)		ESCO Submits Final Proposal		Agency Reviews Final Proposal		Negotiation/Award	
ID #	Due Date	Actual	Due Date	Actual	Due Date	Actual	Due Date	Actual	Due Date	Actual	Due Date	Actual	Due Date	Actual	Due Date	Actual
1	3/31/12	1/31/12	2/15/12	1/31/12	2/15/12	1/31/12	4/30/12	1/31/12	3/1/12	1/31/12	3/1/12	1/31/12	3/1/12	1/31/12	3/1/12	1/31/12
2	3/31/12	1/31/12	2/15/12	1/31/12	2/15/12	1/31/12	4/30/12	1/31/12	3/1/12	1/31/12	3/1/12	1/31/12	3/1/12	1/31/12	3/1/12	1/31/12

Energy Savings Performance Contract (ESPC) plan Comments: Use this area for any narrative information that is needed to explain the plan detailed in the tables above. TVA, as a provider of utility based ESPCs, will continue to finance its own upgrades. Over the next 24-month period TVA plans on investing \$17M in energy, water and sustainable projects through its own implementation process identified in the “ESPC Plan” dated 01-31-12. Note that budgeted dollars are planned but are subject to management approval.

Siting

For each change listed in the near-term planning table describe the principles that the agency plans to apply and then explain for each change how it will be applied, the challenges to doing so, and ways to address those challenges. Finally, discuss the impacts to employee commuting (Scope 3). Address each change in a separate paragraph with the facility ID as the title.

TVA constructs very few new buildings. The majority of the new buildings that are built are to support operations at its power plant sites, removing from consideration siting decisions based on regional/local planning, existing public transportation, home locations of employees, etc. However, such buildings are being designed to incorporate the Sustainable Guiding Principles. Even the simplest unheated metal warehouses are incorporating those sustainable technologies that are practical and cost effective, including daylighting, efficient lighting and even passive solar heating.

Strategies

ID	Description	Strategy Type	Timeframe	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
1	Reduce facility energy intensity.	Infrastructure/Settings change	Ongoing	Regional	N/A	N/A	1	N/A	The majority of TVA's covered facilities are its excluded buildings. TVA plans to not only keep up with Covered Facilities surveys but expand energy survey work and upgrades on its goal-subject buildings which need to meet the 3%/yr energy reduction goal.
2	Reduce per capita energy consumption through space management policies.	Infrastructure/Settings change	Ongoing	Regional	N/A	N/A	1	N/A	From 2001 to 2010, TVA implemented a Strategic Facilities Plan (SFP) that resulted in a reduction of more than 1 million square feet. This effort is still ongoing, particularly with the Muscle Shoals Reservation consisting of approximately 1 million square feet.
3	EISA Section 432 requirements to evaluate (audit and commission) designated facilities.	Infrastructure/Settings change	Ongoing	Regional	Complete EISA evaluations on remaining facilities to meet 100% goal.	N/A	1	4	

ID	Description	Strategy Type	Timeframe	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
4	Assess and demonstrate that at least 15% of the agency's existing government-owned buildings, agency direct-leased buildings, delegated authority leased buildings, and FRPP-reported leased buildings meet Guiding Principles by FY15 [5,000 GSF threshold for existing buildings and building leases.	Infrastructure/Settings change	Ongoing	Facility	Total of 10 buildings retrofitted with SGPs	Total of 20 buildings retrofitted with SGPs	1	4	TVA has completed SGPs evaluations on 36 smaller buildings and started design work on 13 of them.
5	Annual progress toward 100% conformance with Guiding Principles for entire building inventory by 2015 and thereafter.	Plan	Ongoing	Regional	N/A	N/A	1	4	TVA does not build very many new buildings but has started preliminary design on some, where TVA is working with the A/E firms to incorporate the SGPs and work towards the most efficient design.
6	Demonstrate use of cost-effective and innovative building strategies to minimize energy, water, and materials consumption.	Plan	Ongoing	Regional	N/A	N/A	1	4	
7	Offset new space or property acquisitions with corresponding disposals or lease terminations to restrict net growth in the agency's real estate inventory.	Review/Analysis	Ongoing	Regional	N/A	N/A	1	4	Will comply as deemed suitable for TVA's business operations
8	Utilize technologies to increase telework/hoteling opportunities (over the internet or	Infrastructure/Settings change	Ongoing	Regional	N/A	N/A	1	3	TVA, like most agencies and businesses, has become highly dependent upon electronic communications and the use of the internet. Most business is conducted via email, teleconference and face-to-face meetings. Most

ID	Description	Strategy Type	Timeframe	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
	electronically)								face-to-face meetings provide for teleconferencing options to minimize travel. TVA has had a system in effect for many years to electronically schedule teleconference meetings and remotely share computer desktops with remotely located participants. TVA also has audiovisual teleconference rooms at all of its major locations so that remote face-to-face meetings can be held. TVA has also been making use of live streaming of important meetings that impact all TVA employees, such as the TVA board meetings and CEO employee update meetings. Many TVA employees have opted for laptops in place of desktop computers so that they can work offsite as needed. TVA now has a telework process in place - TVA-SPP-11.9.2 that covers all employees and provides guidelines on implementation.
9	Conserve, rehabilitate, and reuse historic Federal properties.	Review/Analysis	FY12-FY13	Regional	N/A	N/A	1	4	TVA is developing a database of historic properties that should be completed by mid FY13 at the latest. Staffing a preservation planner, historic architect, or architectural historian at 1 to 1.5 FTEs would likely be helpful in meeting the requirements that TVA has from the National Historic Preservation Act (NHPA) (specifically, Section 110) – or at least offer more of an opportunity for awareness during planning.
10	Regional & Local Planning - Integrate the Principles for Sustainable Federal Location Decision into agency site selection and lease procurement procedures.	Plan	FY12-FY13	Regional	N/A	N/A	1	4	As applicable to Facilities' managed properties.
11	Regional & Local Planning - Update agency policy and guidance to ensure that all EISs and	Review/Analysis	Ongoing	Regional	N/A	N/A	1	4	TVA's policies and guidance are in alignment with the regional and local planning goals in E.O. 13514. Additionally under NEPA, TVA coordinates and/or consults with Federal, state and local agencies and tribes for actions that potentially

ID	Description	Strategy Type	Timeframe	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
	Environmental Assessments (EAs) required under NEPA for proposed new or expanded Federal facilities identify and analyze impacts associated with energy (including alternative energy sources) and climate change.								affect their trust resources. Agencies frequently involved in these efforts include State Historic Preservation Officers, U.S. Fish and Wildlife Service, state environmental regulators, local development districts, and Native American tribes.
12	Regional & Local Planning - Agency participation in critical local and regional efforts and initiatives.	Other	Ongoing	Regional	N/A	N/A	N/A	N/A	The Tennessee Healthy Watershed Initiative (THWI) is a collaboration of federal, state and nonprofit organizations committed to maintain and improve water resources in Tennessee watersheds. THWI provides a forum for communication, collaboration and thoughtful planning among a broad partnership of agencies and interests and is coordinating implementation of protection and improvement efforts for Tennessee's waters. TVA's active engagement in the THWI also serves as a pilot to determine potential as a platform for the Aquatic Ecology Management Program in TVA's NRP. Also, TVA's Climate Change Sentinel Monitoring is an NRP program whose focus is on understanding the potential climate change effects on Tennessee Valley streams and their unique biodiversity. Coordination across Federal, state, tribal, or other partners are appropriate and critical to advance this action. Planning is occurring during FY12 and monitoring will begin in FY13 in the five predominant ecoregions, with 10 sites a year.

