

## STRATEGIC SUSTAINABILITY PERFORMANCE PLAN

Executive Order 13514

Federal Leadership in Environmental, Energy, and Economic Performance



AGENCY CONTACTS: Brenda E. Brickhouse  
Vice President, Environment and Senior  
Sustainability Officer [bebrickhouse@tva.gov](mailto:bebrickhouse@tva.gov)

Monte L. Matthews  
Manager Sustainability & Climate  
and Deputy Sustainability Officer  
[mlmatthews@tva.gov](mailto:mlmatthews@tva.gov)



# Tennessee Valley Authority

## Strategic Sustainability Performance Plan

Executive Order 13514

*Federal Leadership in Environmental, Energy, and Economic Performance*

*Prepared by:*



**June 30, 2015**

**Agency Contacts:**

Brenda E. Brickhouse  
Vice President, Environment & Energy Policy  
and Chief Sustainability Officer  
bebrickhouse@tva.gov

Monte L. Matthews  
Manager Sustainability & Climate  
and Deputy Sustainability Officer  
mlmatthews@tva.gov



## Table of Contents

POLICY STATEMENT .....	2
EXECUTIVE SUMMARY .....	3
PROGRESS ON ADMINISTRATION PRIORITIES .....	15
EVALUATION OF PREVIOUS YEAR’S STRATEGIES .....	16
GOAL 1: GREENHOUSE GAS (GHG) REDUCTION .....	26
GOAL 2: SUSTAINABLE BUILDINGS .....	29
GOAL 3: FLEET MANAGEMENT .....	32
GOAL 4: WATER USE EFFICIENCY & MANAGEMENT .....	34
GOAL 5: POLLUTION PREVENTION & WASTE REDUCTION .....	36
GOAL 6: SUSTAINABLE ACQUISITION.....	38
GOAL 7: ELECTRONIC STEWARDSHIP & DATA CENTERS.....	40
GOAL 8: RENEWABLE ENERGY .....	42
GOAL 9: CLIMATE CHANGE RESILIENCE .....	43
GOAL 10: ENERGY PERFORMANCE CONTRACTS .....	45
Appendix - A TVA Fleet Management Plan.....	47
Appendix - B TVA Adaptation Statement.....	54
Appendix - C TVA Climate Change Adaptation Action Plan .....	56

## 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 to create an Agency that serves the Valley through its energy, environment, and economic development mission. 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 environmental stewardship in a balanced and ecologically sound manner. TVA's pursuits in these areas benefit the well-being of its employees, customers and the natural resources it stewards.

In August 2010, the TVA Board of Directors adopted a vision, to be "one of the Nations' leading providers of low-cost and cleaner energy by 2020." This vision will help TVA lead the Tennessee Valley region and the nation toward a cleaner and more secure energy future while meeting the needs of its customers and promoting a strong foundation for a sustainable future.

TVA manages many environmental sustainability programs, including technology innovation, environmental stewardship and compliance, a growing renewable energy portfolio, and a comprehensive economic development program. TVA works 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 and new innovative programs. This comprehensive Strategic Sustainability Performance Plan (SSPP) addresses key aspects of TVA's energy, environmental, economic, and social resources and responsibilities in the 21<sup>st</sup> century. TVA is now also working to fully align with the new Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*, which was issued on March 19, 2015.

As part of this SSPP, TVA established specific goals and periodically measures and reports its progress toward meeting each of these goals. These goals are an integral part of TVA's business practices and are tracked along with other business objectives. TVA's SSPP is driven not by:

- the goals set forth in E.O. 13514, EO 13693, *Planning for Federal Sustainability in the Next Decade*, EO 13423 *Strengthening Federal Environmental, Energy, and Transportation Management*, the *Energy Policy Act* of 2005 (EPAct05), and the *Energy Independence and Security Act* (EISA) of 2007;
- the TVA Environmental Policy,
- the TVA Integrated Resource Plan and the Natural Resource Plan; and

The budget for meeting the SSPP goals is based upon non-appropriated dollars, solely through revenues from power sales, making this plan's proposed goals and projects subject to the availability of funding as TVA deems appropriate and business applicable.

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

Signed,

Brenda E. Brickhouse  
Chief Sustainability Officer

## EXECUTIVE SUMMARY

### OVERVIEW

Section 8 of Executive Order (E.O.) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, directs Federal agencies to develop, implement, and annually update a multi-year Strategic Sustainability Performance Plan (SSPP). TVA submitted its first SSPP to the White House in June 2010. This document is the fifth annual update to the Plan.

### VISION

The TVA Mission includes serving the Tennessee Valley through providing affordable and reliable energy, environmental stewardship, and economic development. Because these areas of service facilitate sustainability, achieving the EO 13514, EO 13693, EO13423, EPAAct05, and EISA 2007 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 with the environmental aspect of sustainability. TVA efforts to manage natural resources responsibly, reduce emissions, explore the use of 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 and businesses 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.*

### LEADERSHIP

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

- Brenda E. Brickhouse – TVA Vice-President of Environment & Energy Policy and TVA Chief Sustainability Officer.
- Monte L. Matthews – TVA Manager, Sustainability & Climate and TVA Deputy Sustainability Officer

TVA's Environment & Energy Policy group is the point of contact with the Office of Management and Budget, and the Council on Environmental Quality for sustainability reporting. TVA's Environment & Energy Policy group also leads TVA's Sustainability Program and governance structure, which includes subject matter experts (SMEs) and Sustainability Representatives from multiple business units working together and with TVA's Sustainability program to provide leadership and focus for TVA's sustainability efforts. Each representative is tasked with aligning sustainability goals and initiatives into their organizations annual business planning process. Business planning alignment ensures efficient resource utilization to maximize sustainability benefits. This group also acts as TVA's Energy Management Committee and

includes Sustainability Program staff, Federal Working Group members, and representatives from pertinent TVA Business Units.

The objective of TVA's Sustainability Program is to reduce the non-power block component of the TVA environmental footprint as a federal agency. The program achieves this objective by issuing and maintaining the TVA SSPP, directing the TVA Sustainability team, increasing awareness and engaging employees on sustainability, and implementing actions to reduce TVA's internal environmental footprint through cross-organizational collaboration.

## Agency Progress toward (Prior) Sustainability Goals in E.O. 13514 and E.O. 13423

This section provides an overview of agency progress towards the sustainability goals established in E.O. 13514 and E.O. 13423. The subject of many of these goals has been carried over into E.O. 13693 and a review of past performance is useful to determine program effectiveness and development of strategies for future implementation.

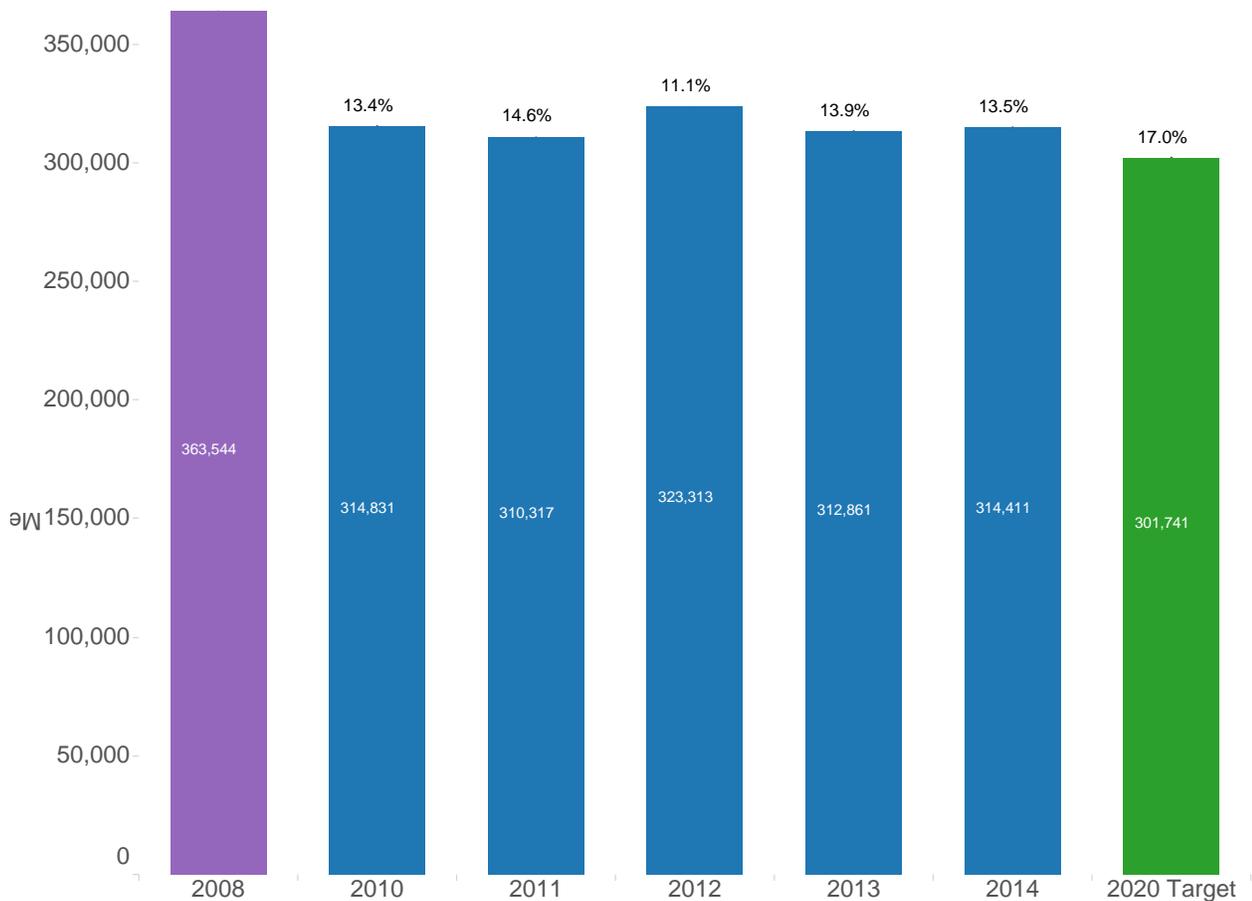
### Goal 1: Greenhouse Gas (GHG) Reduction

#### Agency Progress toward Scope 1 & 2 GHG Goal

E.O. 13514 required each agency establish a Scope 1 & 2 GHG emission reduction target to be achieved by FY 2020. The red bar represents the agency's FY 2008 baseline. The green bar represents the FY 2020 target reduction. The blue bars represent annual agency progress towards achieving this target. The percentage at the top of each bar represents the reduction or increase from the FY 2008 baseline. A negative percentage value indicates that the emissions have decreased compared to the 2008 baseline.

**Figure 1-1**

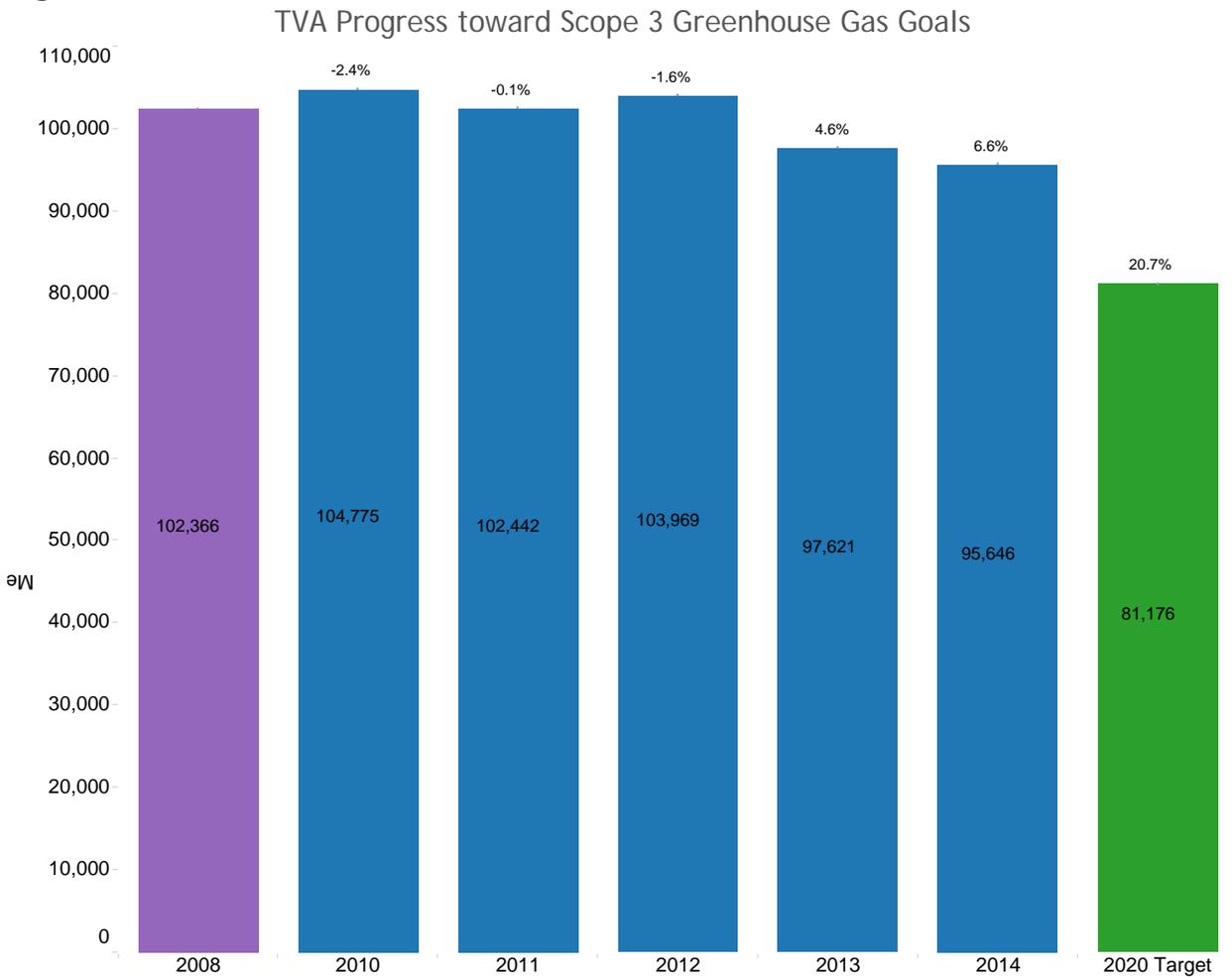
TVA Progress toward Scope 1 & 2 Greenhouse Gas Goals



## Agency Progress toward Scope 3 GHG Goal

E.O. 13514 required each agency establish a Scope 3 GHG emission reduction target to be achieved by FY 2020. The red bar represents the agency's FY 2008 baseline. The green bar represents the FY 2020 reduction target. The blue bars represent annual agency progress on achieving this target. The percentage at the top of each bar represents the reduction or increase from the FY 2008 baseline. A negative percentage value indicates that the emissions have decreased compared to the FY 2008 baseline.

**Figure 1-2**



## **Goal 1: Greenhouse Gas Reduction and Maintenance of Agency Comprehensive Greenhouse Gas Inventory**

### **a. INTEGRATION**

TVA continues to improve the quality and accuracy of its Greenhouse Gas Inventory. Greenhouse gas reductions occur as a result of improved performance across Goals 2-10.

### **b. EVALUATION MEASURES**

TVA compiles its Greenhouse Gas Inventory data in a manner consistent with the Federal Greenhouse Gas Reporting Guidance.

### **c. SUCCESS**

TVA is meeting its GHG Scope 1 & 2 reduction targets. TVA is continuing to evaluate facilities to identify potential Energy Conservation Measures (ECMs) as required by EAct 05 and EISA 2007. During FY 2014, TVA Surveyed 7 EISA “covered facilities” accounting for 3,391,000 square feet. While TVA’s covered facilities are mostly excluded buildings under EAct 05, TVA continues to survey and make energy and waste improvements at both excluded and goal subject buildings. In FY 2014, TVA implemented \$10.8 M in improvements resulting in: 1) \$1,100,000 dollars in annual savings, 2) 11,690 MWh in energy savings, and 3) 39,450,000 gallons of water consumption savings at both covered and non-covered facilities.

### **d. CHALLENGES**

Obtaining GHG Scope 3 emissions data for employee commuter travel is a challenge. In FY2013, TVA surveyed employees to better collect data and increase awareness of the environmental and financial benefits of using alternative modes of commuting. We first tried using web-based software for data collection but discontinued this effort due to budget challenges. We intend to use our agency-wide commercial carbon accounting database for commuter travel, but were not able to include this data in software implementation activities occurring in FY2014.