GOAL 3: Fleet Management

Goal Description

E.O. 13514 requires a 2 percent per year reduction in fleet petroleum use through FY 2020, for an overall reduction of 30 percent. E.O. 13514 directs Federal agencies to purchase low GHG emitting vehicles, including alternative fuel vehicles. TVA Fleet Manager will develop a coordinated plan to decrease the light-duty fleet size by FY 2015.

Agency Lead

Implementation of fleet management goals will be accomplished by the following key groups and individuals:

- TVA Senior Sustainability Officer
- TVA Director, Environmental Policy and Regulatory Affairs
- TVA Environmental and Energy Sustainability Committee
- TVA Vice-President, Supply Chain
- Supply Chain Sustainability, Senior Program Manager
- Manager, Fleet Services

Staff Resources

TVA's agency-wide fleet management program presently has one FTE assigned to manage motor vehicle activities; however, sustainability requirements are performed as collateral duty.

Table Color Codes:

Yellow: Agency enters

Green: Prepopulated with data from FY11 plan, if available

Blue: Prepopulated with data from FEMP, if available

Pink: Prepopulated with data from FAST, if available

Orange: Prepopulated from agency websites

Baseline

Description	Baseline Year	Baseline Value
Petroleum use Gasoline Gallon Equivalent (GGE)	2005	1,177,189
Alternative fuel use (GGE)	2005	130

Planning/Status Table

Fleet Management	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Petroleum use reduction (% reduction from FY05 base year) TARGET	10	12	14	16	18	20	22	...	30	N/A	N/A	N/A	
Petroleum use reduction (% reduction from FY05 base year) PLAN	0	N/A	5	16	18	20	22	...		N/A	N/A	N/A	
Petroleum use reduction (% reduction from FY05 base year) ACTUAL	N/A	-26.1	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	No	Not on Track	TVA and GSA are beginning data adjustments in FAST to establish an official FY 2005 TVA baseline
Alternative fuel use in fleet (% increase from FY05 base year) TARGET	61	77	95	114	136	159		...		N/A	N/A	N/A	
Alternative fuel use in fleet (% increase from FY05 base year) PLAN	0	N/A	95	114	136	159		...		N/A	N/A	N/A	
Alternative fuel use in fleet (% increase from FY05 base year) ACTUAL	N/A	275	96	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	On track	
Total conventional fuel vehicles (#) TARGET	N/A	N/A	1896	1704	1515	1266		...		N/A	N/A	N/A	TVA and GSA are beginning data adjustments in FAST to establish an official FY 2005 TVA baseline
Total conventional fuel vehicles (#) ACTUAL	N/A	1826	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	N/A	On Track	TVA and GSA are beginning data adjustments in FAST to establish an official FY 2005 TVA baseline

Fleet Management	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Total alternative fuel vehicles (#) TARGET	N/A	200	942	1136	1327	1578		...		N/A	N/A	N/A	TVA and GSA are beginning data adjustments in FAST to establish an official FY 2005 TVA baseline
Total alternative fuel vehicles (#) ACTUAL	N/A	471	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	On track	TVA and GSA are beginning data adjustments in FAST to establish an official FY 2005 TVA baseline
Reduction in Executive fleet vehicles larger than a midsize sedan or that do not comply with the alternative fueled vehicle requirements through June (#) TARGET	N/A	N/A	2	4	2	2	2	...		N/A	N/A	N/A	
# Executive fleet vehicles larger than a midsize sedan or that do not comply with alternative fueled vehicle requirements as posted on agency website ACTUAL	N/A	8	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	N/A	On track	
Other, as defined by agency TARGET		0						...		N/A	N/A	N/A	
Other, as defined by agency ACTUAL		0	N/A	N/A	N/A	N/A	N/A	...	N/A	[Please Choose]	[Please Choose]	[Please Choose]	

Progress Questions

1. Does the agency have an anti-idling policy for fleet vehicles? (Yes/**No**/N/A). If publicly available, provide a link to the policy.

Challenges/Justification

ID	Title	Description	First Related Goal (if applicable)	Second Related Goal (if applicable)	Third Related Goal (if applicable)
1	Petroleum Reduction	TVA is working with DOE/OMB to determine the best approach to its vehicle strategy and baseline	Goal 3	Goal 1	N/A
2	Alternative Fuels	Limited alternative fuels infrastructure creates challenges in meeting consumption targets	Goal 3	Goal 1	N/A

Best Practices/Highlights

ID	Title	Description
1	Car Sharing Program	TVA implemented a car sharing program in three corporate locations

Planning

Strategies

ID	Description	Strategy Type	Timeframe	Scale	Success Metrics: FY12	Success Metrics: FY13	First Related Goal	Second Related Goal	Comments
1	TVA will implement a long-term strategy for reducing petroleum consumption and increasing alternative fuel usage	Plan	FY12-FY13	Across Agency	N/A	N/A	Goal 1	[menu]	
2	Annually review vehicle specifications to ensure size and capacity meets mission	Review	On-going	Across Agency	N/A	N/A	Goal 1	[menu]	
3	Replace noncompliant executive vehicles	Plan	FY12-FY13	Local	N/A	All noncompliant vehicles replaced	[menu]	[menu]	
4	File 701 Waivers	Other	FY12	Across Agency	N/A	100% of all waivers filed	[menu]	[menu]	
5	Move to more fuel efficient, smaller sub-compact sedans where practical	Plan	FY13	Across Agency	N/A	TBD	Goal 1	[menu]	
6	Eliminate underutilized vehicles and increase use of car sharing	Review	On-going	Across Agency	N/A	TBA	Goal 1	[menu]	
7	Evaluate GSA Fleet leasing	Review	FY13	Local	N/A	N/A	[menu]	[menu]	

GOAL 4: Water Use Efficiency and Management

Goal Description

This goal is a directive under the E.O. 13423/13514 to advance water use efficiency and management. TVA is required to reduce potable water use intensity by 2 percent per year or at least 26 percent by FY 2020, reduce industrial, landscaping, and agricultural water use by 2 percent per year or at least 20 percent by FY 2020, identify and implement water reuse strategies, achieve objectives established by EPA in Stormwater Guidance for Federal Facilities, and incorporate appropriate reduction strategies for non-potable water use into agency policy and planning.

Agency Lead

Implementation of water efficiency and management will be accomplished by the following key groups and individuals:

- TVA Senior Sustainability Officer
- TVA Director, Environmental Policy and Regulatory Affairs
- TVA Vice-President of Energy Efficiency and Demand Response
- TVA Environmental and Energy Sustainability Committee
- TVA Chief Energy Manager
- TVA Fossil Power Group
- TVA Property Acquisition, Management, and Leasing

Staff Resources

TVA currently has one FTE spending approximately 50 percent of their time dedicated to entering utility bill information into the TVA Internal Energy Management Program database, which tracks energy and water usage at TVA facilities. It is also planned for two FTEs to spend approximately 25 percent of their time dedicated to tracking progress and reporting.

TVA Electric System Projects/Facilities Projects has site-engineering managers with staff that supports building systems renovations and new construction. These managers with guidance and assistance from TVA Environmental and energy managers and staff are tasked with supporting water reuse projects.

Table Color Codes:

Yellow: Agency enters

Green: Prepopulated with data from FY11 plan, if available

Blue: Prepopulated with data from FEMP, if available

Baseline

Baseline	Baseline Year	Baseline Value
Potable water use (Gal/SF)	2007	26.5
Industrial, landscaping, and agricultural water use (Thousand Gal.)	2010	115010040

Planning/Status Table

Water Use Efficiency and Management	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Potable water reduction (% reduction from FY07 base year) TARGET	6	8	10	12	14	16	18	...	26	N/A	N/A	N/A	
Potable water reduction (% reduction from FY07 base year) PLAN	4.6	8	10	12	14	16	18	...	26	N/A	N/A	N/A	
Potable water reduction (% reduction from FY07 base year) ACTUAL	4.6	12.0	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	On track	
Industrial, landscaping and agricultural water reduction (% reduction from FY10 base year) TARGET	N/A	2	4	6	8	10	12	...	20	N/A	N/A	N/A	
Industrial, landscaping and agricultural water reduction (% reduction from FY10 base year) PLAN	N/A	1	8	11	14	16	20	...	22	N/A	N/A	N/A	Updated targets to reflect new planned reductions.
Industrial, landscaping and agricultural water reduction (% reduction from FY10 base year) ACTUAL	N/A	0.8	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	No	On track	
Other, as defined by agency TARGET	N/A	N/A	N/A	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	
Other, as defined by agency ACTUAL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	

Progress Questions

1. Estimated % of agency owned or controlled buildings that currently have meters for measuring potable water use.
 - a. 0-10%
 - b. 11-50%
 - c. **51-90%**
 - d. 91-100%
 - e. Not tracked
 - f. N/A

COMMENT: Select answer c. due to 20% of potable water consumption has been estimated

2. Is a formal policy in place to meet the requirements of the *Stormwater Guidance for Federal Facilities*? Choose the most applicable answer below and if the policy is publicly available, provide a link in the column provided.
 - a. No Policy
 - b. In planning phase
 - c. Have policy in approval process
 - d. Policy has been implemented
 - e. **System in place to alert appropriate staff when policy is triggered**

Challenges/Justification

ID	Title	Description	First Related Goal (if applicable)	Second Related Goal (if applicable)	Third Related Goal (if applicable)
1	Estimated buildings that currently have meters.	20% of potable water consumption has been estimated.	Goal 4	Goal 1	Goal 2
2	Non-Potable Water	For non-potable water, TVA plans to reduce its industrial water use by switching from wet ash handling and storage to dry ash handling and storage. Once this is accomplished, the resulting non-potable water savings will well exceed the goal; however, due to a project being deferred to future years, the planned reduction was not realized in FY 2011. TVA is still on track to exceed the overall goal.	Goal 4	Goal 1	N/A

Best Practices/Highlights

ID	Title	Description
1	New Internal Energy Management Program (IEMP) Database	During FY 2011, TVA moved all of its building energy and water data from its IEMP database to a new commercially available, comprehensive database, which will provide more accurate accounting and reporting flexibility. During this move, TVA combined its building data with TVA's facilities group so that TVA will be using the same basic building data. TVA also undertook an extensive audit of all water data, looking at each month's data for each building for FY 2007 and FY 2011, making needed corrections. After seeing the results compared to what has previously been reported, TVA has come to the conclusion that it is necessary to go back and adjust its FY 2007 base year for potable water use, which was done in its FY 2011 Annual Report on Energy Management. Looking at this corrected data, TVA finished FY 2011 with a 12% reduction in Gal/GSF compared to its corrected FY 2007 base year.
2	Stormwater Guidance	TVA currently meets Federal, State, and local requirements for use of Best Management Practices in stormwater design and construction. TVA also incorporates a NEPA compliance review in development of properties, and maintains National Pollutant Discharge Elimination System (NPDES) permits for many sites. TVA plans to identify appropriate departments that will be responsible for leading improvement of existing stormwater design processes across the organization. The TVA departments will assess current design and construction review processes to identify appropriate compliance check-points. In addition, the TVA departments will educate project management staff in all design and construction groups about the new requirement. TVA will also add a new requirement to standard contract language for engineering, architecture, and construction services, and to work with cross-functional teams and Supply Chain to accomplish this task.
3	Potable Water Progress	During FY 2011, energy surveys including water were conducted at multiple TVA sites covering 4.4 million square feet. TVA consumed 629.4 million gallons of potable water in FY 2011 with an estimated cost of \$3.1 million. To date, TVA has identified projects, from covered facilities surveyed, with a potential water savings of 15.97 million gallons.
4	Non-Potable Water Reduction	TVA has developed plans to eliminate all wet ash and gypsum storage in the system and convert its 11 operating coal-fired power plants to dry storage. The movement away from wet fly ash systems will significantly reduce the overall use of water in the TVA power generation facilities. The conversion to dry fly ash will eliminate ash sluice wastewater generation and thereby reduce industrial water usage. In addition, plans include the installation of 11 bottom ash dewatering systems as well as four gypsum dewatering processes. The goals are to install state-of-the-art equipment to reuse and recycle process water and minimize associated water consumption. The planned upgrades are designed to ensure safety, exceed regulatory requirements, and improve the TVA sustainability posture. Additional projects to contribute to further reductions may be identified and funded as necessary to further reduce non-potable water usage throughout TVA.