TVA continues to progress in its implementation of commercial-grade greenhouse gas accounting software that will allow for the increased use of advanced Federal greenhouse gas accounting Scope 3 methodologies. Federal default methodologies are heavily dependent on the number of employees which may make it difficult to accurately show progress in meeting Scope 3 reduction goals. Use of the new software will be available for FY2016 reporting and will allow for the collection of more accurate data and better enable strategic actions directed at meeting Goal 1 targets.

Additionally, TVA’s vehicle fleet has historically been excluded from fleet management goals due to the nature of its make-up, use, and its connection to “the operation and maintenance of the TVA power system.” In FY 2013, TVA agreed to apply the petroleum reduction goal and alternative fuel requirements to its light duty vehicles. Due to this late start, it has been challenging to catch up with the current requirement of a 14% reduction from the 2005 baseline, but we continued to make progress in FY14.

### **e. LESSONS LEARNED**

Reliance on the default Federal Greenhouse Gas Reporting Guidance methodologies continues to present metric calculation difficulties to accurately show Scope 3 goal progress. Results show TVA to be lagging mainly due to the need for better accounting of employee commuting. The standard methodologies assume set distances and an average type of vehicle used. Improved data collection will enable a more accurate calculation for personal vehicle use and further enable TVA to better account for employees using alternative forms of transportation. TVA did show progress towards meeting the Scope 3 emissions goal through a number of ways, including reducing business travel, continued municipal solid waste reduction efforts, and through increased awareness efforts.

### **f. PLANNED ACTIONS**

For Scope 1 and 2 greenhouse gas emissions related to buildings, TVA plans to continue EISA 2007 and goal-subject energy/water surveys and project upgrades to help meet greenhouse gas reduction targets. For Scope 1 greenhouse gas emissions related to fleet vehicles, TVA will continue to reduce petroleum use in fleet vehicles by reducing employee travel, increasing utilization of alternative fuel, and optimizing its fleet size. For Scope 3 greenhouse gas emissions related to commuter travel, TVA will continue its efforts to collect better data and

increase awareness of the environmental and financial benefits of using alternative modes of commuting. For Scope 1, 2 and 3 greenhouse gas emissions inventory, TVA has purchased an agency-wide commercial carbon accounting database in FY13 and is on track to complete its deployment effort by September 30, 2015.

of schedule.

## Agency Strategies to Meet Goals of E.O. 13693

To facilitate agency planning and reporting, the majority of the goals for E.O. 13693 take effect in the beginning of fiscal year 2016 (October 1, 2015) and are therefore appropriate for inclusion in this document. As noted previously many of the goals that agencies pursued under the previous executive orders have been carried over into E.O. 13693.

This section provides certain goal areas where "Required Strategies" are identified. Where an agency does not adopt those required strategies as an FY 2016 priority, the agency should explain the rationale for that decision in the strategy narrative. Also included are recommended strategies that represent strategies that have been successfully implemented by the Federal community and may also be adopted as priority strategies.

### Goal 1: Greenhouse Gas (GHG) Reduction

#### Table 1-1: Goal 1 Strategies – Scope 1 & 2 GHG Reductions

**Instructions:** In Table 1-1 below, list ONLY the top five priority strategies that the agency will implement in FY 2016 to pursue Goal 1 Scope 1 & 2 GHG reductions. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. **DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A).** Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
Use the FEMP GHG emission report to identify/target high emission categories and implement specific actions to resolve high emission areas identified.	Yes	Yes, TVA was successful in using this strategy and will continue to monitor/identify high emission categories with a goal to reduce them.	Complete initial greenhouse gas software implementation by September 30, 2015.
Identify alternative sources of data or alternative methods of analysis not set forth in E.O. 13693, but with the potential to support its goals.	Yes	TVA is working to improve its GHG inventory consistent with generally accepted accounting practices.	Engagement with the Federal Greenhouse Gas Guidance and Technical Document update process to include generally accepted greenhouse gas accounting practices.
Identify and support management practices or training programs that encourage employee sustainability and greenhouse gas consideration.	No		

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
Conceptualize the goals of E.O. 13693 within a projected cost-benefit framework to identify low-hanging fruit.	Yes	TVA is working to improve the integration of its Sustainability and Greenhouse Gas Programs into its management and training programs.	TVA is participating in the DOE Energy Resilience Partnership.
Isolate successful measures applied toward the goals of E.O. 13514 that could be expanded to meet the goals of E.O. 13693.	Yes	TVA is working to improve the integration of its Sustainability and Greenhouse Gas Programs into its management and training programs.	TVA is participating in the DOE Energy Resilience Partnership.
Determine unsuccessful programs or measures to be discontinued to better allocate agency resources, human and otherwise.	No	No	No, TVA will consider implementing this strategy if needed.
Determine which goals set forth in E.O. 13693 represent unambitious targets given past agency performance, identify by how much they could be exceeded, and establish new within-agency target.	No	No	No, TVA will consider implementing this strategy if needed.
Employ operations and management best practices for energy consuming and emission generating equipment.	Yes	TVA is working to improve the integration of its Sustainability and Greenhouse Gas Programs into its management and training programs.	Work with TVA management to encourage employees that impact operations at facilities to take existing FEMP training to learn about operations and management best practices.

**Table 1-2: Goal 1 Strategies – Scope 3 GHG Reductions**

**Instructions:** In Table 1-2 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 1 Scope 3 GHG reductions. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
-----------------	-------------------------------	---	---

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
EXAMPLE Develop and deploy employee commuter reduction plan.	Yes	(1) Introduce parking fees; (2) build bike infrastructure by adding lockers and bike racks; (3), offer rideshare incentives to employees; (4) increase webinar usage to reduce local business travel.	(1) Fully implement parking fees by May 2015; (2) Complete bike infrastructure construction by December 2015; (3) Offer rideshare incentives by December 2015; (4) Develop baseline for webinar usage by November 2015. Install desktop webinar and teleconferencing availability on all agency computers by February 2015. Increase webinar usage by 3% relative to baseline by September 2015.
Reduce employee business ground travel.	Yes	Continue to look into ways of using technology and better planning to reduce the need for employee business ground travel.	Complete initial greenhouse gas software implementation by September 30, 2015.
Reduce employee business air travel.	Yes	Continue to look into ways of using technology and better planning to reduce the need for employee business air travel.	Complete initial greenhouse gas software implementation by September 30, 2015.
Develop and deploy employee commuter reduction plan.	No	No	No, TVA will consider implementing this strategy if needed.
Use employee commuting survey to identify opportunities and strategies for reducing commuter emissions.	Yes	Yes	No, TVA plans on conducting an employee survey every other year.
Increase number of employees eligible for telework and/or the total number of days teleworked.	No	No	No, TVA will consider implementing this strategy if needed.
Develop and implement bicycle commuter program.	No	No	No, TVA will consider implementing this strategy if needed.
Provide bicycle commuting infrastructure.	Yes	Yes	Yes, continue to maintain support for the bicycle infrastructure.
Plan to begin FY 2016: Report scope 3 greenhouse gas emissions for leases over 10,000 E.O. 3(h)(v) rentable square feet	Yes	Yes	Complete initial greenhouse gas software implementation by September 30, 2015.

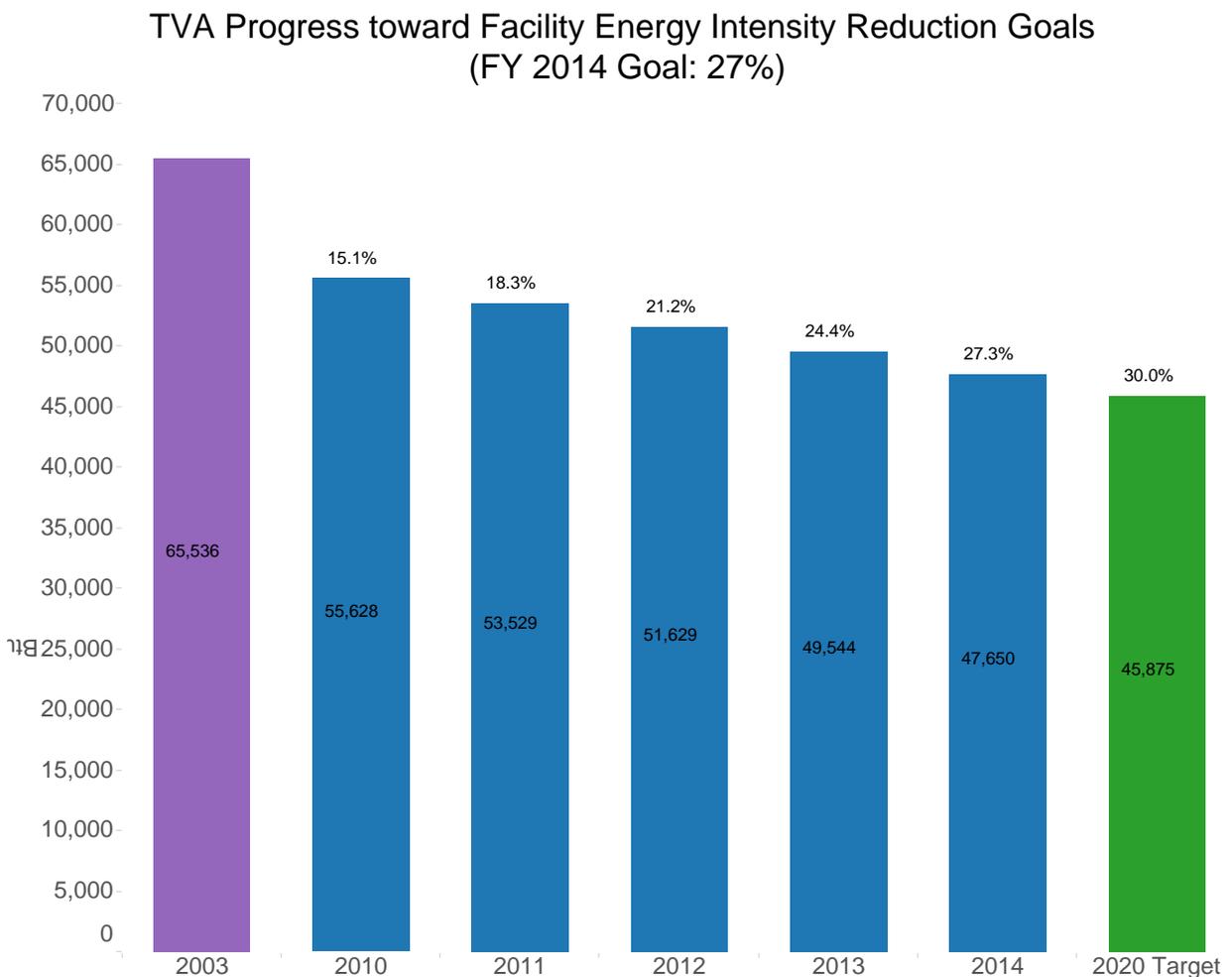
## Goal 2: Sustainable Buildings

### Agency Progress toward Facility Energy Intensity Reduction Goal

E.O. 13514 section 2 required that agencies consider building energy intensity reductions. Further, the Energy Independence and Security Act of 2007 (EISA) requires each agency to reduce energy intensity 30 percent by FY 2015 as compared to the FY 2003 baseline. Agencies are expected to reduce energy intensity by 3 percent annually through FY 2015 to meet the goal. The red bar represents the agency's FY 2003 baseline. The green bar represents the FY 2015 target reduction. The blue bars show annual agency progress on achieving this target. The percentage at the top of each bar represents the reduction or increase from the FY 2003 baseline. A negative percentage value indicates that the energy intensity has decreased compared to the FY 2003 baseline.

**Figure 2-1: TVA Progress toward Facility Energy Intensity Reduction Goals (FY 2014 Goal: 27%)**

**Instructions:** Agencies should not amend or edit this figure. If changes are necessary, contact CEQ.

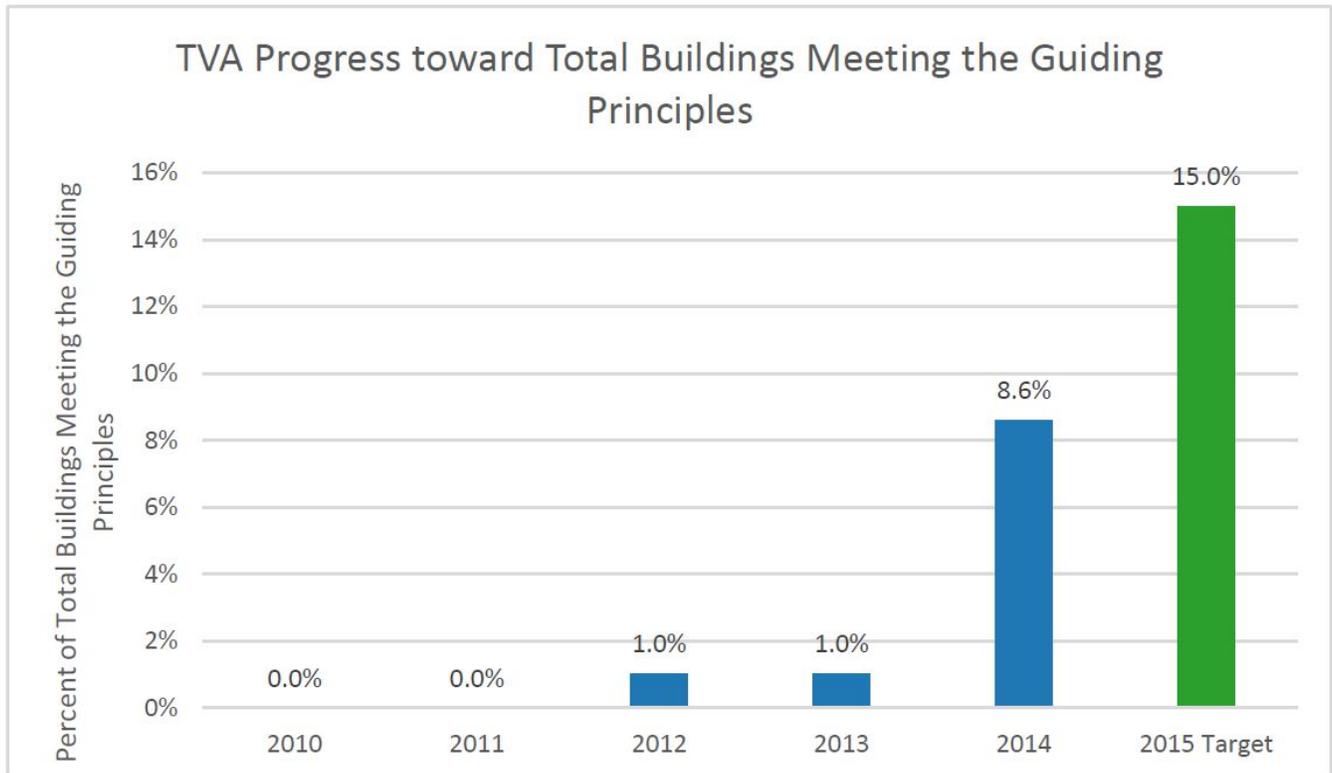


## Agency Progress toward Total Buildings Meeting the Guiding Principles

E.O. 13514 required that by FY 2015, 15 percent of agencies' new, existing, and leased buildings greater than 5,000 square feet meet the Guiding Principles. In order to meet the FY 2015 goal, agencies should have increased the percentage of conforming buildings by approximately 2 percent annually from their FY 2007 baseline. The green bar represents the FY 2015 target. The blue bars represent annual agency progress on achieving this target.

### Figure 2-2: TVA Progress toward Total Buildings Meeting the Guiding Principles

**Instructions:** Agencies should not amend or edit this figure. If changes are necessary, contact CEQ.



## Goal 2: Sustainable Buildings

### a. INTEGRATION

TVA will continue to review all new building designs and major renovations for incorporation of the Sustainable Guiding Principles (SGPs) and work toward retrofitting the SGPs into 15 percent of its greater than 5,000 square feet buildings by FY 2015. TVA recognizes that this work helps meet Goal 1 - GHG reduction through reduced building energy use; Goal 4 - water reduction; Goal 5 - pollution prevention and waste reduction through recycling of construction and demolition debris and recycling installed in new and existing buildings; Goal 6 - sustainable acquisition through the purchase of recycle content, biobased content and energy/water efficient products used in new and renovated buildings; Goal 7 - electronic stewardship and data centers through the purchase and installation of EPEAT compliant computers, monitors and imaging equipment installed in buildings; and Goal 8 - renewable energy through the use of HMOD, RECs and other renewable sources when found to be cost-effective; and Goal 9 - climate change resilience through reduced energy use reducing GHG emissions. TVA is

budgeting SGP work through existing budgets dedicated to new building construction and project review and approval through TVA business planning for existing building SGP upgrades.

#### **b. EVALUATION MEASURES**

TVA is using the Energy Star Portfolio Manager Sustainable Check List to track SGP progress for existing buildings and its own internal database (Tririga) to track building energy/water use.

Note that “Total Number of Buildings Owned,” and “Total Building Gross Square Feet” (GSF) reported in the Agency Size and Scope table are from the TVA database and are the same as reported in the 2014 Annual Energy Management Report. Last year’s Federal Real Property Profile (FRPP) reporting was done from the legacy IEMP database.

#### **c. SUCCESSES**

According to current accounting TVA has to complete SGP retrofits on a total of 40 buildings to meet the 15% EO requirement based on numbers of buildings accounting. TVA has implemented and documented compliance at 23 buildings and is pleased to report that 2 more have been reported complete during the Scorecard period ending June 30, 2015. TVA will continue to work towards the 15 percent requirement by FY 2015 but has funding limitations and has encountered problems meeting some SGP requirements at some sites.

TVA has consistently met the goal subject building energy reduction goal, the EISA 2007 survey requirements and Scope 1 & 2 GHG goal. TVA is continuing to implement cost-effective energy-saving projects in both goal subject and excluded buildings as funding is available.

#### **d. CHALLENGES**

TVA has been challenged in meeting the short term yearly goals due to TVA having initially made plans to upgrade its two largest office buildings that represented 21 percent of its applicable square footage (to date there has been no avenue to obtain partial credit through FRPP reporting), but then had to switch to multiple smaller buildings with OMB's emphasis on numbers of buildings accounting starting in 2010. TVA has continued to apply the SGPs to its two largest office buildings; the Knoxville Office Complex (KOC) and the Chattanooga Office Complex (COC). Together, these two buildings represent 21 percent of TVA goal subject buildings (as defined by EPAAct05) using square footage accounting. To date, 85 percent of the SGP requirements have been completed in the KOC and 85 percent have been completed in the COC. If TVA could receive partial credit for this work the agency would have exceeded the 15 percent by FY 2015 requirement. TVA has also turned its attention to retrofitting a greater number of smaller buildings to try to meet the goal through numbers of buildings accounting. TVA continues to be challenged by reduced funding as TVA is self-funded and receives no appropriated dollars to meet these goals.

#### **e. LESSONS LEARNED**

TVA has learned that implementing recycling in many of its smaller buildings at remote locations has been challenging due to the lack of local recycling infrastructure and available markets. Eight buildings have been delayed in meeting this last requirement. TVA is working with facility maintenance personnel and even employees on-site to find ways to collect and transport recyclables to other locations with recycling infrastructure in place.

#### **f. PLANNED ACTIONS**

TVA plans to complete all SGP requirements on 35 of the total 40 buildings in the next 12 month period. TVA also plans to continue reviewing new building designs to insure compliance with SGP requirements. of schedule.

## **Agency Strategies to Meet Goals of E.O. 13693**

To facilitate agency planning and reporting, the majority of the goals for E.O. 13693 take effect in the beginning of fiscal year 2016 (October 1, 2015) and are therefore appropriate for inclusion in this document. As noted previously many of the goals that agencies pursued under the previous executive orders have been carried over into E.O. 13693.

This section provides certain goal areas where "Required Strategies" are identified. Where an agency does not adopt those required strategies as an FY 2016 priority, the agency should explain the rationale for that decision in the strategy narrative. Also included are recommended strategies that represent strategies that have been successfully implemented by the Federal community and may also be adopted as priority strategies.

## Goal 2: Sustainable Buildings

### Building Energy Conservation, Efficiency, and Management

Section 3(a) of E.O. 13693 states that agencies will promote building energy conservation, efficiency, and management. Section 3(a)(i) requires agencies to reduce building energy intensity by 2.5% annually through the end of FY 2025 (measured in British thermal units per square foot), relative to a FY 2015 baseline and taking into account agency progress to date, except where revised pursuant to section 9(f) of E.O. 13693.

### Building Efficiency Performance, and Management

Section 3(h) of E.O. 13693 states that agencies will improve building efficiency, performance, and management.

Section 3(h)(iii) requires that agencies identify, as a part of the planning requirements of section 14 of this order, a percentage of the agency's existing buildings above 5,000 gross square feet intended to be energy, waste, or water net-zero buildings by FY 2025 and implementing actions that will allow those buildings to meet that target.

CEQ recognizes that any FY 2016 agency projections for this goal are rudimentary estimates. Agencies will be only expected to share lessons learned in implementing this goal and will not be scored or graded on outcomes towards the target established for FY 2016.

Please input the percentage here 1%.

### Table 2-1: Goal 2 Strategies – Sustainable Buildings

**Instructions:** In Table 2-1 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 2. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
Use remote building energy performance assessment auditing technology 3(a)(A)	No	TVA will consider using this technology if feasible.	Evaluate remote building energy performance assessment auditing technologies currently available.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
Participate in demand management programs 3(a)(B)	No	TVA currently has plans in place at its large facilities to curtail demand during high demand periods.	Continue to participate in existing demand management program and look to expand to more facilities.
Ensure that monthly performance data is entered into the Environmental Protection Agency (EPA) ENERGY STAR Portfolio Manager 3(a)(C)	Yes	TVA will continue to track and report covered facilities and sustainable guiding principle buildings that have meters in ENERGY STAR Portfolio Manager.	Benchmark all covered facilities and sustainable guiding principle buildings that have energy meters.
Where feasible: Incorporate Green Button data access system into reporting, data analytics, and automation processes 3(a)(D)	No	TVA has a limited number of buildings with green button data available.	TVA will research what would be required to integrate green button data into its existing database to be analyzed.
Implement space utilization and optimization practices and policies 3(a)(E)	Yes	TVA will review its existing building inventory in an effort to reduce inefficient, high cost, and underutilized space as part of its Strategic Real Estate Plan.	Complete assessments at 3 sites. Complete inventory/data assessment for all active coal and gas properties.
Identify opportunities to transition test-bed technologies to achieve the goals of this section 3(a)(F)	Yes	Work with TVA's Technology Innovation group to test new technologies.	Complete pilot project showcasing the potential savings of a new technology that can be applied to other facilities.
Where feasible: Conform to city energy performance benchmarking and reporting requirements 3(a)(G)	No	TVA currently complies with current adopted state and local building codes and is unaware of any city energy performance benchmarking and reporting requirements.	NA
Begin planning for FY 2020 requirement: Ensure all new construction of Federal buildings greater than 5,000 gross square feet that enters the planning process be designed to achieve energy net-zero and, where feasible, water or waste net-zero by FY 2030 3(h)(i)	No	TVA will provide guidance to organizations on the future requirement to construct net-zero buildings by FY2030 if feasible.	Incorporate requirement into TVA-SPP-05.21.
In all new agency lease solicitations over 10,000 rentable square feet, include criteria for energy efficiency as a performance specification or source selection evaluation factor 3(h)(iv)	No	TVA will incorporate into its internal SPP-05.21 - Resources Efficient Building Design Process.	Incorporate requirement into TVA-SPP-05.21.

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
In all new agency lease solicitations over 10,000 rentable square feet, include requirements for building lessor disclosure of carbon emission or energy consumption data for leased portion of building 3(h)(iv)	No	TVA will incorporate into its internal SPP-05.21 - Resources Efficient Building Design Process.	Incorporate requirement into TVA-SPP-05.21.
In planning new facilities or leases, include cost-effective strategies to optimize sustainable space utilization and consideration of existing community transportation planning and infrastructure, including access to public transit 3(h)(vi)	No	TVA will incorporate into its internal SPP-05.21 - Resources Efficient Building Design Process.	Incorporate requirement into TVA-SPP-05.21.
Ensure that all new construction, major renovation, repair, and alteration of agency buildings includes appropriate design and deployment of fleet charging infrastructure 3(h)(vii)	No	TVA will incorporate into its internal SPP-05.21 - Resources Efficient Building Design Process.	Incorporate requirement into TVA-SPP-05.21.
Include climate resilient design and management into the operation, repair, and renovation of existing agency buildings and the design of new buildings 3(h)(viii)	No	Consider if needed.	NA
<b>(A) Recommended Strategy</b>			
EXAMPLE Deploy CEQ's Implementing Instructions –Sustainable Locations for Federal Facilities.	NA	Agency has no plan to build or lease new facilities in the next two fiscal years.	
Install and monitor energy meters and sub-meters as soon as practicable.	Yes	TVA will update its existing metering plan based on the latest metering guidance and install energy meters at facilities if cost effective.	Complete metering plan that prioritizes facilities that should be metered or sub-metered for energy.
Collect and utilize building and facility energy use data to improve building energy management and performance.	No	TVA will track and monitor building energy usage to identify buildings that may have high energy usage as compared to previous years.	TVA will investigate building energy usage at buildings that have a large increase and make corrections to prevent high energy usage in the future.

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
Incorporate green building specifications into all new construction and major renovation projects.	No	TVA will continue to implement its two internal Energy and Water Sustainable processes: TVA-SPP-05.20 - Internal Environmental and Energy Sustainability Process and TVA-SPP-05.21 - Resources Efficient Building Design Process to guide TVA project managers, architects and interior designers in incorporating sustainability into all new construction and major renovation projects.	TVA does not build many new buildings each year, but for those that are planned; design and construction methods will be reviewed for incorporation of applicable Sustainable Guiding Principles (SGPs) in its “Goal Subject” buildings. TVA had pointed out many years ago in its Sustainable Building Plan that applying the SGPs to its excluded buildings (those used to generate, transmit and control power) was not practical or cost effective.
Redesign or lease interior space to reduce energy use by implementing daylighting, space optimization, sensors/control system installation, etc.	Yes	TVA is in the process of upgrading 40 buildings to incorporate the SGPs to meet the 15% retrofit requirement. TVA is doing this by a process of evaluation, followed by design changes needed to meet SGP requirements, followed by construction modifications and documentation.	Complete all SGP requirements on 35 of the 40 total buildings in the next 12 month period.
Develop and deploy energy and sustainability training for all facility and energy managers.	No	TVA will continue to conduct sustainable building training for TVA project managers, architects and interior designers involved in new construction and renovation.	Review and update past training and provide updated instructions to applicable personnel.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
Include in every construction contract all applicable sustainable acquisition requirements for recycled, biobased, energy efficient, and environmentally preferable products.	Yes	TVA will continue to ensure that federally-mandated sustainable acquisitions are included in all relevant procurements and services.	Continue green procurement training to all applicable personnel.

**Table 2-2: Goal 2 Strategies – Data Center Efficiency**

Section 3(a)(ii) of E.O. 13693 states that agencies must improve data center efficiency at agency facilities. Section 3(a)(ii)(C) requires that agencies establish a power usage effectiveness target in the range of 1.2-1.4 for new data centers and less than 1.5 for existing data centers.

**Instructions:** In Table 2-2 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 2. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
Ensure the agency chief information officer promotes data center energy optimization, efficiency, and performance 3(a)(ii)(A)	See Goal 7 for the update to this table.		
Install and monitor advanced energy meters in all data centers by fiscal year 2018 3(a)(ii)(B)			

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
<b>(A) Recommended Strategy</b>			
<p>EXAMPLE</p> <p>Improve data center temperature and air-flow management.</p>	Yes	<p>Measure existing data center ventilation rates and adjust rates to maintain adequate temperature and air flow will reducing energy usage.</p>	<p>Complete data center survey by August 2015 and implement revised ventilation procedures as soon as possible depending on scope of adjustment.</p>
<p>Optimize agency Data Centers across total cost of ownership metrics.</p>			
<p>Improve data center temperature and air-flow management.</p>			
<p>Identify and consolidate obsolete and underutilized agency computer servers into energy efficient data centers.</p>			

## Executive Summary

- 1) **Performance Review** on each goal area identified in the prior year's Sustainability Plan. The review should also include goal:

### **Goal 3: Fleet Management**

- a. **INTEGRATION** with other federal initiatives and the agency-wide strategic planning and budgeting process.  
TVA will continue to focus on the reduction of light duty vehicles and the purchase of vehicles to reduce the fleet-wide per-mile greenhouse gas emissions score. TVA continually revises comprehensive vehicle specifications to ensure appropriate vehicles are utilized to support their intended mission. These efforts will assist in meeting the Goal 1 GHG emission reduction.
- b. **EVALUATION MEASURES** used to determine progress for each goal during the prior year.  
TVA is using Fleetwide per mile GHG emissions, petroleum and alternative fuel purchased to track progress.
- c. **SUCSESSES** for programs and initiatives that are ahead of schedule and achieving goals in an expedient or innovative manner.  
TVA has been challenged in meeting the reduction in petroleum goal. However TVA was successful in reducing the light duty fleet 167 units during FY 2014 which will aid in this effort. Petroleum consumption is declining and the usage of E85 remains well above the baseline. TVA also purchased and will be placing into service three PHEV half-ton pickup trucks for testing in operational environments.  
  
TVA has also maintained a Ridesharing Service's Vanpool Program since 1974 The program was developed in response to the energy crisis, to alleviate traffic congestion, and parking problems in the downtown Knoxville area. The program operates throughout the TVA region, and continues to operate for the purpose of reducing energy consumption, reducing traffic congestion, alleviate parking problems, and improve air quality. TVA's Ridesharing program is regarded as one of the oldest, largest, and most successful in the Nation.
- d. **CHALLENGES** that preclude or impair goal achievement.  
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. Industry coding of alternative fuels also impacts correctly capturing all E85 purchases. TVA continues to focus on increasing the usage of E85 with the utilization of FleetDash as a way to increase driver awareness and the consumption of E85 for its light duty fleet.
- e. **LESSONS LEARNED** about process and/or plans used to pursue goals.  
(See "Challenges" above)
- f. **PLANNED ACTIONS** to maintain or improve progress, address setbacks, or correct deficiencies.

TVA will continue to focus on methods to reduce petroleum consumption and increasing the usage of E85 for its light duty fleet. The implementation of vehicle telematics and idle mitigation technology will be the primary focus.