Planning

Strategies

ID	Description	Strategy Type	Timing	Scale	Success Metrics FY12	Success Metrics FY13	First Related Goal	Second Related Goal	Comments
1	TVA plans to continue to implement cost effective potable water projects identified by energy and water surveys.	Infrastructure /Settings change	Ongoing	Facility Level	N/A	N/A	Goal 4	Goal 1	
2	TVA plans to continue to identify potential water-saving opportunities.	Review/ Analysis	Ongoing	Facility Level	N/A	N/A	Goal 4	Goal 1	
3	TVA plans to eliminate all wet ash and gypsum storage in the system and convert to dry storage	Infrastructure /Settings change	Out-year	Facility Level	N/A	N/A	Goal 4	Goal 1	

GOAL 5: Pollution Prevention and Waste Reduction

Goal Description

In working towards at least a 50% diversion rate by the end of FY15, TVA has set the FY13 targets to divert 16 percent of its non-hazardous municipal solid waste and 10 percent of its construction and demolition (C&D) waste.

TVA will continue to minimize the generation of waste and pollutants through source reduction. Additionally, where practical and cost-effective, TVA will work to increase the diversion of compostable and organic materials from its waste stream. Accordingly, TVA will work to implement integrated pest management and landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals and materials. TVA will continue reporting in accordance with the requirements of sections 301 through 313 of Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001 et seq.).

Agency Lead

Implementation of pollution prevention and waste reduction goals will be accomplished by the following key groups and individuals:

- TVA Senior Sustainability Officer
- TVA Director, Environmental Policy and Regulatory Affairs
- TVA Environmental and Energy Sustainability Committee
- TVA Supply Chain
- TVA Environmental Permitting and Compliance
- TVA Property Acquisition, Management, and Leasing

Staff Resources

Currently, TVA plans to allocate one FTE to overseeing the planning and implementation of projects and programs to achieve Pollution Prevention and Waste Reduction targets. The FTE will utilize cross-organizational support and collaboration, to achieve targets outlined in this plan and TVA's Sustainability Goals. However, existing staff resources have limited availability due to priority workloads. TVA will need to consider future implementation strategies to achieve and maintain target diversion rates; as well as, the implementation of supporting projects (i.e., Chemical Traffic Control tracking and composting).

Table Color Codes:

Yellow: Agency enters

Green: Prepopulated with data from FY11 plan if available

Planning/Status Table

Pollution Prevention & Waste Reduction	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
Total non-hazardous solid waste (non-C&D) (tons) ACTUAL		21049	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	N/A	N/A	
Non-hazardous solid waste diversion (Non-C&D) (%) TARGET	3	5	16	16	30	50	50	...	50	N/A	N/A	N/A	
Non-hazardous solid waste diversion (Non-C&D) (%) ACTUAL		3.2	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	Yes	On Track	TVA's recycling rate will improve as improvements are made to data collection.
Total C&D material and debris (tons) ACTUAL		9668	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	N/A	N/A	
C&D material and debris diversion (%) TARGET	0	0	10	25	40	50	50	...	50	N/A	N/A	N/A	
C&D material and debris diversion (%) ACTUAL		81	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	On Track	Diversion rate will not be typical for future agency C&D diversion. Data from unique projects and beneficial re-use.
Estimated total weight of materials managed through waste-to-energy (tons) TARGET	0	0	0	0	0	0	0	...	N/A	N/A	N/A	N/A	
Estimated total weight of materials managed through waste-to-energy ¹⁸ (tons) ACTUAL		0	N/A	N/A	N/A	N/A	N/A	...	N/A	No Info Available	No Info Available	N/A	
Number of sites or facilities with on-site or off-site composting programs TARGET	0	0	0	0	0	2	4	...	N/A	N/A	N/A	N/A	
Number of sites or facilities with on-site or off-site composting programs ACTUAL	0	0	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	Yes	OnTrack	
Estimated total weight of materials diverted to composting (tons) TARGET		0	0	0	0	1	1	...	N/A	N/A	N/A	N/A	
Estimated total weight of materials diverted to composting ¹⁹ (tons) ACTUAL		0	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured and Verified	Yes	OnTrack	
% of agency-operated offices/sites and offices located in multi-tenant buildings with a recycling program TARGET	4.51	4.51	10	15	30	50	50	...	N/A	N/A	N/A	N/A	
% of agency-operated offices/sites and offices located in multi-tenant buildings	4.51	4.51	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	OnTrack	

Pollution Prevention & Waste Reduction	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
with a recycling program ACTUAL													
Other, as defined by agency TARGET	N/A	N/A	N/A	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	
Other, as defined by agency ACTUAL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	...	N/A	N/A	N/A	N/A	

Progress Questions

1. Across the agency, estimated % of printing and writing paper purchased that is at least 30% postconsumer fiber.
 - a. < 75%
 - b. 75-90%
 - c. 91-100%
 - d. Not tracked
 - e. N/A

2. Estimated use of integrated pest management practices across the agency.
 - a. 0-10%
 - b. 11-50%
 - c. 51-90%
 - d. 91-100%
 - e. Not tracked
 - f. N/A

3. Does the agency have a current policy to address management of toxic/hazardous chemicals? (Yes/No) If publicly available, provide a link to the policy or memo in the appropriate column. Not publically available.

4. How do the agency’s landscaping policies respond to the [CEQ Guidance on Sustainable Practices for Designed Landscapes](#)? Choose the most applicable answer for the agency’s response. If publicly available, link to any current relevant agency policy.
 - a. No policy
 - b. Agency staff have been alerted of the Guidance
 - c. Guidance is formally referenced in agency documents
 - d. Agency policy in planning phase
 - e. Agency policy in approval process
 - f. Agency policy issued and implemented
 - g. Agency policy issued and system in place to alert appropriate staff about policy when implementing landscaping practices

Challenges/Justification

ID	Title	Description	First Related Goal (if applicable)	Second Related Goal (if applicable)	Third Related Goal (if applicable)
1	Waste Diversion Data	TVA tracks the amount of its municipal solid waste. TVA is working with its new waste disposal contractor to put a mechanism in place to track, by waste type and disposal method, all solid waste managed through the contract. This will provide TVA with both MSW and C&D generation, disposal and diversion data.	1	2	N/A
2	Dispersed Facilities	The remote nature of many of TVA sites limits reuse and recycling possibilities. Diversion for recycling may not be economically feasible and sometimes it is logistically impossible. To address this issue, TVA will work with the new waste disposal contractor to identify viable, long-term and cost-effective solutions for recycling opportunities in remote areas of the valley.	1	2	N/A

Best Practices/Highlights

ID	Title	Description
1	Waste Disposal Contract	TVA has utilized a single contract source for disposal and recycling of all non-hazardous municipal solid waste. Several benefits of a single contract have been realized: consistent and reliable data, manageable pricing, and identification of operational and cost-saving efficiencies. It is estimated that by implementing recycling at 8 facilities, TVA will save approximately \$500,000 annually. Cost-saving estimates include right-sizing waste containers, hauling schedules and disposal fees; as well as, new costs for recycling containers and hauling.
2	Waste Dashboard	The design of a Waste Dashboard was completed in FY11. In FY12, the Waste Dashboard will be implemented to monitor and track TVA's progress in both C&D and MSW diversion. This tracking and reporting tool will be visible to all TVA employees and contractors. Visibility of the agency's success in meeting annual and long-range waste diversion goals may contribute to employee participation and support efforts for a more sustainable workplace culture.

Planning

Strategies

ID	Description	Strategy Type	Timing	Scale	Success Metrics FY12	Success Metrics FY13	First Related Goal	Second Related Goal	Comments
1	Waste Disposal Contract	Plan	Ongoing	Regional	N/A	16 facilities with recycling	1	2	In March 2011, TVA executed a new valley-wide contract for waste disposal and recycling. The new contract includes language that evaluates the contractor's performance in assisting TVA efforts to meet the Sustainability Goals. TVA plans to develop an Integrated Solid Waste Management (ISWM) Plan that utilizes this contract to improve recycling rates. Improving participation in recycling programs will involve ongoing education and outreach and other methods to maintain performance gains; such as, source reduction and single stream recycling.

ID	Description	Strategy Type	Timing	Scale	Success Metrics FY12	Success Metrics FY13	First Related Goal	Second Related Goal	Comments
2	Integrated Solid Waste Management Plan	Plan	FY13-outyear	Regional	N/A	N/A	1	2	<p>TVA does not have a formal waste reduction program. TVA is planning to develop an ISWM Plan in FY 2013. This plan will employ a simple three-step process that evaluates, prioritizes and then improves current practices and then ranks recommendations by least costly, quickest and most easily implementable actions. An ISWM Plan would provide a protocol for TVA to achieve its waste diversion goals. An ISWM Plan describes a program for a property's internal and external waste practices, keeping in mind that infrastructure and priorities are different at varied locations. The end result will be a roadmap for achieving a specific waste diversion by 2015.</p>

GOAL 6: Sustainable Acquisition

Goal Description

TVA's Sustainable Acquisition program requires an integrated focus on promoting sustainable acquisition practices, including compliance with the E.O. 13514's requirement for 95% of new and applicable contractual actions to include sustainability criteria in one or more of the following areas:

- Energy Efficient (Energy Star, FEMP-designated, and low standby power devices)
- Water Efficient
- Bio-based
- Recycled-content
- Environmentally Preferable Products/Services(excluding EPEAT), and Significant New Alternatives Policy (SNAP)/non-ozone depleting substances
- SNAP/non-ozone depleting substances

E.O.13514 also establishes a goal that TVA will update its affirmative procurement plans, policies and programs to ensure that all federally-mandated designated products and services are included in all relevant acquisitions. Although E.O. 13514 is limited to procurements funded with appropriated funds and TVA's acquisitions are made with non-appropriated funds, TVA intends to implement the sustainable acquisition provisions of E.O. 135014 to the extent TVA deems practicable.

Agency Lead

The following individuals will serve as agency leads for implementing Sustainable Acquisition:

- Chief Administrative Officer, Executive Vice-President
- Supply Chain, Vice-President
- Supply Chain Sustainability, Senior Program Manager
- Sustainable Acquisition Working Subcommittee (SAWS), Lead

Staff Resources

TVA launched the SAWS in FY11 to provide support in achieving TVA's sustainable acquisition goals by providing leadership, awareness, training and communications. All TVA employees and suppliers are fully engaged to support the success of Goal 6. Sustainable Acquisition is not merely a "Supply Chain Issue." All TVA employees and Key Suppliers have a role in supporting the successful implementation of TVA's Sustainable Acquisition mission.

Table Color Codes:

Yellow: Agency enters

Brown: Prepopulated with data from Scorecard, if available

Planning/Status Table

Sustainable Acquisition Contract Action Review	3rd QTR FY11	4th QTR FY11	1st QTR FY12	2nd QTR FY12	3rd QTR FY12 (Planned)	4th QTR FY12 (Planned)	Comments
Total # new agency contract actions	39757	36550	35175	35500	35820	36142	
Total # new contract actions eligible for review	1291	1896	2951	1781	1959	2155	
Total # eligible contract actions reviewed (at least 5% of eligible contracts)	65	95	147	89	98	108	
# of contract actions including sustainability requirements	54	90	138	85	93	103	
% of reviewed contract actions that include sustainability requirements	83	95	93.8	95.5	95	95	

Describe how the contracts identified in the table above were selected for review. (For example, indicate if a monetary threshold was selected for review and amount; if FPDS and/or FedBizOpps was used; or types of contracts excluded and methodology for scrubbing and reviewing contracts; etc.)

RESPONSE: TVA’s actual purchases are made using either stand-alone purchase orders (POs) or purchase orders that reference contracts. Contract Managers are able to select from a drop-down menu if goods and services being purchased met EO directives. The total number of new contract actions represents the total number of POs created within the reporting period or quarter. The total number of new and applicable contract actions eligible for review is pulled from the database. A five percent random sample was taken from the population of new and applicable contract actions eligible for review. Contracting personnel and/or suppliers are asked to validate whether contract actions included sustainability requirements, as needed.

Progress Questions

1. Provide the date of the most recent version of the agency’s formal affirmative procurement program (APP) (also known as green purchasing plans or environmentally preferable purchasing plans). If publicly available, provide a link to the plan. (Add link). The procurement plan/sustainable acquisition strategy was finalized on on 11/15/2011. TVA Sustainable Acquisition Resources/Information to Suppliers: http://supplier.tva.gov/Green_Products.html and <http://supplier.tva.gov/> [under the Sustainable Acquisition (Green Procurement) Section].

To support the Green Procurement Plan, TVA utilized and enhanced the following resources:

- (1) On-line training module for Technical Contract Stewards and Procurement Managers/Agents.
- (2) Classroom training for all employees and contractors involved in the procurement process.
- (3) Updated external supplier portal to reflect TVA’s on-going commitment to sustainability.
- (4) Revamped TVA’s Green Products List with over 350 required green products in a more user-friendly resource for employees and contractors.
- (5) Initiated training for users outside Supply Chain, including work management employees and other database users.