**Size & Scope of Agency Operation – Table 1: Agency Size & Scope**

**Instructions:** Enter the appropriate FY 2013 data for your agency. (also in Executive Summary)

<b>Agency Size and Scope</b>	<b>FY 2013</b>	<b>FY 2014</b>
Total Number of Employees as Reported in the President's Budget		
Total Acres of Land Managed		
Total Number of Buildings Owned <sup>1</sup>		
Total Number of Buildings Leased (GSA and Non-GSA Lease)		
Total Building Gross Square Feet (GSF)		
Operates in Number of Locations Throughout U.S.		
Operates in Number of Locations Outside of U.S.		
Total Number of Fleet Vehicles Owned	2764	2597
Total Number of Fleet Vehicles Leased	0	0
Total Number of Exempted-Fleet Vehicles (Tactical, Law Enforcement, Emergency, Etc.)	1097	1032
Total Amount Contracts Awarded as Reported in FPDS (\$Millions)		

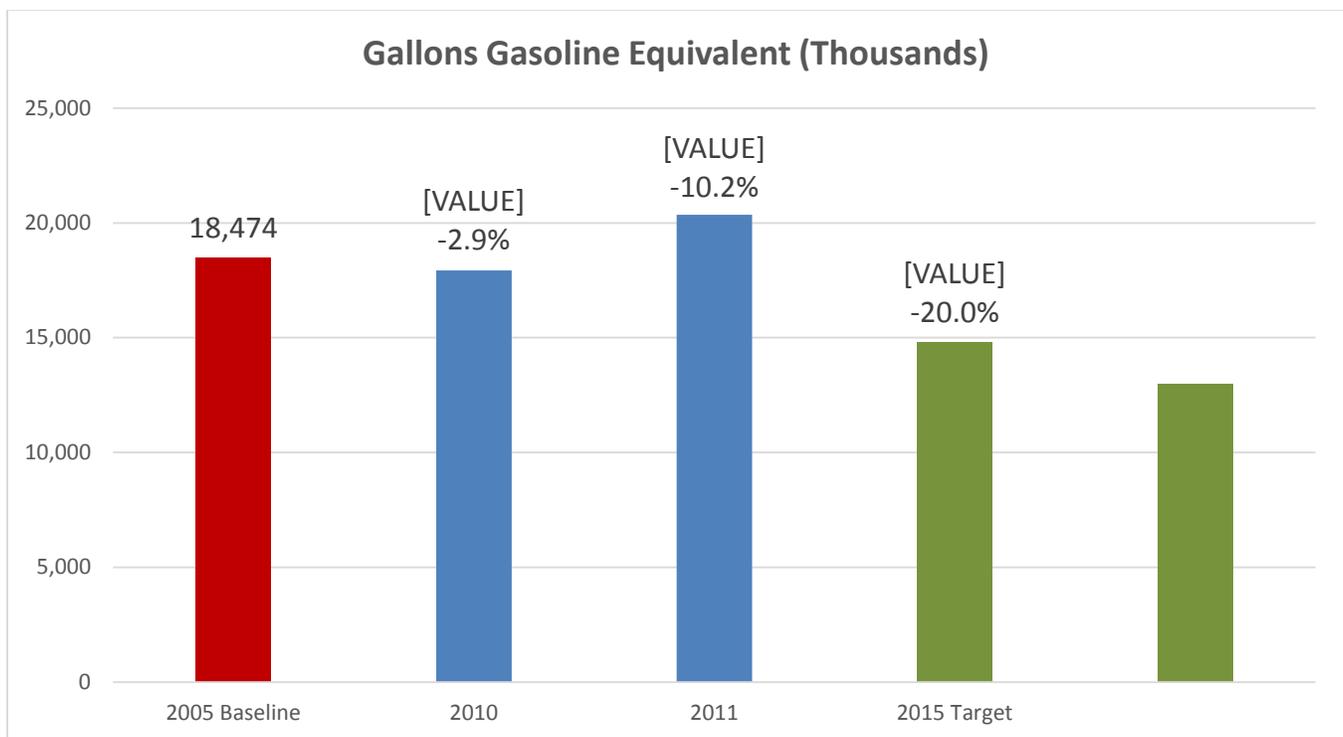
## Goal 3: Fleet Management

### Agency Progress toward Fleet Petroleum Use Reduction Goal

E.O. 13514 required and the Energy Independence and Security Act of 2007 (EISA) requires that by FY 2015 agencies reduce fleet petroleum use by 20 percent compared to a FY 2005 baseline. Agencies were expected to achieve at least a 2 percent annual reduction. The red bar represents the agency's FY 2005 baseline. The green bars represent the FY 2015 target reduction. The blue bars represent annual agency progress on achieving these targets. The percentage at the top of each bar represents the reduction or increase from the FY 2005 baseline. A negative percentage indicates a decrease in fleet petroleum use.

#### Figure 3-1 (EXAMPLE)

**Instructions:** Agencies should not amend or edit this figure. If changes are necessary, contact CEQ.

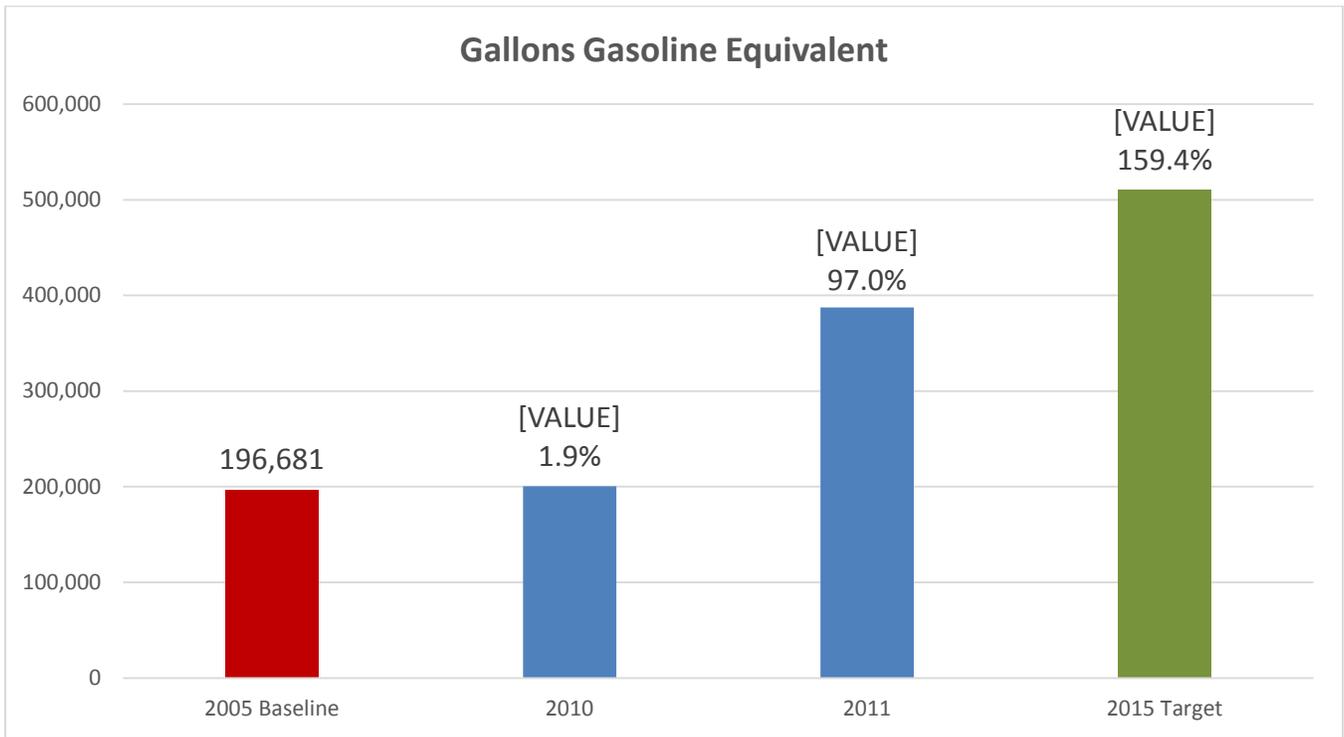


### Agency Progress toward Fleet Alternative Fuel Consumption Goal

E.O. 13423 required that agencies increase total alternative fuel consumption by 10 percent annually from the prior year starting in FY 2005. By FY 2015, agencies must have increased alternative fuel use by 159.4 percent, relative to FY 2005. The red bar represents the agency's FY 2005 baseline. The green bar represents the FY 2015 target. The blue bars represent annual agency progress on achieving this target. The percentage at the top of each bar represents the reduction or increase from the FY 2005 baseline. A negative percentage indicates a decrease in fleet alternative fuel use.

**Figure 3-2 (EXAMPLE)**

**Instructions:** Agencies should not amend or edit this figure. If changes are necessary, contact CEQ.



## Agency Strategies to Meet Goals of E.O. 13693

To facilitate agency planning and reporting, the majority of the goals for E.O. 13693 take effect in the beginning of fiscal year 2016 (October 1, 2015) and are therefore appropriate for inclusion in this document. As noted previously many of the goals that agencies pursued under the previous executive orders have been carried over into E.O. 13693.

This section provides certain goal areas where "Required Strategies" are identified. Where an agency does not adopt those required strategies as an FY 2016 priority, the agency should explain the rationale for that decision in the strategy narrative. Also included are recommended strategies that represent strategies that have been successfully implemented by the Federal community and may also be adopted as priority strategies.

## Goal 5: Fleet Management

### Agency Progress toward Fleet Per-Mile Greenhouse Gas Emissions Goal

E.O. 13693 section 3(g) states that agencies with a fleet of at least 20 motor vehicles will improve fleet and vehicle efficiency and management. E.O. 13693 section 3(g)(ii) requires agencies to take actions that reduce fleet-wide per-mile greenhouse gas emissions from agency fleet vehicles relative to a new, FY 2014 baseline and sets new goals for percentage reductions: not less than 4% by the end of FY 2017; not less than 15 % by the end of FY 2020; and not less than 30% by then end of FY 2025.

E.O. 13693 section 3(g)(i) requires that, as a part of the Sustainability Planning process agencies should determine the optimum fleet inventory, emphasizing eliminating unnecessary or non-essential vehicles. This information is generally available from the agency Vehicle Allocation Methodology (VAM) process that is completed each year. To satisfy this requirement for 2015, please include the VAM results and the appropriate agency fleet management plan to the appendix of this document. Future versions of this plan will require similar submissions by agencies.

### Table 5: Goal 5 Strategies – Fleet Management

**Instructions:** In Table 5 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 5. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
-----------------	-------------------------------	---	---

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
<b>(A) Required Strategy under E.O. 13693</b>			
Collect and utilize agency fleet operational data through deployment of vehicle telematics – as soon as is practicable, but not later than two years after date of order 3(g)(iii)	Yes	(1) Complete telematics demonstration. (2) Develop deployment process. (3) Identify areas of improvement from data collection.	(1) September 2015 (2) September 2015 (3) On-going
Ensure that agency annual asset-level fleet data is properly and accurately accounted for in a formal Fleet Management System as well as submitted to the Federal Automotive Statistical Tool reporting database, the Federal Motor Vehicle Registration System, and the Fleet Sustainability Dashboard (FLEETDASH) system 3(g)(iv)	Yes	(1) Implement FedFMS to enhance the data accuracy for FAST reporting	(1) September 2015
Plan for agency fleet composition such that 20% of passenger vehicle acquisitions are zero emission or plug-in hybrid vehicles by 2020, and 50% by 2025. Vehicles acquired in other vehicle classes count double toward this target 3(g)(v)	Yes	(1) Identify operational opportunities for the use of PHEV vehicles. (2) Acquisition of PHEV vehicles is depended upon charging infrastructure and availability of funds.	(1) September 2016
Plan for appropriate charging or refueling infrastructure for zero emission or plug-in hybrid vehicles and opportunities for ancillary services to support vehicle-to-grid technology 3(g)(vi)	Yes	(1) Determine applicable locations and seek funding.	(1) September 2016
<b>(A) Recommended Strategy</b>			
EXAMPLE Increase utilization of alternative fuel in dual-fuel vehicles.	Yes	(1) Increase utilization of E85 in flex-fuel vehicles; (2) locate dual-fuel vehicles where they have access to alternative fuel; (3) use B20 or greater in diesel vehicles.	(1) Show a 20% increase in E-85 use over FY 2013 by February 2015. (2) Locate 45% of dual fuel vehicles within 5 miles of E-85 station by April 2015. (3) Use 100% B20 or greater in diesel vehicles by January 2015.
Optimize/Right-size the composition of the fleet (e.g., reduce vehicle size, eliminate underutilized vehicles, acquire and locate vehicles to match local fuel infrastructure).	Yes	TVA will focus on methods to track and identify vehicle utilization.	(1) Determine if telematics is a cost-effective tool for managing vehicle utilization by March 2016.

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
Increase utilization of alternative fuel in dual-fuel vehicles.	Yes	Increase utilization of E85 in flex-fuel vehicles.	(1) FleetDash rollout to be completed by November 2015.
Use a Fleet Management Information System to track fuel consumption throughout the year for agency-owned, GSA-leased, and commercially-leased vehicles.	Yes	(1) TVA has an agency-wide fleet management system that meets current data requirements. (2) Implement FedFMS	Implementation of FedFMS to be completed based upon the timeline established by GSA.
Increase GSA leased vehicles and decrease agency-owned fleet vehicles, when cost effective.	No	TVA business model supports owning vehicles instead of leasing from GSA.	
Implement vehicle idle mitigation technologies.	Yes	(1) Complete the idle mitigation demo program of 8 units. (2) Identify additional units from the use of telematics.	March 2016
Minimize the use of "law enforcement" vehicle exemption and implementing the GSA Bulletin FMR B-33, <i>Motor Vehicle Management, Alternative Fuel Vehicle Guidance for Law Enforcement and Emergency Vehicle Fleets</i> of November 15, 2011.	No	TVA exempted vehicles has been approved by GSA and OMB.	
Where State vehicle or fleet technology or fueling infrastructure policies are in place, conform with the minimum requirements of those policies.	NA		
Reduce miles traveled (e.g., share vehicles, improve routing with telematics, eliminate trips, improve scheduling, use shuttles, etc.).	No		

## **Appendices**

### **Instructions:**

Agencies should as an appendix to this plan attach the Agency 2015 Vehicle Allocation Methodology results and 2015 Fleet Management Plan. The seven agencies that meet the requirement established in section 15(b) of E.O. 13693 shall provide as an appendix to this plan, a brief summary of actions planned to respond to the requirements of that section.

All agencies should provide a preliminary plan to address the climate preparedness and resilience requirements of section 13(a) and (b) of E.O. 13693 including any planned actions, identification of offices within the agency responsible for plan preparation, and any milestones for the plan. Agencies may, as appropriate, attach updated Climate Adaptation Plans if they have prepared any revisions since 2014.

In the Sustainability Plan guidance for 2016 agencies will be asked to include several plans and revised targets as established in E.O. 13693 and in the Implementing Instruction issued to support the E.O.



# Goal 4: Water Use Efficiency & Management

## Agency Progress toward Potable Water Intensity Reduction Goal

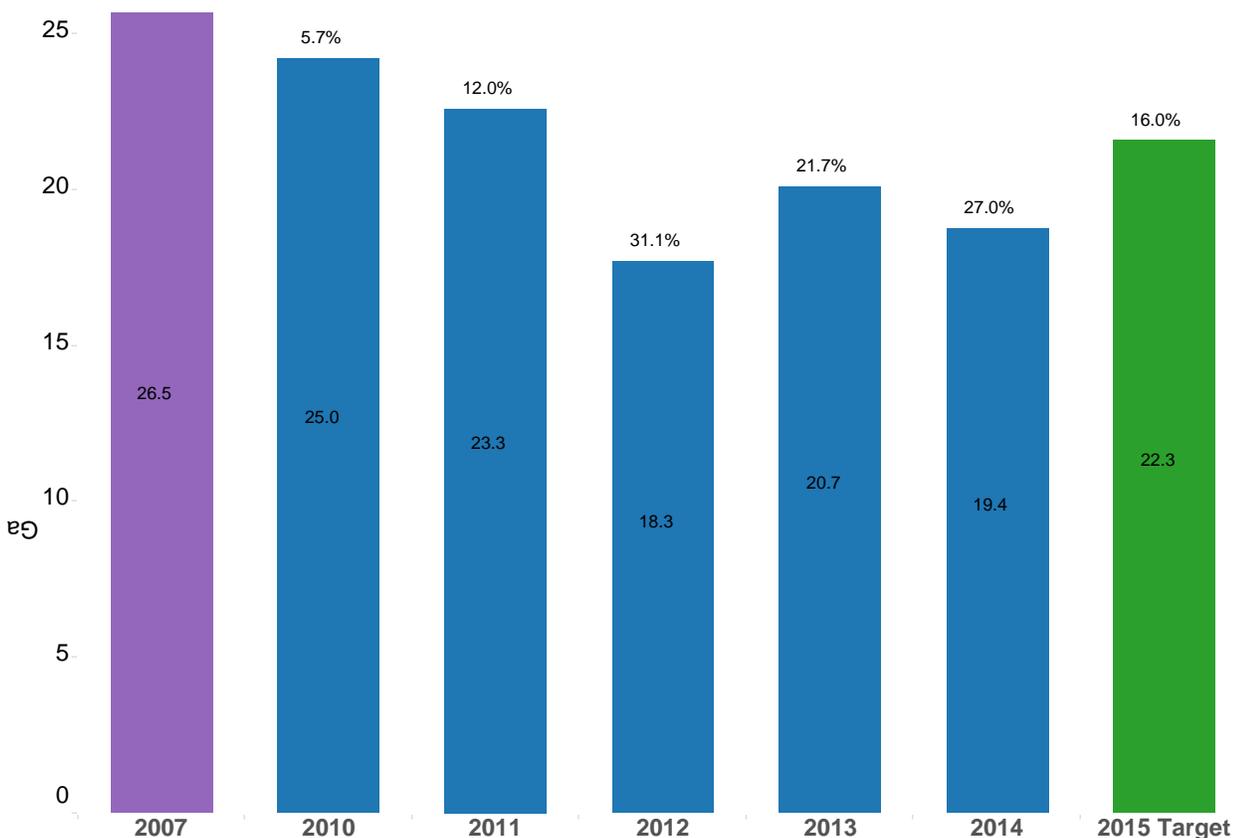
E.O. 13514 required agencies to reduce potable water intensity by 2 percent annually through FY 2020 compared to an FY 2007 baseline. A 16 percent reduction was required by FY 2015 and a 26 percent reduction was required by FY 2020. The red bar represents the agency's FY 2007 baseline. The green bars represent the FY 2015 and FY 2020 target reductions. The blue bars represent annual agency progress on achieving these targets. The percentage at the top of each bar represents the reduction or increase from the FY 2007 baseline. A negative percentage value indicates that potable water use intensity decreased compared to the FY 2007 baseline.

Agency data for progress towards the industrial, landscaping and agricultural water use reduction target is not available.

**Figure 4-1: TVA Progress toward Potable Water Intensity Reduction Goals (FY 2014 Goal: 14%)**

**Instructions:** Agencies should not amend or edit this figure. If changes are necessary, contact CEQ.

TVA Progress toward Potable Water Intensity Reduction Goals (FY 2014 Goal: 14%)



## **Goal 4: Water Use Efficiency and Management**

### **a. INTEGRATION**

TVA considers water management plans as part of its normal operation and maintenance activities. It has several avenues to fund water improvements, which includes several business units. Making water efficiency upgrades in TVA buildings helps meet Goal 2 - sustainable buildings, as many of the upgrades have occurred in buildings chosen to receive SGP upgrades. Reducing water also helps reduce energy use, related to heating demands, helping to meet Goal 1 - GHG targets.

### **b. EVALUATION MEASURES**

TVA uses water utility bills to show its progress in meeting the potable water reduction goal.

### **c. SUCCESSES**

TVA finished FY 2014 with a 27.0 percent reduction in Gal/GSF compared to its FY 2007 base year. TVA's water use primarily went down due to identifying and fixing water leaks at several sites. During FY 2014, water surveys were conducted at multiple TVA sites covering 3.3 million square feet. TVA consumed 571.7 million gallons of potable water in FY 2014.

### **d. CHALLENGES**

TVA does not foresee any major challenges to meeting this goal considering it is already trending ahead of the annual targets. However, TVA's water use could fluctuate due to its aging water infrastructure that is prone to leaking. If major leaks are not found and repaired it could impact TVA's current progress.

### **e. LESSONS LEARNED**

TVA has made several changes over the past several years that have improved the tracking and reduction of water use at its buildings. In FY 2011, TVA moved all of its building energy and water data from its IEMP database to a new commercially available, comprehensive database, which provided more accurate accounting and reporting flexibility. During this move, TVA combined its building data with TVA's facilities group so that all of TVA will be using the same basic building inventory 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. TVA has also been focusing on fixing major potable water leaks at its sites to reduce water consumption.

### **f. PLANNED ACTIONS**

TVA as part of its normal business planning will implement cost-effective water-saving projects in its buildings to further reduce water use. TVA will strive to identify and repair major potable water leaks. TVA will also identify areas where potable water use can be diverted to non-potable water sources.

## **Agency Strategies to Meet Goals of E.O. 13693**

To facilitate agency planning and reporting, the majority of the goals for E.O. 13693 take effect in the beginning of fiscal year 2016 (October 1, 2015) and are therefore appropriate for inclusion in this document. As noted previously many of the goals that agencies pursued under the previous executive orders have been carried over into E.O. 13693.

This section provides certain goal areas where "Required Strategies" are identified. Where an agency does not adopt those required strategies as an FY 2016 priority, the agency should explain the rationale for that decision in the strategy narrative. Also included are recommended strategies that represent strategies that have been successfully implemented by the Federal community and may also be adopted as priority strategies.

## Goal 4: Water Use Efficiency & Management

### Potable Water Consumption Intensity Reduction Goal

E.O. 13693 section 3(f) states that agencies must improve water use efficiency and management, including stormwater management. E.O. 13693 section 3(f)(i) requires agencies to reduce potable water consumption intensity by 2% annually through FY 2025 relative to an FY 2007 baseline (measured in gallons). A 36% reduction is required by FY 2025.

### ILA Water Consumption Reduction Goal

E.O. 13693 section 3(f)(iii) also requires that agencies reduce their industrial, landscaping and agricultural (ILA) water consumption measured in gallons by 2% annually through FY 2025 relative to a FY 2010 baseline.

### Table 4: Goal 4 Strategies – Water Use Efficiency & Management

**Instructions:** In Table 4 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 4. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
Install appropriate green infrastructure features to help with storm- and wastewater management (such as rain gardens, rain barrels, green roofs, or impervious pavement) 3(f)(iv)	Yes	TVA will incorporate green infrastructure features as part of new construction and major renovations if cost effective.	Provide guidance to TVA groups constructing new facilities or completing major renovations to include green infrastructure features.
Install and monitor water meters; collect and utilize building and facility water data for conservation and management 3(f)(ii)	Yes	TVA will update its existing metering plan based on the latest metering guidance and install water meters at facilities if cost effective.	Complete metering plan that prioritizes facilities that should be metered or sub-metered for water.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Recommended Strategy</b>			
EXAMPLE Install high efficiency technologies (e.g., WaterSense).	No	Agency completed retrofit of bathroom fixtures and landscaping water systems at all agency sites in FY 2013. No new retrofit activities for water reduction are scheduled at agency sites during the next fiscal year.	
Install high efficiency technologies (e.g., WaterSense).	Yes	TVA will continue to conduct EISA water surveys and identify water efficiency measures at its buildings and will continue to implement cost-effective measures.	Complete water efficiency projects as part of normal business planning if cost-effective.
Prepare and implement a water asset management plan to maintain desired level of service at lowest life cycle cost (for best practices from the EPA, go to <a href="http://go.usa.gov/KvbF">http://go.usa.gov/KvbF</a> ).	No	Consider if needed.	NA
Minimize outdoor water use and use alternative water sources as much as possible.	NA	Consider if needed.	NA
Design and deploy water closed-loop, capture, recharge, and/or reclamation systems.	NA	Consider if needed.	NA
Install advanced meters to measure and monitor (1) potable and (2) industrial, landscaping and agricultural water use.	Yes	TVA will update its existing metering plan based on the latest metering guidance and install water meters at facilities if cost effective.	Complete metering plan that prioritizes facilities that should be metered or sub-metered for water.
Develop and implement programs to educate employees about methods to minimize water use.	No	Consider if needed.	NA
Assess the interconnections and dependencies of energy and water on agency operations, particularly climate change's effects on water which may impact energy use.	NA	Consider if needed.	NA
Consistent with State law, maximize use of grey-water and water reuse systems that reduce potable and ILA water consumption.	NA	Consider if needed.	NA

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
Consistent with State law, identify opportunities for aquifer storage and recovery to ensure consistent water supply availability.	No	Consider if needed.	NA
Ensure that planned energy efficiency improvements consider associated opportunities for water conservation.	Yes	TVA currently incorporates this strategy as part of its ongoing energy and water surveys.	Continue to identify energy savings associated with reduced water consumption.
Where appropriate, identify and implement regional and local drought management and preparedness strategies that reduce agency water consumption including recommendations developed by Regional Federal Executive Boards.	No	Consider if needed.	NA
Reduce non-potable water use through conversion of wet fly ash storage to dry storage	Yes	TVA has developed plans to eliminate all wet ash and gypsum storage in the system, convert its 11 operating coal-fired power plants to dry storage and to retire coal-fired plant units. The movement away from wet fly ash systems will significantly reduce the overall use of non-potable water in TVA power generation facilities.	Continue to show progress in completing wet fly ash to dry ash conversions at plants.

action issued to support the E.O.

## **Goal 5**

### **2014 Federal Sustainability Plan Template**

#### **GOAL 5: POLLUTION PREVENTION & WASTE REDUCTION**

##### **Agency Progress toward Pollution Prevention & Waste Reduction**

E.O. 13514 requires that Federal agencies promote pollution prevention and eliminate waste. The E.O. requires agencies to minimize the use of toxic and hazardous chemicals and pursue acceptable alternatives. It also requires agencies minimize waste generation through source reduction, increase diversion of compostable materials, and by the end of FY 2015 divert at least 50% of non-hazardous and 50% of construction and demolition debris.<sup>1</sup>

##### **a. INTEGRATION**

TVA has implemented an agency-wide recycling program and will continue to seek opportunities for source reduction to work towards 50 percent Non-hazardous Municipal Solid Waste (MSW) and Construction and Demolition (C&D) debris diversion rates by the end of FY 2015. TVA recognizes that this work helps meet Goal 1 - GHG reduction through reduced waste generated and landfilled; Goal 2 - through recycling of construction and demolition debris and recycling installed in new and existing buildings; and Goal 6 - through efforts to identify and reduce waste streams and promote the elimination, substitution, and/or management opportunities for chemical acquisition.

##### **b. EVALUATION MEASURES**

Both MSW and C&D diversion rates are measured by conducting quarterly assessments of TVA's disposal log provided by TVA's primary service provider. Additionally, mechanisms have been implemented to improve visibility and ensure consistent tracking of TVA's progress towards a 50 percent diversion rate. TVA continues to improve data collection for C&D projects where waste disposal is not handled by its primary service provider. Mechanisms which are in place to evaluate are, business plan metric report cards, as well as reports specifically for waste management.

##### **c. SUCCESSES**

In FY 2011, TVA assessed its recycling program and identified facilities where recycling programs are needed. TVA instituted company-wide opportunities to implement the recycling program. In FY 2013, TVA implemented 7 recycle programs at plants and office facilities, and in FY2014 further remote recycling programs were implemented per business plan and budget allowances. The implementation of recycling programs has improved the agency's recycling rate from 3.2 to 6.2 percent over the past three years. With source reduction, TVA's waste diversion rate has improved to a 7 percent landfill diversion as compared to FY 2008 baseline.

---

<sup>1</sup> Waste guidance will be issued in mid-late FY 2015, and agencies will be expected to begin implementation in FY 2015. Next year's SSPP will include strategies as appropriate, and accounting will begin in FY 2016.

**d. CHALLENGES**

Since programs have been implemented at TVA locations where recycling is feasible and cost effective, the main challenge for achievement of a 50 percent MSW diversion is employee engagement for both source reduction and recycling practices. Remote locations prove to be a challenge to fully deploy recycling. Additionally, TVA faces the challenge that opportunities to recycle at C&D recycling facilities are limited due to the lack of cost-effective local service providers.

**e. LESSONS LEARNED**

TVA has recognized that maintaining routine communication with employees has proven to be a critical role to the success of both MSW and C&D diversion processes. Additionally, the role of Supply Chain is vital to establishing contract terms and service processes that support source reduction.

**f. PLANNED ACTIONS**

TVA will increase awareness and outreach to support improvement of its MSW diversion rate. TVA will continue to work to identify practical and cost-effective opportunities to recycle C&D debris.

## Evaluation of Previous Year's Strategies

Below are the specific strategies your agency selected in your 2013 Sustainability Plan. Please use the table to evaluate the progress of these strategies.

Goal	(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was the strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
<b>Goal 5: Pollution Prevention &amp; Waste Reduction</b>	Eliminate, reduce, or recover refrigerants and other fugitive emissions.	NO	NO	No, TVA has set a Scope 1 and 2 GHG emissions reduction target of 17% by FY 2020, relative to the emissions in FY 2008.
	Reduce waste generation through elimination, source reduction, and recycling.	YES	YES	Yes, TVA plans to continue to reduce waste landfilled through recycling and source reduction.
	Implement integrated pest management and improved landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals/materials.	NO	NO	No, TVA will consider as practical.
	Establish a tracking and reporting system for construction and demolition debris.	YES	YES	Yes, TVA will continue with efforts to integrate and refine databases to better track waste generation
	Develop/revise Agency Chemicals Inventory Plans and identify and deploy chemical elimination, substitution, and/or management opportunities.	YES	NO	TVA will target corporate facilities to promote biobased cleaning products. Additionally, TVA will increase sustainable acquisition purchases through enhanced training, meetings with business units, and developing task focused collaborations with internal stakeholders.
	Implement non-hazardous municipal solid waste recycling programs.	YES	YES	No, programs have been implemented at TVA locations where recycling is feasible and cost effective.

### Table 5: Goal 5 Strategies – Pollution Prevention & Waste Reduction

**INSTRUCTIONS:** In Table 5 below, list ONLY the top five priority strategies that the agency will pursue in FY 2015 to achieve Goal 5. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable (“NA”) or “No”, an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is “Yes”, provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. **DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A).** Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2015 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
Report in accordance with the requirements of sections 301 through 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (42 U.S.C 11001-11023) 3(j)(i)	Yes	TBD	TBD
Reduce or minimize the quantity of toxic and hazardous chemicals acquired, used, or disposed of, particularly where such reduction will assist the agency in pursuing agency greenhouse gas reduction targets established in section 2 of E.O. 13693 3(j)(iv)	Yes	TBD	TBD

#### (A) Recommended Strategy

(A) Will the agency implement the following strategies to achieve this goal?	(B) Top Five? Yes/No/N A	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months

Eliminate, reduce, or recover refrigerants and other fugitive emissions.	No	TVA has set a Scope 1 and 2 GHG emissions reduction target of 17% by FY 2020, relative to the emissions in FY 2008.	NA
Reduce waste generation through elimination, source reduction, and recycling.	Yes	TVA will continue to promote source reduce and recycling practices through outreach and awareness initiatives.	1) Collaborate with TVA Supply Chain's Acquisition Program to encourage source reduction and recycling in contracts and services.  2) TVA will deploy employee focused messaging on the benefits of source reduction and recycling.
Implement integrated pest management and improved landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals/materials.	NO	TVA will consider as practical	N/A
Establish a tracking and reporting system for construction and demolition debris elimination.	YES	TVA will continue with efforts to integrate and refine databases to better track waste generation.	1) Integrate manual data entry form database with TVA IT database containing vendor's data.  2) Finalize Cognos report view for integrated databases  3) Make database internally accessible to TVA employees.
Develop/revise Agency Chemicals Inventory Plans and identify and deploy chemical elimination, substitution, and/or management opportunities.	NO	TVA's Supply Chain will target corporate facilities to promote biobased cleaning products. TVA will increase sustainable acquisition through enhanced training, meetings with business units, and developing task focused collaborations with internal stakeholders.	N/A
Take inventory of current HFC use and purchases	NO	TVA will be including HFC data in its agency-wide carbon accounting database.	N/A
Require high-level waiver or contract approval for any agency use of HFCs	NO	Consider this strategy as practical and necessary.	N/A

<p>Ensure HFC management training and recycling equipment are available</p>	<p>Yes</p>	<p>TVA will continue to implement HFC management training as part of its Technical Training Program. Additionally, measures will be taken to ensure that recycling equipment/contracted services are available at appropriate locations.</p>	<p>1) Continue EPA Technical Training Certification for refrigerants to appropriate personnel.</p> <p>2) Coordination with appropriate business units to ensure HFC recycling equipment/contracted services are available as appropriate.</p>
---	------------	--	---

## Goal 6

### 2014 Federal Sustainability Plan Template

INSTRUCTIONS: Use this OMB MAX template for preparing and submitting the 2014 Strategic Sustainability Performance Plans (Sustainability Plans) and any appendices. This template has been pre-populated with specific data tables and graphs that contain performance data from the most recent fiscal year (2013) as provided by your agency; therefore, agencies should not need to change these pre-populated tables or graphs. If an agency finds errors in the tables or graphs, please contact CEQ. The Sustainability Plans and any associated appendices should be submitted to CEQ and OMB through MAX Collect **no later than June 30, 2014**. Agency submissions are considered draft, pre- decisional, and should not be released publically. Do not add text into the box below.

- 3) **PERFORMANCE REVIEW** on each goal area identified in the prior year's Sustainability Plan. The review should also include goal:

**a. INTEGRATION**

Goal 6, Sustainable Acquisition, achievements significantly contribute to and support Goal 1 - GHG Reduction, Goal 2 - Building Energy Intensity, Goal 3 - Fleet Management, Goal 5 - Waste Reduction, and Goal 7 - Electronic Stewardship.