2. Does the agency APP or other agency policy or procedures include activities for workforce awareness and appropriate management techniques? (Yes/No)

Yes, TVA’s policy includes the following activities to ensure workforce awareness and support:

- Training for agency staff involved in purchasing and acquisition (program officials, requiring officials, contract specialists, contracting officers, purchase card holders)
- Policies/procedures for ensuring the incorporation of sustainable acquisition requirements into agency procurements (specifications reviews, model contract language, etc.)
- Processes for regularly monitoring, measuring, reporting, and reviewing progress against green purchasing/sustainable acquisition objectives through internal reporting.
- Proactive processes for continuously updating the green purchasing plan, policies, or procedures demonstrating a commitment to support requirements and projects sponsored by the Energy and Environmental Sustainability Committee (EESC) and the Sustainable Acquisition Working Subcommittee (SAWS).

Challenges/Justification

ID	Title	Description	First Related Goal (if applicable)	Second Related Goal (if applicable)	Third Related Goal (if applicable)
1	Training	Since the FY11 Q3 sustainability acquisition achievement was slightly below goal (83% towards the 95% goal), TVA increased monitoring of purchase orders to determine targets for additional green purchasing training to positively impact Q4's results.	7	5	

Best Practices/Highlights

ID	Title	Description
1	Green Products List	Customized the Green Products List of required green products to better serve as a more user-friendly resource for employees and contractors. As a result of the correction plan, TVA achieved 95% compliance for FY11 Q4.
2	Partnerships	TVA adopted the Electric Utility Industry Sustainable Supply Chain Alliance's (EUISSCA) best practices, standards, and metrics as part of TVA's Integrated Supply Chain Sustainability Strategy. TVA's on-going monitoring, analysis, and reporting led to establishment of appropriate targets to focused improvement efforts. TVA's involvement with Green Supplier Network (GSN), EUISSCA, and other initiatives enables TVA to better improve its environmental performance and sustainable business practices. TVA is driving an integrated strategy to advance sustainability beyond compliance through winning suppliers' collaborations that deliver value, supports TVA's vision, and reduces TVA's environmental footprint.
3	Cost Reduction	As a corporate sponsor for GSN, TVA is working to sponsor suppliers annually to participate in GSN's on-site Lean and Clean Reviews designed to help suppliers improve environmental performance and sustainable business practices while supporting TVA's priorities of improving efficiency, performance and reducing costs.

Planning

Identify any specific area targeted for focus/improvement in carrying out sustainable acquisition efforts in FY13.

- a. Construction, Renovation, or Repair
- b. Laundry Services
- c. Building Operations and Maintenance
- d. Cafeteria Operations
- e. Landscaping Services
- f. Meetings and Conference Services
- g. Pest Management
- h. Building Interiors/Furniture
- i. Electronic Equipment
- j. Janitorial Services
- k. USDA Biobased/Biopreferred Acquisition
- l. Other (describe in comments)

COMMENT: Through a new integrator contract model, TVA is partnering with Key Suppliers to ensure compliance with Sustainable Acquisition goals. TVA is also exploring the feasibility of implementing an agency-wide Paper Reduction Program to supplement TVA's "diet and exercise focus" by driving efficiencies, and reducing waste and cost through four strategies: Reduce, Recycle, Rethink, and Reuse.

Strategies

ID	Description	Strategy Type	Timing	Scale	Success Metrics FY12	Success Metrics FY13	First Related Goal	Second Related Goal	Comments
1	Paper Reduction Campaign	Plan	FY13-FY13	Regional	N/A	3% - 5% reduction in TVA's paper costs	5	7	To develop a TVA leadership-sponsored TVA Paper Reduction Plan to promote an agency-wide goal to reduce paper consumption. Create a plan or standard to support a long-term, leadership-endorsed, SAWS-driven paper reduction program to engage and empower employees to purchase writing and printing paper with the highest post-consumer content (30% to 100%). Additional paper reduction strategies include: reduce, recycle, rethink, and reuse.

GOAL 7: Electronic Stewardship and Data Centers

Goal Description

Executive Order 13514 has set multiple Electronic Stewardship objectives; including:

- Purchasing energy efficient products
- Purchasing environmentally registered (EPEAT) products
- Power managing personal computers and monitors
- Using print duplexing
- Using sound electronic disposition practices
- Increasing Data Center efficiency

Agency Lead

Implementation of Electronic Stewardship and Data Centers at TVA will be accomplished through the following key staff:

- TVA Senior Sustainability Officer
- TVA Chief Information Officer
- IT Telecom Design Manager
- Systems Support Senior Manager
- Systems Engineering Manager
- Windows System Management Manager
- IT Resource Planning and Awareness Manager

Staff Resources

The TVA IT team is currently using 10 to 50 percent of eight different positions. This is equal to 1.6 FTEs in FY2012 for Goal 7. Many of the electronics stewardship efforts, as well as data center improvements, are long-standing TVA initiatives and use leveraged resources.

Table Color Codes:

Yellow: Agency enters

Green: Prepopulated with data from FY11 plan, if available

Brown: Prepopulated with scorecard data, if available

Planning/Status Table

Electronic Stewardship & Data Centers	FY10	FY11	FY12	FY13	FY14	FY15	FY16	...	FY20	FY11 Data Verification	FY11 Target Status	FY12 Target Status	Comments
% of covered electronics acquisitions that are FEMP-designated and ENERGY STAR qualified TARGET		95	95	95	95	95	95	...	95	N/A	N/A	N/A	
% of covered electronics acquisitions that are FEMP-designated and ENERGY STAR qualified ACTUAL ²¹		99	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	On Track	
% of covered electronic product acquisitions that are EPEAT-registered TARGET	99	99	99	99	99	99		...		N/A	N/A	N/A	
% of covered electronic product acquisitions that are EPEAT-registered ACTUAL		99.7	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	Yes	On Track	
% of eligible PCs, laptops, and monitors with power management actively implemented and in use TARGET	55	98	100	100	100	100		...		N/A	N/A	N/A	
% of eligible PCs, laptops, and monitors with power management actively implemented and in use ACTUAL		60	N/A	N/A	N/A	N/A	N/A	...	N/A	Estimated	No	On Track	
% of agency, eligible electronic printing products with duplexing features in use TARGET	100	100	100	100	100	100		...		N/A	N/A	N/A	
% of agency, eligible electronic printing products with duplexing features in use ²² ACTUAL (estimate if needed)		100	N/A	N/A	N/A	N/A	N/A	...	N/A	Estimated	Yes	On Track	
% of electronic assets covered by sound disposition practices TARGET	100	100	100	100	100	100		...		N/A	N/A	N/A	
% of electronic assets covered by sound disposition practices ACTUAL ²³		100	N/A	N/A	N/A	N/A	N/A	...	N/A	Estimated	Yes	On Track	
% of agency data centers independently metered, advanced metered, or sub-metered to determine monthly (or more frequently) TARGET	0	40	60	80	90	100		...		N/A	N/A	N/A	
% of agency data centers independently metered, advanced metered, or sub-metered to determine monthly (or more frequently) ACTUAL		0	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	No	Not on Track	
Reduction in the number of agency data centers TARGET								...		N/A	N/A	N/A	
Reduction in the number of agency data centers ACTUAL		0	N/A	N/A	N/A	N/A	N/A	...	N/A	Measured	N/A	N/A	
% of agency data centers operating with an average CPU utilization greater than 65% TARGET	5	50	75	75	75	75		...		N/A	N/A	N/A	
% of agency data centers operating with an average CPU utilization greater than 65% ²⁴ ACTUAL		N/A	N/A	N/A	N/A	N/A	N/A	...	N/A	No Info	No Info	N/A	
Maximum annual weighted average Power Utilization Effectiveness (PUE) for agency. (#) TARGET	0	1.8	1.7	1.6	1.5	1.4		...		N/A	N/A	N/A	
Maximum annual weighted average Power Utilization Effectiveness (PUE) for agency. (#) ACTUAL		1.7	N/A	N/A	N/A	N/A	N/A	...	N/A	Estimated	Yes	On Track	