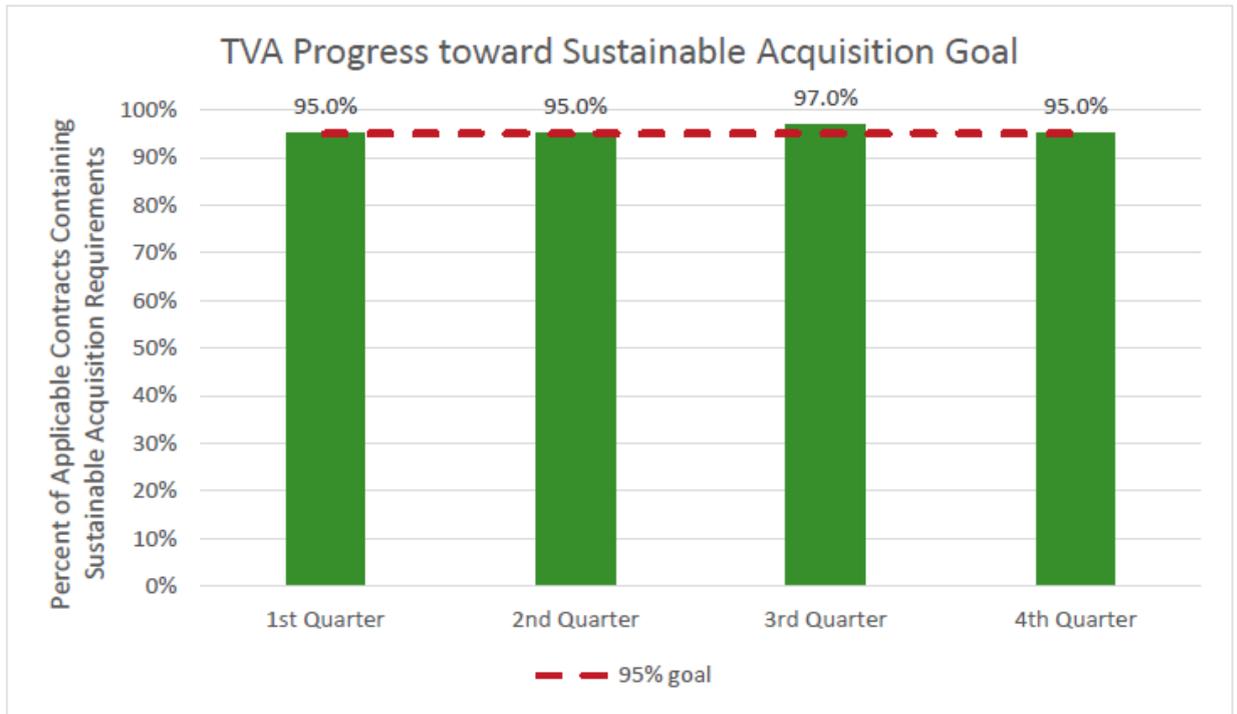
**b. EVALUATION MEASURES**

The Tennessee Valley Authority (TVA) Supply Chain organization maintains oversight of agency sustainable acquisition policies, contract actions, documentation, and contractual language inclusion in order to assure practices and policies comply with Executive Order requirements.

Unlike other Federal Agencies, TVA is not subject to the Federal Acquisition Regulation (FAR) or the Office of Federal Procurement Policy. TVA's Supply Chain policies are in accordance with the TVA Act. Moreover, TVA utilizes the Maximo materials management and procurement system, a commercial off the shelf product, to purchase materials and services. Items purchased with sustainable acquisition requirements are assigned "Green Procurement Codes" in Maximo. The acquisition of these items is tracked at the purchase order line item level. TVA's Supply Chain has the ability to run queries to identify all Green-Coded line items that were purchased in a given period. The total population of applicable items compared to the items where Green Procurement attributes were obtained produces the sustainable acquisition rate.

**c. SUCCESSES**

During Fiscal Year (FY) 2014, TVA consistently demonstrated a sustainable acquisition rate above 95 percent using TVA's accepted evaluation metrics. In FY14 TVA focused on opportunities to increase biobased products. One success was the standardized adoption of a biobased hand soap in our fossil generation plants. TVA also facilitated a biobased cleaning product pilot in our Chattanooga Office Complex in FY 2015. TVA continues to reduce waste by using a printer cartridge recycling process, and requires our company-wide office supply contractor to provide printer paper with at least 30% postconsumer fiber. TVA's Information Technology (IT) organization is diligent in specifying Energy Star computers whenever possible.



#### **d. CHALLENGES**

TVA receives no appropriated funding from Congress; all operating expenses must be funded by ratepayers of the Tennessee Valley through the sale of electrical power. During FY14, TVA executed an organizational redesign in an effort to reduce O&M costs and improve TVA's financial position by aligning costs and revenue. As part of this redesign, there was a significant reduction in workforce and several programs were impacted, including the dedicated support for Sustainable Acquisition initiatives.

TVA is primarily an industrial producer of electricity. As such we are limited by technical requirements and specifications in the running of our generating facilities, which include highly regulated nuclear plants. Accepted maintenance protocols often preclude adoption of materials with biobased or recycled content. Additionally, accessing tools such as the Green Compilation list can sometimes be difficult since TVA does not always utilize the same operating systems the other government agencies utilize.

#### **e. LESSONS LEARNED**

Sustainable Acquisition is most successful when the requesting organizations recognize and include sustainable attributes in their requisitions to Supply Chain. At TVA, an example of this integration is the recognition of energy efficiency requirements in the specifications for computer hardware by TVA's IT organization, and the approval of biobased industrial hand soap for fossil generating facilities by TVA's Facilities organization.

#### **f. PLANNED ACTIONS**

In FY 2014 TVA planned a pilot program to evaluate to use of more biobased cleaning products. The pilot will run during the Second and Third Quarters of FY 2015 in the Chattanooga Office Complex. Also in FY 2014, TVA commenced a thorough review of its Sustainable Acquisition on-line training course. The training program review spawned some procedural modifications that will be implemented in FY 2015. Our next effort will then be focused on revising TVA's

formal policy document on Sustainable Acquisition. Finally, TVA will be reviewing our green coding in our materials management system to validate some coding errors that we have noticed.

#### 4) **PROGRESS ON ADMINISTRATION PRIORITIES**

##### **Biobased Purchasing Strategies**

TVA is focusing on cleaning chemicals as a category which may provide opportunities for greater use of biobased products. TVA has already adopted a standardized industrial biobased hand soap program in our fossil plants and is moving to a similar biobased hand soap in the rest rooms in the Chattanooga Office Complex. In 2015 our Chattanooga custodial group will evaluate various biobased cleaning products for adoption.

(See "Planned Actions")

## Evaluation of Previous Year's Strategies

Below are the specific strategies your agency selected in your 2013 Sustainability Plan. Please use the table to evaluate the progress of these strategies.

Goal	(A) Strategy	(B) Did you implement this strategy? Yes/No	(C) Was this strategy successful for you? Yes/No	(D) Will you use this strategy again next year? (Please explain in 1-2 sentences)
<b>Goal 6: Sustainable Acquisition</b>	1. Update and deploy agency procurement policies and programs to ensure designated federally mandated sustainable products are included in all relevant procurements and services.	Yes	Yes	TVA will continue to review and provide necessary updates to procurement policies and programs to ensure designated federally mandated sustainable products are included in all relevant contracts where appropriate and practical.
	2. Deploy corrective actions to address identified barriers to increase sustainable procurements with special emphasis on biobased purchasing.	Yes	No	TVA will target corporate facilities to promote biobased cleaning products. Additionally, TVA will increase sustainable acquisition purchases through enhanced training, meetings with business units, and developing task focused collaborations with internal stakeholders.
	3. Include biobased and other agency sustainability clauses in all applicable and relevant contracts.	Yes	No	TVA will continue to implement biobased clauses and promote the usage of checklists to ensure all applicable Request for Proposals and Request for Quotes, as well as appropriate contracts include additional sustainability clauses where appropriate and practical.

	4. Review and update agency specifications to include and encourage biobased and other designated green products to enable meeting sustainable acquisition goals.	N/A	N/A	TVA will continue to review and provide necessary updates to procurement policies and programs to ensure designated federally mandated biobased products are included in relevant contracts where appropriate and practical.
	5. Use Federal Strategic Sourcing Initiatives, such as Blanket Purchase Agreements for office products and imaging equipment, that include sustainable acquisition requirements.	N/A	N/A	TVA will continue outreach efforts and leverage partnerships with business development agencies to create awareness and identify ways to increase sustainable products, including biobased products, from small businesses.
	6. Report on sustainability compliance in contractor performance reviews.	N/A	N/A	TVA will conduct performance reviews for key suppliers as appropriate.
	7. Implement an agency wide initiative that encourages source reduction and the procurement and wise usage of 30% to 100% recycled and/or biobased paper.	Yes	Yes	TVA intends to continue both its paper acquisition program and reduction pilot project and will support biobased purchases as well as the agency's recycling goals.

E.O. 13514 requires agencies to advance sustainable acquisition and ensure that 95 percent of applicable new contract actions meet federal mandates for acquiring products that are energy efficient, water efficient, biobased, environmentally preferable, non-ozone depleting, recycled content, or are non-toxic or less toxic alternatives, where these products meet performance requirements. To monitor performance, agencies perform quarterly reviews of at least 5 percent of applicable new contract actions to determine if sustainable acquisition requirements are included.

**Table 6: Goal 6 Strategies – Sustainable Acquisition**

INSTRUCTIONS: In Table 6 below, list ONLY the top five priority strategies that the agency will pursue in FY15 to achieve Goal 6. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable (“N/A”) or “No”, an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is “Yes”, provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY15 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) <b>Will the agency implement the following strategies to achieve this goal?</b>	(B) <b>Top Five? Yes-No- N/A</b>	(C) <b>Strategy Narrative</b>  (100 word limit)	(D) <b>Specific targets/metrics to measure strategy success including milestones to be achieved in next 12 months</b>
<p><b>EXAMPLE</b></p> <p>Include biobased and other FAR sustainability clauses in all applicable construction and other relevant service contracts.</p>	<p>Yes</p>	<p>Include FAR requirements for energy efficient, recycled, biobased and other relevant sustainability factors in all new contract actions and conduct quality assurance review after award.</p>	<p>In FY15 relative to FY13, increase purchases of biobased by 10 percent; increase energy efficient product purchases by five percent; increased recycled content purchases by 15 percent.</p>
<p>1. Update and deploy agency procurement policies and programs to ensure designated federally mandated sustainable products are included in all relevant procurements and services.</p>	<p>Yes</p>	<p>TVA will continue to review and provide necessary updates to procurement policies and programs to ensure designated federally mandated sustainable products are included in all relevant contracts where appropriate and practical.</p>	<p>In FY 2015 TVA will review Sustainable Acquisition activities with regard to reduced manpower resources and overhead cost reductions to determine most efficient ways to ensure compliance with federal obligations.</p>

<p>2. Deploy corrective actions to address identified barriers in an effort to increase sustainable procurements with special emphasis on biobased purchasing.</p>	<p>Yes</p>	<p>Increase sustainable acquisition purchases through enhanced training, meetings with business units, and developing task focused collaborations with internal stakeholders.</p>	<p>TVA will identify TVA commodity areas where sustainable procurements are most readily made. Promote increased purchases through buyer awareness and management oversight.</p>
<p>3. Include biobased and other sustainability clauses in all applicable and relevant clauses.</p>	<p>Yes</p>	<p>TVA will continue to promote the usage of checklists to ensure all applicable Request for Proposals and Request for Quotes as well as appropriate contracts, include biobased and sustainability clauses where appropriate and practical.</p>	<p>1) TVA will increase biobased purchases through enhanced training, buyer awareness and management oversight in Fiscal Year 2015.</p> <p>2) TVA will review purchase order transactions coded as green products to verify that sustainable acquisition criteria is being met.</p>
<p>4. Review and update agency specifications to include and encourage biobased and other designated green products to enable meeting sustainable acquisition goals.</p>	<p>Yes</p>	<p>TVA will continue to review and provide necessary updates to procurement policies and programs to ensure federally mandated biobased products are included in relevant contracts where appropriate and practical.</p>	<p>1) TVA will seek out opportunities to pilot the use of biobased products where possible.</p> <p>2) TVA will review purchase order transactions coded as green products to verify sustainable acquisition criteria is being met.</p>

<p>5. Use Strategic Sourcing Initiatives, such as Blanket Purchase Agreements for office products and imaging equipment, which include sustainable acquisition requirements.</p>	<p>Yes</p>	<p>TVA will continue outreach efforts and leverage partnerships with business development agencies to create awareness and identify ways to increase sustainable products, including biobased products, from small businesses.</p>	<p>TVA will continue to work with our Office Supply blanket contract holder and Printer Cartridge blanket contract supplier to ensure sustainable products are supplied whenever possible.</p>
<p>6. Report on sustainability compliance in contractor performance reviews.</p>	<p>N/A</p>	<p>TVA will conduct performance reviews for key Suppliers where appropriate and practical.</p>	<p>N/A</p>
<p>7. Implement an agency wide initiative which encourages source reduction and the procurement and wise usage of 30% to 100% recycled paper.</p>	<p>N/A</p>	<p>TVA intends to continue both its paper acquisition program and reduction pilot project to also support biobased purchases, as well as the agency's recycling goals.</p>	<p>N/A</p>

## APPENDICES

**INSTRUCTIONS:** This section is optional. Agencies may, as appropriate, number and attach updated: Climate Adaptation Plan; Fleet Management Plan; Budget Requirements, and/or Biobased Purchasing Strategy.

## Goal 7: Electronic Stewardship & Data Centers

**PERFORMANCE REVIEW** on each goal area identified in the prior year's Sustainability Plan. The review should also include goal:

- a. **INTEGRATION** Goal 7 achievements contribute to and support Goal 2 - Building Energy Intensity and Goal 6 - Sustainable Acquisition.
- b. **EVALUATION MEASURES** TVA achieved 97% EPEAT and 98% Energy Star compliance. TVA is not yet 100% power management enabled. TVA accesses PC monitors that are actively power managed. TVA records shipments to Oak Ridge National Labs R2 certified recycling center.
- c. **SUCCESSSES** TVA purchased 6,887 environmentally preferred (EPEAT registered) PC's and monitors, printers, and TV's achieving a 97.4 percent EPEAT purchase rate (EPEAT goal is 95 percent). TVA donated or recycled 100 percent of its end-of-life electronic equipment using the R2 certified Oak Ridge National Lab facility. TVA uses agency-wide policies and procedures to procure and configure agency printers to print in duplex mode. In addition, print release (badged printing) has deployed 211 devices to date and is on track to surpass 300 devices by the end of FY2014.
- d. **CHALLENGES** Technical complexity, evolving infrastructure, economics, and agency security requirements have presented challenges regarding PC Power Management. TVA is not yet 100% power management enabled.
- e. **LESSONS LEARNED** To achieve our 97.4 percent plus EPEAT purchase rate, TVA IT initiated additional pre-purchase reviews by technical staff. The consolidation of data centers at TVA was not achievable due to the complexity of data center locations.
- f. **PLANNED ACTIONS.** TVA will invest in the newest, energy efficient "Haswell" processor technology to significantly reduce the power consumption of PC's while they are in use. TVA is also implementing a new strategy to consolidate and reduce the number of agency PC's while expanding the use of low power, thin client and mobile devices. Print release (badged printing) is in the implementation stage and being deployed across TVA as a more efficient alternative to current print management strategies. In addition, the managed print initiative will provide just in time consumable delivery and proactive device maintenance through a managed print provider to reduce TVA costs.

## Agency Progress toward EPEAT, Power Management and End of Life Goals

Executive Order (E.O) 13514 required agencies to promote electronics stewardship by: ensuring procurement preference for EPEAT-registered products; implementing policies to enable power management, duplex printing, and other energy-efficient features; employing environmentally sound practices with respect to the disposition of electronic products; procuring Energy Star and FEMP designated electronics; and, implementing best management practices for data center operations.

**Figure 7-1 (EXAMPLE)**

**Instructions:** Agencies should not amend or edit this figure. If changes are necessary, contact CEQ.

EPEAT	Power Management	End-Of-Life	Comments
			(1) 96.98% EPEAT Compliant (2) Not yet 100% Power Management compliant (3) 100% of Electronics at end-of-life disposed appropriately

### EPEAT

	95% or more Monitors and PCs/Laptops purchased in FY 2013 was EPEAT Compliant Agency-wide
	85-94% or more Monitors and PCs/Laptops purchased in FY 2013 was EPEAT Compliant Agency-wide
	84% or less Monitors and PCs/Laptops purchased in FY 2013 was EPEAT Compliant Agency-wide

### Power Management

	100% Power Management Enabled Computers, Laptops and Monitors Agency-wide
	90-99% Power Management Enabled Computers, Laptops and Monitors Agency-wide
	89% or less Power Management Enabled Computers, Laptops and Monitors Agency-wide

### End-of-Life

	100% of Electronics at end-of-life disposed through GSA Xcess, CFL, Unicor, USPS Recycling Program or Certified Recycler (R2, E-Stewards). <i>Submitted annual report to GSA for Federal Electronics Assets furnished to non-Federal recipients.</i>
	100% of Electronics at end-of-life disposed through GSA Xcess, CFL, Unicor, USPS Recycling Program and/or non-Certified Recycler. <i>Submitted annual report to GSA for Federal Electronics Assets furnished to non-Federal recipients.</i>



Less than 100% of Electronics at end-of-life disposed through GSA Xcess, CFL, Unicor, USPS Recycling Program or non-Certified Recycler. No annual report submitted to GSA for Federal Electronics Assets furnished to non-Federal recipients.