Challenges/Justification

ID	Title	Description	First Related Goal (if applicable)	Second Related Goal (if applicable)	Third Related Goal (if applicable)
1	Changes to Energy Star / FEMP reporting	Changes to Energy Star/FEMP reporting required an adapted data collection and tabulation process.	2	1	N/A
2	Implementation of PC Power Management	Effective implementation of PC Power Management has required infrastructure upgrades and thoughtful planning.	2	1	N/A

Best Practices/Highlights

ID	Title	Description
1	EPEAT Rate	TVA Achieved a 99.7 % EPEAT Purchase Rate.
2	Monitor Power Management	In 2004, TVA was an Early Adopter of Automated Enterprise Monitor Power Management.
3	Green IT Days	Collected and properly disposed of over 27 pallets of unused TVA-owned technology assets from employees and staff.

Planning

Strategies

ID	Description	Strategy Type	Timing	Scale	Success Metrics FY12	Success Metrics FY13	First Related Goal	Second Related Goal	Comments
1	Purchase enhanced efficiency personal computers. TVA reviews and selects PCs with newer technologies that achieve lower power profiles while in “active state”. Low “active state” power use is in addition to Energy Star criteria.	Infrastructure	Ongoing	Regional	N/A	N/A	6	2	
2	Maintain high Energy Star and EPEAT purchase rates through effective technical	Infrastructure	Ongoing	Regional	95%+	95%+	6	N/A	

	review and specifications.								
3	Complete implementation of the agency-wide PC Power Management Project.	Infrastructure	FY12	Regional	100%	100%	2	N/A	

GOAL 8: Agency Innovation and Government-Wide Support

In 2010, TVA established a refreshed Vision to be ‘One of the Nation’s Leading Providers of Low-Cost and Cleaner Energy by 2020’. TVA has multiple innovative programs and initiatives in order to support achieving this Vision that also support TVA’s overall sustainability and the sustainability of the region it serves.

Renewables:

- TVA’s renewable portfolio includes over 3,800 megawatts from hydro, wind, solar, and methane sources in the Valley.
- In order to provide long-term stability and sustainability to small-scale renewable growth in the region, TVA created the Green Power Providers program, which will contribute to TVA’s renewable energy portfolio and encourage continued development of distributed renewable generation across the region. The program engages small-scale renewable generation including solar, wind, biomass, and hydro. As of March 1, 2012, there are 47.5 megawatts of solar capacity operational today and another 61 megawatts in the development pipeline for a total of nearly 109 megawatts of solar generation currently operating or approved in the Tennessee Valley. Since 2000, operating solar installations in the Tennessee Valley have grown from 3 to over 860.
- TVA has also developed a Renewable Standard Offer program, which offers set prices for power generated by major renewable technologies. TVA’s Renewable Standard Offer program will help support TVA’s vision and long-term strategy to emphasize cleaner air and greater energy efficiency. TVA’s Renewable Standard Offer program will support the growth of the renewable generation industry in the region and contribute to the development and use of alternative sources of energy in the TVA service area and across the country.
 - The Solar Solutions Initiative (SSI) is a pilot program under the Renewable Standard Offer that provides incentive payments for mid-size solar projects in TVA’s Renewable Standard Offer program. This targeted incentive aims to support the existing local solar industry, while also serving as a recruitment tool for new industry in the Valley region, adding investment and jobs. TVA projects that the SSI could help create up to \$80 million of new capital investment and help retain/attract hundreds of jobs.
- TVA is also supporting the development of the solar industry by hosting the Tennessee Valley Solar Solutions Conference along with the Tennessee Solar Institute. In 2012, this Forum brought together over 450 distributors of electricity, investors, academicians, technologists, manufacturers, suppliers, installers and national, and regional and state political leaders to focus on advancing solar energy generation advancement across the Tennessee Valley.

Energy Efficiency and Demand Response

- TVA's EnergyRight® Solutions program includes energy education and efficiency programs for homes, businesses, and industry, as well as programs geared to increase demand response. Programs include:
 - In-Home Energy Evaluations (over 40,000 completed since April 2009).
 - EnergyRight® Solutions for Business provides an incentive payment for qualifying businesses who make an investment in energy saving. The incentive payment that will help offset some of their investment costs. These incentives are available for those projects that help reduce TVA's power demand.
 - EnergyRight® Solutions for Industry include customized TVA technical assistance industrial users of power to devise plant-wide, holistic approaches to energy savings. TVA helps customers maximize efficiency, control expenses and boost their bottom lines. In addition, program participants may be eligible for financial incentives to implement energy-saving changes in their operations and plant. Energy savings by its customers lowers the amount TVA must spend purchasing power to meet demand. Energy efficiency programs can save you money, and help TVA keep energy costs lower for consumers of power throughout the Tennessee Valley.
- TVA, along with Tennessee Public Power Association and the Alliance to Save Energy, hosted a regional Energy Efficiency Forum in February 2012 to create a strong base of awareness and interest in energy efficiency and demand response. The event drew efficiency experts, policy makers, utility executives, elected officials and stakeholders.

Electric Transportation and Infrastructure:

TVA is providing leadership in the TVA Signature Technology area of Electric Vehicles, and the infrastructure that supports them. TVA is working with EPRI, Oak Ridge National Laboratory, local power distributors and regional stakeholders to develop fast, efficient stations where drivers can recharge their cars. TVA is involved in a multi-partner initiative — the EV Project — which is paving the way for the successful rollout of electric transportation across America. The transition from petroleum to electricity can reduce transportation costs and may reduce GHG emissions, and make more efficient use of a variety of energy sources.

Smart Grid

The smart grid is a dynamic two-way communication system involving the entire grid that allows greater choice for every stakeholder on the grid. The primary goal for smart grid is to deliver the optimal amount of information and load control for customers, distributors, and grid operations to change behavior in a way that reduces system demand and costs, and increases energy efficiency. Smart grid promotes reduced emissions, lower energy costs, and greater flexibility to accommodate new renewable distributed energy sources.

TVA and its partners are exploring a variety of Smart Grid-related technologies designed to increase the efficiency of energy use including:

- Smart Sensors, a new generation of low-cost, smart sensors that can monitor the health of power transmission and substation equipment in remote locations.

- Green Circuits, which help reduce energy loss during transmission, resulting in more efficient transmission.
- Wide-Area Visualization, which provides real-time knowledge about the operating characteristics of the interconnected power delivery system to help avoid black outs. This new resource will make it possible to read the status of the electric grid and critical energy sectors minute-by-minute. Eventually, it will make it possible for federal officials responding to large power outages, natural disasters, and other catastrophes to monitor the health and capabilities of the nation's electric infrastructure in times of emergencies and recovery.

Sustainable Recreation Model: Melton Hill Dam Recreation Facility Demonstration

TVA operates 80 recreation areas throughout the Tennessee Valley, where millions of people enjoy countless areas for fun-filled family activities. These recreation areas provide an opportunity for TVA to continue its mission by demonstrating its commitment to environmental leadership, and supporting natural resource protection, education, and clean energy generation in the Tennessee Valley.

TVA organizations including Technology Innovation, Facilities Management, and Property and Natural Resources began development of a sustainable recreation model that integrates renewable technologies, energy efficiency measures, water conservation, and waste recycling into TVA's recreation program. This project is a demonstration of an array of renewable technologies for carbon-free energy generation, water and energy conservation, waste recycling, beneficial use of coal combustion products, and integration of electric vehicle charging infrastructure to create a national sustainable recreation model. TVA's goal is to model and demonstrate eco-friendly recreation reducing the agency's environmental footprint and to provide technology transfer to other agencies.

Utility Environmental Benchmarking Forum

TVA has spearheaded an effort to host Utility Environmental Benchmarking Forums with a focus to improve environmental operations. This voluntary forum focuses on providing a way to exchange information and ideas including best practices, environmental metric results, and lessons learned. Over 30 utilities from the United States and Canada participated in the 2011 Forum.

II. ROI Reporting

Agencies should identify any significant projects or initiatives included in the submission of the previous year's Sustainability Plan that have been deliberately cancelled, suspended, or revised due to cost-effectiveness or other return on investment conclusions. This list should include projects or initiatives that were stopped or altered based on underperformance or a perceived lower return on investment than expected. Likewise, agencies should identify any projects that were expanded due to a higher than expected return on investment. For each, agencies should give a brief description of the project and state what changes to the program were made (i.e., cancelled, revised, etc.).

No project or program changes were identified as meeting the stated criteria.

III. Climate Change Adaptation Planning

Climate Change Adaptation Policy Statement

Agency Climate Change Adaptation Policy Statements submitted as an appendix to the 2011 Sustainability Plan will be pre-populated in this part. If the policy statement was not attached to the 2011 Sustainability Plan submission or has been revised, please attach the (updated) document.

Responsible Senior Official

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Climate Change Science/Information Sources

Identify where key scientific and other information used in developing the Climate Change Adaptation Plan and/or vulnerability analyses was obtained. For each source, please specify:

Source	Type of Science/Information
<i>Examples: publicly available sources, United States Global Change Research Program (USGCRP), academic institution, developed by the agency, shared by a partner agency, accessed through regional interagency networks such as LCCs or Regional Integrated Sciences and Assessments (RISAs), etc.</i>	<i>Examples: physical science data, climate and/or other modeling, economic data, social science data, decision support tools, adaptation knowledge, stakeholder engagement approaches, vulnerability assessments, etc.</i>
Global Climate Change Impacts in the United States, U.S. Global Change Research Program, Cambridge University Press, New York, NY 2009. The full report can be found online at http://www.globalchange.gov/usimpacts .	physical science data, climate and/or other modeling, economic data, social science data
<u>Draft National Ocean Policy Implementation Plan.</u>	Adaptation knowledge
<u>National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate.</u>	Adaptation knowledge
<u>Draft National Fish, Wildlife and Plants Climate Adaptation Strategy.</u>	Adaptation knowledge
Potential Impact of Climate Change on Natural Resources in the Tennessee Valley Authority Region, EPRI, November 2009.	Adaptation knowledge
Sensitivity of the Tennessee Valley Authority Reservoir System to Global Climate Change, WR28-1-680-101, Tennessee Valley Authority Engineering Laboratory, Norris, Tennessee, 1988.	Vulnerability Assessments

Data and Information Needs

From the list below, identify the top three to five high priority (HP) data and information agency in further understanding and addressing climate change risks and opportunities to its mission, programs, and operations. Please be as specific as possible about the types of information that would be MOST useful rather than selecting all of the options.

Ranking (HP or Not)	Type of Data or Information Need
HP	Monitoring and data needs, including at local scales (including information about current and past weather and climate) Scenarios of possible climate futures and integration with existing management models
HP	Better predictive models of climate impacts in specific regions or scales
	Guidance on the use of downscaled global climate models and related data
	Improved understanding of specific Earth system processes
HP	Information about how global climate change models can be linked to local components of the agency's missions or operations
	Information about how to estimate and evaluate the costs and benefits of specific adaptation options (or the costs of inaction)

Collaboration and Communication Needs

From the list below, identify the top three to five high priority (HP) collaboration and communication needs that would assist in further understanding and addressing climate change risks and opportunities to agency mission, programs, and operations. Please be as specific as possible about the types of information that would be MOST useful rather than selecting all of the options.

Ranking (HP or Not)	Type of Collaboration or Communication Need
	Improved public education materials, curriculum, tools related to climate change (including impacts)
HP	Easy to understand indicators of change
	Better early warnings
	Non-technical tools to discuss climate models, their assumptions and projections, and their appropriate applications
HP	Decision-support tools to help address climate-related decision-making under uncertainty
	Centralized 'clearinghouse' for climate change information
HP	Information about best adaptation practices, including local case studies

Other Climate Change Science/Information Needs

List any climate change science and information needs that are not listed above. For each need, please indicate the following:

Type of Information	Additional Detail	Scale	Application
stakeholder engagement approaches	research and tools to improve stakeholder engagement approaches	national	improved stakeholder engagement effectiveness and efficiency
decision support tools	decision support tools which bridge scientific research and operational application	regional	improved risk management capability
regional climate modeling	research and tools to improve regional climate modeling	regional	improved risk management capability