**Table 2-2: Goal 2 Strategies – Data Center Efficiency**

Section 3(a)(ii) of E.O. 13693 states that agencies must improve data center efficiency at agency facilities. Section 3(a)(ii)(C) requires that agencies establish a power usage effectiveness target in the range of 1.2-1.4 for new data centers and less than 1.5 for existing data centers.

**Instructions:** In Table 2-2 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 2. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
1) Ensure the agency chief information officer promotes data center energy optimization, efficiency, and performance 3(a)(ii)(A)	Yes	CIO will continue to promote improved data center energy efficiency through application rationalization which, in turn, will result in an overall reduction in server population.	Server population is currently being monitored. FY16 reductions will be verified against reductions in data center energy usage.
2) Install and monitor advanced energy meters in all data centers by fiscal year 2018 3(a)(ii)(B)	Yes	1) Metered Power Distribution Units (PDU's) are being installed as a part of the Data Center Information Management System (DCIMS) project.  2) Identify racks in the datacenter that are being monitored by obsolete PDUs or no PDUs	1) All PDUS's will be metered by the end of FY16  2) Install PDUs as necessary to monitor power utilization by FY16.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Recommended Strategy</b>			
EXAMPLE Improve data center temperature and air-flow management.	Yes	Measure existing data center ventilation rates and adjust rates to maintain adequate temperature and air flow will reducing energy usage.	Complete data center survey by August 2015 and implement revised ventilation procedures as soon as possible depending on scope of adjustment.
3) Optimize agency Data Centers across total cost of ownership metrics.	No	1) Goal is not clear, other items listed are focused on overall data center optimization.	N/A
4) Improve data center temperature and air-flow management.	Yes	1) This is an ongoing initiative in TVA IT. Cold-aisle containment is being pursued where possible as well as increasing the data center temperatures, as practical.  2) Leverage improved chiller plant being implemented in main campus that is 30% more efficient than current chiller plant.  3) Implement DCIM system to monitor power, heat and air.	1) Reduction in cooling usage will be measured for decrease.  2) Utilize data provided by DCIM system to improve temperature management by FY16  3) The new chiller plant operation is being closely monitored as it is being brought into production to validate efficiency estimates. Initial results indicate 30% reduction will be exceeded.
5) Identify and consolidate obsolete and underutilized agency computer servers into energy efficient data centers.	Yes	1) This is an ongoing TVA IT focus area that is associated with the application rationalization initiative mentioned previously in Goal 1 of page 2.  2) Conduct survey with development teams to identify applications using obsolete or underutilized hardware.	1) Identification of applications that can be consolidated/upgraded/retired will be complete by FY15. Upgrade, consolidation or retirement will be completed by FY16.
6) Implement Data Center Information Management Software (DCIMS) to provide increased visibility into data center energy usage.	Yes	1) DCIMS is currently being implemented to provide increased visibility into energy usage in the data center.	1) Completion of DCIMS project is anticipated to take place in FY16.

# Goal 9: Electronic Stewardship

## Agency Progress on Electronic Stewardship

E.O. 13693 section 3(l) requires that agencies promote electronics stewardship and requires ensuring procurement preference for environmentally sustainable electronic products as established in section 3(i);

- (ii) establishing and implementing policies to enable power management, duplex printing, and other energy-efficient or environmentally sustainable features on all eligible agency electronic products; and
- (iii) employing environmentally sound practices with respect to the agency's disposition of all agency excess or surplus electronic products.

### Table 9: Goal 9 Strategies – **Electronic Stewardship**

**Instructions:** In Table 9 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 9. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
1) Establish, measure, and report procurement preference for environmentally sustainable electronic products 3(l)(i)	Yes	1) Review current processes/measures in place to ensure compliance. Currently, non-standard orders are reviewed by team and alternative options provided.  2) Continued purchase of EPEAT registered devices.	95% or greater of eligible IT assets are EPEAT registered.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
2) Establish, measure, and report policies to enable power management, duplex printing, and other energy-efficient or environmentally sustainable features on all eligible agency electronic products 3(1)(ii)	Yes	1) 75% of current TVA printers are defaulted to duplex printing. 2) Evaluating additional measures and strategies regarding Power Management that make business sense for TVA. 3) Evaluate current standard settings on deployed devices for additional efficiencies.	1) Upon completion of the Print Smart initiative, 100% of TVA devices will be defaulted to duplex printing. 2) Identification of additional power management efficiency gains. 3) Identification of any additional device default setting efficiency opportunities
3) Establish, measure, and report sound practices with respect to the agency's disposition of excess or surplus electronic products 3(1)(iii)	Yes	1) Redeploy devices with remaining useful life. 2) Donation of eligible devices, where practical. 3) When surplussing devices, use a certified eSteward and/or R2 electronics recycler.	100% of end of life devices disposed of appropriately. <i>*Not currently required to submit annual report to GSA for Federal Electronics Assets furnished to non-Federal recipients.</i>
<b>(A) Recommended Strategy</b>			
<b>EXAMPLE</b> Ensure that power management, duplex printing, and other energy efficiency or environmentally preferable options and features are enabled on all eligible electronics and monitor compliance.	Yes	(1) Revise agency policy requiring power management and duplex printing. (2) Initiate survey and corrective action program for agency printers to ensure all environmentally preferable features, including duplexing, are fully utilized.	(1) Complete policy revision by August 2015. (2) Complete survey of printers by February 2015. Complete resurvey of non-conformant printers by April 2015.

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
4) Update and deploy policies to use environmentally sound practices for disposition of all agency excess or surplus electronic products and monitor compliance.	Yes	Working to document current policy and processes for proper disposal of surplus for eligible electronic products.	Completion of documentation process by end of FY16.
5) Implementation of “ Print Smart” initiative to optimize printing at TVA.	Yes	<p>1) Implementation of Managed Print Services in TVA (Known as “TVA Print Smart”) will reduce number of overall devices and ensure all devices in fleet comply with sustainability guidelines.</p> <p>2) Implementation of Markvision Enterprise (i.e. enforces optimum print settings) will enable audits of TVA’s print fleet to ensure devices remain in compliance with sustainable print guidelines.</p> <p>3) Automated “Just in Time” toner delivery with self addressed envelope for used toner recycling</p> <p>4) Networked managed printers allow detailed reporting to educate end users on fiscal and environmental impacts.</p>	1) Print Smart implementation at TVA’s sites including all major generating and corporate environments.

## Goal 8: Renewable Energy

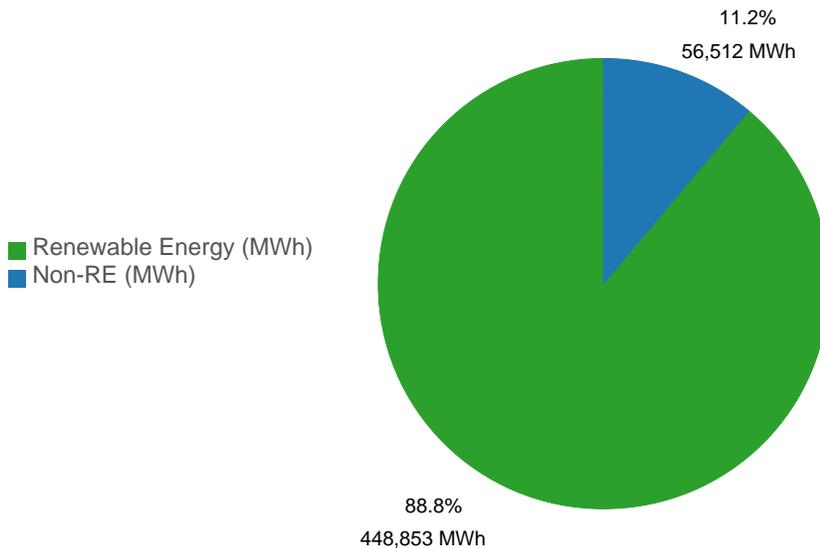
### Agency Renewable Energy Percentage of Total Electricity Usage

E.O. 13514 requires that agencies increase use of renewable energy. Further, EPACK 2005 requires agencies to increase renewable energy use such that 7.5 percent of the agency's total electricity consumption is generated by renewable energy sources for FY 2014 and beyond. For FY 2012, the required target was 5 percent of an agency's total electricity consumption. In 2013, a Presidential Memorandum entitled *Federal Leadership on Energy Management* revised the Federal agency target for agency renewable energy percentage of total electricity usage to reflect a goal of 20% by 2020.

### Figure 8-1: TVA Use of Renewable Energy as a Percentage of Electricity Use (FY 2014 Goal: 7.5%)

**Instructions:** Agencies should not amend or edit this figure. If changes are necessary, contact CEQ.

#### TVA Use of Renewable Energy as a Percentage of Electricity Use (FY 2014 Goal: 7.5%)



## **Goal 8: Renewable Energy**

### **a. INTEGRATION**

A large part of TVA's renewable energy used to meet its goal subject building energy reduction goal (Goal 2) and GHG targets (Goal 1) is the result of hydro modifications (HMODs), which are generated and used on-site. In addition to HMOD, TVA also purchases renewable energy credits (RECs) for its large office buildings through local power suppliers which participate in TVA's Green Power Switch Program. These REC purchases are budgeted and funded through TVA's facilities group, which also pays for utility bills.

### **b. EVALUATION MEASURES**

TVA's Reservoir Operations and Renewables Group implements and tracks HMOD improvements at its various hydro sites and provides HMOD data to the Internal Energy Management Program (IEMP). IEMP only uses a small portion of this available renewable energy, which combined with RECs meets the renewable goal. The TVA Renewables Group has purchased a dedicated database program to account for all renewable energy used both internally and externally by TVA customers to better account for all renewables.

### **c. SUCCESSES**

TVA well exceeded last year's renewable energy goal of 7.5 percent finishing at 11.2 percent for FY 2014. TVA is on track toward meeting the 20% by 2020 renewable energy goal established by the December 5, 2013 Presidential Memo.

### **d. CHALLENGES**

TVA does not anticipate any challenges in meeting the renewable energy goal.

### **e. LESSONS LEARNED**

TVA has recognized the need to evolve from the practice of using multiple spreadsheets for accounting of renewables to the use of a more efficient database program to track all renewables and streamline reporting.

### **f. PLANNED ACTIONS**

TVA plans to maintain its current progress and increase its use of HMODs as well as RECs to meet future goals.

## **Agency Strategies to Meet Goals of E.O. 13693**

To facilitate agency planning and reporting, the majority of the goals for E.O. 13693 take effect in the beginning of fiscal year 2016 (October 1, 2015) and are therefore appropriate for inclusion in this document. As noted previously many of the goals that agencies pursued under the previous executive orders have been carried over into E.O. 13693.

This section provides certain goal areas where "Required Strategies" are identified. Where an agency does not adopt those required strategies as an FY 2016 priority, the agency should explain the rationale for that decision in the strategy narrative. Also included are recommended strategies that represent strategies that have been successfully implemented by the Federal community and may also be adopted as priority strategies.

## Goal 3: Clean & Renewable Energy

### Agency Clean Energy Share of Total Electric and Thermal Energy Goal

E.O. 13693 3(b) requires that, at a minimum, the percentage of an agency's total electric and thermal energy accounted for by renewable and alternative energy shall be not less than: 10% in FY 2016-17; 13% in FY 2018-19; 16% in FY 2020-21; 20% in FY 2022-23; and 25% by FY 2025.

### Agency Renewable Energy Share of Total Electricity Consumption Goal

E.O. 13693 3(c) sets a second schedule that addresses specifically renewable energy. It requires that renewable energy account for not less than 10% of total electric energy consumed by an agency in FY 2016-17; 15% in FY 2018-19; 20% in FY 2020-21; 25% in FY 2022-23; and 30% by 2025.

### Table 3: Goal 3 Strategies – Clean and Renewable Energy

**Instructions:** In Table 3 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 3. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
DoD only: Include in DoD accounting, fulfillment of the requirements of DoD goals under section 2852 of the National Defense Authorization Act of 2007 3(e)(vi)	NA	NA	NA
<b>(A) Recommended Strategy</b>			
EXAMPLE Lease land for renewable energy infrastructure.	NA	Agency does not own any land that can be leased.	
Install agency-funded renewable on-site and retain corresponding renewable energy certificates (RECs) or obtaining replacement RECs 3(d)(i)	Yes	TVA will continue to make hydro modifications (HMODs) as this has proven to be cost-effective to the agency.	TVA will continue to work toward the 30% goal by FY 2025 by continuing to implement HMODs at its hydroelectric plants.

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
Contract for the purchase of energy that includes installation of renewable energy on or off-site and retain RECs or replacement RECs for the term of the contract 3(d)(ii)	No	Consider if needed.	NA
Purchase electricity and corresponding RECs or obtaining equal value replacement RECs 3(d)(iii)	No	Consider if needed.	NA
Purchase RECs 3(d)(iv)	Yes	Purchase RECs for its large office buildings where installing onsite renewable is not feasible.	TVA will continue to work toward the 30% goal by FY 2025 by continuing to purchase RECs for its large office buildings.
Install thermal renewable energy on-site at Federal facilities and retain corresponding renewable attributes or obtain equal value replacement RECs 3(e)(i)	No	Consider if needed.	NA
Install combined heat and power processes on-site at Federal facilities 3(e)(ii)	No	TVA will consider this strategy if presented with a viable project.	NA
Identify opportunities to install fuel cell energy systems on-site at Federal facilities 3(e)(iii)	No	Consider if needed.	NA
Identify opportunities to utilize energy from small modular nuclear reactor technologies 3(e)(iv)	No	TVA will consider this strategy if presented with a viable project.	NA
Identify opportunities to utilize energy from a new project that includes the active capture and storage of carbon dioxide emissions associated with energy generation 3(e)(v)	No	TVA will consider this strategy if presented with a viable project.	NA
Implement other alternative energy approaches that advance the policy set forth in section 1 and achieve the goals of section 2 of E.O. 13693 3(e)(vii)	No	Consider if needed.	NA
Consider opportunities to install or contract for energy installed on current or formerly contaminated lands, landfills, and mine sites.	No	Consider if needed.	NA

## Goal 9: Climate Change Resilience

### Agency Climate Change Resilience

#### a. INTEGRATION

The Goal of TVA's Adaptation Planning process is to ensure the Agency continues "to achieve its mission and program goals and to operate in a secure, effective and efficient manner in a changing climate." TVA has, in accordance with the goals and directives of EO 13514, EO 13653 and EO 13693, updated its Statement on Climate Change Adaptation Plan in CY14. TVA has updated its Statement on Climate Change Adaptation and its Adaptation Action Plan consistent with the Third National Climate Assessment and the December 19 2013 guidance, preparing Federal Agency Climate Change Adaptation Plans in Accordance with EO 13653.

TVA utilizes its environmental management processes to direct our efforts to understand, prepare for, and respond to how climate change may impact its mission, programs, and operations. Its primary planning processes are the Agency's Integrated Resource Plan (IRP) and its Natural Resources Plan (NRP). As a Federal agency, TVA must also comply with the National Environmental Policy Act (as well as applicable Executive Orders).

#### b. EVALUATION MEASURES

Environmental goals are an integral part of TVA's business operations and are tracked with other business objectives.

#### c. SUCCESSES

TVA is continuing its Climate Change Sentinel Monitoring (CCSM) program started in April 2013, with 18 stations being monitored by TVA and partners throughout the Tennessee River watershed. TVA worked with the Southeast Monitoring Network to select long-term monitoring stations and establish agreed upon monitoring protocols for the program. The goal of the program is to assess potential biological, ecological, and hydrological responses of aquatic ecosystems related to climate change. This program will assist TVA's compliance with EO 13653 and 13693 that direct federal agencies to participate in a nationally integrated strategy toward sustaining quality of life considering risks related to climate change. Further, CCSM is a component of TVA's Natural Resources Plan, which outlines TVA's resource stewardship responsibilities for the future.

TVA continued its efforts to ensure climate change adaptation is integrated into both agency-wide and regional planning efforts, in coordination with other Federal agencies as well as state and local partners, Tribal governments and private stakeholders. TVA also continued its implementation of its Internal Energy Management Program.

#### d. CHALLENGES

TVA currently participates in the Federal Climate Change Adaptation Community of Practice as well as the Interagency Forum on Climate Change Impacts and Adaptations. We continue to participate in and monitor Federal agency climate change adaptation activities to identify and integrate best adaptation management practices and metrics.

## **e. LESSONS LEARNED**

TVA routinely faces weather-related challenges such as ice storms in winter and thunderstorms with tornadoes in summer. We manage our transmission system using Storm hardening, designing our infrastructure to make it less susceptible to damage from extreme storm activity, and storm resiliency, measures to enhance the ability of an energy system to recover quickly from damage. TVA also manages rain events that could cause flooding through integrated river management. River schedulers monitor weather conditions, water quality, water availability and demand — all with the goal of routing water through the river system to provide the most public value given changing weather conditions and water needs.

Since its inception, TVA’s mission has included resilience management activities. TVA issued its first *Climate Change Adaptation Plan* in 2012 and updated it consistent with the Third National Climate Assessment in 2014 as part of its major planning processes--especially our current Integrate Resource Plan which included temperature and precipitation forecasts that predict electric loads, plant operations, potential maximum flooding, etc. More specific decisions and projects include eliminating power generation wet fly ash systems and retiring coal plants and replacing them with gas combined cycle significantly reduce water use.

## **f. PLANNED ACTIONS**

While we have been engaged as a Federal agency in adaptation planning activities for some time, similar industry groups are beginning to emerge. In 2015, TVA joined the Department of Energy’s Partnership for Energy Sector Climate Resilience, an initiative to enhance energy security by improving the resilience of energy infrastructure to extreme weather and climate change impacts. The goal is to accelerate investment in technologies, practices, and policies that will enable a resilient 21st century energy system. Under this Partnership, owners and operators of energy assets will develop and pursue strategies to reduce climate and weather-related vulnerabilities. Collectively, the Partners and the Department of Energy will develop resources to facilitate risk-based decision making and pursue cost-effective strategies for a more climate-resilient U.S. energy infrastructure.

of schedule.

## **Agency Strategies to Meet Goals of E.O. 13693**

To facilitate agency planning and reporting, the majority of the goals for E.O. 13693 take effect in the beginning of fiscal year 2016 (October 1, 2015) and are therefore appropriate for inclusion in this document. As noted previously many of the goals that agencies pursued under the previous executive orders have been carried over into E.O. 13693.

This section provides certain goal areas where "Required Strategies" are identified. Where an agency does not adopt those required strategies as an FY 2016 priority, the agency should explain the rationale for that decision in the strategy narrative. Also included are recommended strategies that represent strategies that have been successfully implemented by the Federal community and may also be adopted as priority strategies.

## Goal 10: Climate Change Resilience

**Table 10: Goal 10 Strategies – Climate Change Resilience**

**Instructions:** In Table 10 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 10. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
Update agency external programs and policies (including grants, loans, technical assistance, etc.) to incentivize planning for, and addressing the impacts of, climate change. (In column C, identify names of agency programs or policies)	Yes	TVA continues to develop its public engagement programs to increase public awareness and to promote opportunities for involvement, education, financial/resource assistance and collaborative partnerships. The TVA Board also established a Regional Resource Stewardship Council (RRSC) and a Regional Energy Resource Council (RERC) under the Federal Advisory Council Act. External stakeholder coordination processes are utilized in the TVA Integrated Resource Plan, Natural Resource Plan and NEPA processes.	TVA is participating in the DOE Energy Resilience Partnership and will utilize this process to identify best practices which can then be further communicated to TVA public engagement programs.
<b>(A) Recommended Strategy</b>			
EXAMPLE Update agency emergency response procedures and protocols to account for projected climate change, including extreme weather events.	No	Agency already updated emergency response plans in FY 2013 to account for extreme weather events. No new updates are anticipated in FY 2015.	

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
Update agency emergency response procedures and protocols to account for projected climate change, including extreme weather events.	No	No	
Ensure workforce protocols and policies reflect projected human health and safety impacts of climate change.	No	No	
Update agency external programs and policies (including grants, loans, technical assistance, etc.) to incentivize planning for, and addressing the impacts of, climate change.	Yes	TVA continues to develop its public engagement programs to increase public awareness and to promote opportunities for involvement, education, financial/resource assistance and collaborative partnerships. The TVA Board also established a Regional Resource Stewardship Council (RRSC) and a Regional Energy Resource Council (RERC) under the Federal Advisory Council Act. External stakeholder coordination processes are utilized in the TVA Integrated Resource Plan, Natural Resource Plan and NEPA processes.	TVA is participating in the DOE Energy Resilience Partnership and will utilize this process to identify best practices which can then be further communicated to TVA public engagement programs.
Ensure agency principals demonstrate commitment to adaptation efforts through internal communications and policies.	Yes	TVA just completed an additional reorganization and will continue to review the high-level process map created in FY13 and continue to identify internal processes to coordinate internal adaptation planning with stakeholders	Updated process maps and applicable policies.
Identify vulnerable communities that are served by agency mission and are potentially impacted by climate change and identify measures to address those vulnerabilities where possible.	No	No	

<b>(A) Strategy</b>	<b>(B) Top Five? Yes/No/NA</b>	<b>(C) Strategy Narrative (100 word limit)</b>	<b>(D) Specific targets/metrics to measure success including milestones in next 12 months</b>
Ensure that agency climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary.	Yes	TVA will continue the TVA NRP Climate Sentinel Monitoring Program. TVA will also continue to review and participate in the National Climate Assessment process and incorporate its findings	NRP Climate Sentinel Monitoring Program Reporting  Continued participation in the National Climate Assessment process.
Design and construct new or modify/manage existing agency facilities and/or infrastructure to account for the potential impacts of projected climate change.	Yes	Continued Implementation of TVA's Internal Energy Management Program	Continued Implementation of TVA's Internal Energy Management Program
Incorporate climate preparedness and resilience into planning and implementation guidelines for agency-implemented projects.			
Ensure climate change adaptation is integrated into both agency-wide and regional planning efforts, in coordination with other Federal agencies as well as state and local partners, Tribal governments, and private stakeholders.	Yes	TVA continues to develop its public engagement programs to increase public awareness and to promote opportunities for involvement, education, financial/resource assistance and collaborative partnerships. The TVA Board also established a Regional Resource Stewardship Council (RRSC) and a Regional Energy Resource Council (RERC) under the Federal Advisory Council Act. External stakeholder coordination processes are utilized in the TVA Integrated Resource Plan, Natural Resource Plan and NEPA processes.	TVA is participating in the DOE Energy Resilience Partnership and will utilize this process to identify best practices which can then be further communicated to TVA public engagement programs.

the E.O.

## Goal 10: Energy Performance Contracts

### Agency Progress in Meeting President's Performance Contracting Challenge (PPCC) Goal

Energy Performance Contracts, including both Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs), enable agencies to obtain energy efficiency investments in buildings and deploy on-site renewable energy through long-term contracts with the private sector, which are in turn paid through savings derived from those investments.<sup>1</sup>

### Figure 10-1: TVA Progress in Meeting President's Performance Contracting Challenge (PPCC) Goal

**Instructions:** Agencies should not amend or edit this figure. If changes are necessary, contact CEQ.

The chart below (left) represents the agency's performance contracting commitment and progress toward that commitment as reported through April 15, 2014 (for agencies subject to the 2011 President's Performance Contracting Challenge). The bar graph shows the total dollar value (in millions) of (1) already awarded projects, (2) projects in the pipeline but not yet awarded, and (3) the pipeline shortfall or surplus depending on whether the agency has reached their commitment goal.

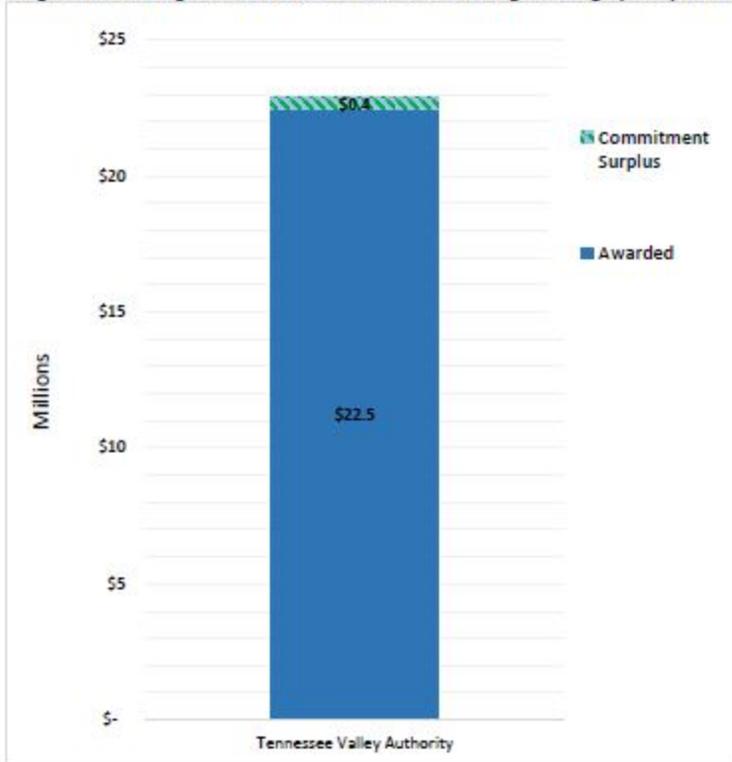
Note: All agencies were expected to meet or exceed their initial target no later than June 30, 2014.

Note: The chart below (right) will only appear on DoD's Sustainability Plan Template.

---

<sup>1</sup> Goal 10 section is relevant only to agencies subject to the PPCC.

**Figure 10-1: Tennessee Valley Authority  
Progress in Meeting President's Performance Contracting Challenge (PPCC) Goal**



Note: This chart indicates agency progress toward the 2016 Performance Contracting goal as of April 15, 2015.

## Goal 10: Energy Performance Contracts

### a. INTERGRATION

TVA, as an energy provider, has its own Federal Energy Services Program that provides Utility Energy Service Contracts (UESC) to Federal direct serve and Federal non-direct serve customers in its region at special request by the local power distributor. As such, TVA recognizes the value in these contracts and has chosen to self-fund its own projects to provide more value. TVA receives no appropriations and uses revenue from power sales to self-fund energy, water and sustainability projects to meet Goals 1, 2 and 4.

### b. EVALUATION MEASURES

TVA tracks its projects through its Internal Energy Management Program and reports its progress in meeting Goal 10 through MAX Collect and the EISA 432 Compliance Tracking System.

### c. SUCCESSES

TVA awarded \$22.9 million toward its 2016 performance contracting target of 22.5 million, exceeding its initial and revised targets and meeting the Presidential challenge ahead of schedule. TVA met its commitment through the implementation of projects identified by its energy, water, sustainability surveys.

### d. CHALLENGES

TVA's cost cutting efforts has made funding energy, water and sustainability projects more difficult. Moving forward TVA may have to rely on projects funded by other TVA business units that carry budget for renovations, operation and maintenance, and modernization efforts. Projects covered under general operations are ranked for economic benefit and compared to other TVA projects to determine funding availability. The biggest challenge will be influencing and capturing the energy and water benefits of these projects.

**e. LESSONS LEARNED**

TVA is self funding projects instead of utilizing ESPCs to implement projects and does not have any lessons learned to report.

**f. PLANNED ACTIONS**

TVA as a provider of utility based ESPCs will continue to self-fund its own energy, water and sustainability projects. TVA has met its 2016 performance contracting targets ahead of schedule.

## **Agency Strategies to Meet Goals of E.O. 13693**

To facilitate agency planning and reporting, the majority of the goals for E.O. 13693 take effect in the beginning of fiscal year 2016 (October 1, 2015) and are therefore appropriate for inclusion in this document. As noted previously many of the goals that agencies pursued under the previous executive orders have been carried over into E.O. 13693.

This section provides certain goal areas where "Required Strategies" are identified. Where an agency does not adopt those required strategies as an FY 2016 priority, the agency should explain the rationale for that decision in the strategy narrative. Also included are recommended strategies that represent strategies that have been successfully implemented by the Federal community and may also be adopted as priority strategies.

## Goal 8: Energy Performance Contracts

### Agency Progress on Energy Performance Contracting

E.O. 13693 section 3(k) requires that agencies implement performance contracts for Federal buildings. E.O. 13693 section 3(k)(iii) also requires that agencies provide annual agency targets for performance contracting to be implemented in FY 2017 and annually thereafter as part of the planning of section 14 of this order.

### Table 8: Goal 8 Strategies – Energy Performance Contracting

**Instructions:** In Table 8 below, list ONLY the top five priority strategies that the agency will pursue in FY 2016 to achieve Goal 8. For each agency-level strategy listed below, select the appropriate response from the drop-down menu. If the selection is not applicable ("NA") or "No", an explanation must be provided in the Strategy Narrative column (C) as to why the agency will not implement this strategy. If the selection is "Yes", provide in column (C) a description on how the strategy will be implemented and in column (D) provide specific targets/metrics and milestones to measure agency progress/success. DO NOT DELETE ANY STRATEGIES LISTED IN COLUMN (A). Agencies may make minor changes to a column (A) strategy if needed to enable the agency to select that strategy as a FY 2016 priority. If necessary, agencies may add additional strategies into the blank rows provided in column (A) in order to present five priority strategies.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Required Strategy under E.O. 13693</b>			
Utilize performance contracting to meet identified energy efficiency and management goals while deploying life-cycle cost effective energy and clean energy technology and water conservation measures 3(k)(i)	Yes	TVA, as an energy provider, has its own Federal Energy Services Program that provides Utility Energy Service Contracts (UESC) to Federal direct serve and Federal non-direct serve customers in its region at special request by the local power distributor. As such, TVA recognizes the value in these contracts and has chosen to self-fund its own projects to provide more value.	TVA as a provider of utility based ESPCs will continue to self-fund its own energy, water and sustainability projects.
Fulfill existing agency performance contracting commitments towards the \$4 billion by the end of calendar year 2016 goal established as part of the GPRA Modernization Act of 2010, Climate Change Cross Agency Priority process 3(k)(ii)	Yes	TVA has committed to awarding \$22.5 million in energy, water and sustainability projects toward the 2016 performance contracting goal.	TVA has met its 2016 performance contracting targets ahead of schedule by awarding \$22.9 million and will continue to implement cost effective projects as part of its normal business planning process.

(A) Strategy	(B) Top Five? Yes/No/NA	(C) Strategy Narrative (100 word limit)	(D) Specific targets/metrics to measure success including milestones in next 12 months
<b>(A) Recommended Strategy</b>			
EXAMPLE Evaluate all buildings over 50,000 sq. ft. for use with energy performance contracts	No	Agency already performed audits of all large buildings to reveal those with the greatest potential energy and cost savings	
Evaluate 25% of agency's most energy intensive buildings for use with energy performance contracts	Yes	TVA's Internal Energy Management Program will lead the EISA energy and water surveys to identify cost-effective measures that may be implemented.	Complete surveys that total 25% of TVA's most energy intensive buildings.
Prioritize top ten projects which will provide greatest energy savings potential	Yes	TVA will continue to prioritize projects that have the greatest energy savings potential. This strategy has been used in the past to help efficiently allocate funds to the best projects.	Maintain an updated list of potential conservation measures identified through ongoing surveys.
Cut cycle time of performance contracting process by at least 25%	NA	Consider if needed.	NA
Assign agency lead to participate in strategic sourcing initiatives	NA	Consider if needed.	NA
Devote 2% of new commitments to small buildings (<20k sq. ft.)	NA	Consider if needed.	NA
Identify and commit to include 3-5 onsite renewable energy projects in energy performance contracts	NA	Consider if needed.	NA
Ensure relevant legal and procurement staff are trained by FEMP ESPC/ UESC course curriculum	NA	Consider if needed.	NA
Provide measurement and verification data for all awarded projects	NA	Consider if needed.	NA
Enter all reported energy savings data for operational projects into MAX COLLECT (max.gov)	Yes	TVA will continue to input energy savings for ESPC projects that are implemented as part of its commitment.	Input energy savings from ESPC projects into MAX COLLECT.

he E.O.