



Broadcasting Board of Governors

FY 2014 Strategic Sustainability Performance Plan

June 26, 2014

Prepared By: Clement Heincer, Network Support Branch (T/EOS/N),
cheincer@bbg.gov, 202-382-7363

Reviewed By: Mark Filipek, Director, Operations & Stations Division (T/EOS),
Senior Sustainability Officer, mfilipek@bbg.gov, 202-382-7359

Policy Statement

BROADCASTING BOARD OF GOVERNORS
INTERNATIONAL BROADCASTING BUREAU

June 26, 2014

SUBJECT: Policy and Strategy for Implementing EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, October 5, 2009

The mission of the Broadcasting Board of Governors (BBG) is to inform, engage and connect people around the world in support of freedom and democracy. The BBG is an independent Federal Government agency that oversees U.S. civilian international media. It distributes programming in 61 languages to more than 100 countries via radio (shortwave, medium wave (AM), FM and satellite), terrestrial and satellite TV, the web, live streaming, mobile devices, and social media to unprecedented weekly global audiences of more than 206 million people in 2014.

As an agency of the Federal Government, the BBG is committed to complying with environmental and energy statutes, regulations, and executive orders (EOs). In addition, the BBG is committed to developing a better understanding of the effects of climate change, and addressing climate change adaptation.

In keeping with this commitment, the BBG has prepared an executive summary highlighting the successes it achieved and the challenges it faced in implementing its Strategic Sustainability Performance Plan. The executive summary also highlights the BBG's plans for strategic sustainability in the future. Though a small agency, we will continue to explore and implement various strategies over the next several years that, if successful, will improve the BBG's energy posture and enable it to better meet the challenging goals established by EO 13514.

Sincerely,



Mark Filipek
Director, Operations & Stations Division
Office of Technology, Services and Innovation
Senior Sustainability Officer

EXECUTIVE SUMMARY

The Broadcasting Board of Governors (BBG), in accordance with the U.S. International Broadcasting Act of 1994 (as amended), oversees U.S. civilian international media. The BBG distributes programming in 61 languages to more than 100 countries via radio (shortwave, medium wave (AM), FM and satellite), terrestrial and satellite TV, the web, live streaming, mobile devices, and social media to unprecedented weekly global audiences of more than 206 million people in 2014.

1. LEADERSHIP:

The BBG consists of Federal and non-Federal elements. The Federal element includes the International Broadcasting Bureau (IBB) with its broadcasting organizations, the Voice of America (VOA) and the Office of Cuba Broadcasting (OCB). The IBB manages program distribution and marketing for the Agency and provides administrative support for VOA and OCB.

The Agency uses a decentralized approach to integrate energy management into its policy, planning, and budget processes. For this reason, the Agency has not assigned specific individuals to an Agency energy team; however, the Agency's Strategic Sustainability Performance Plan identifies staff responsibilities for implementing the various aspects of its energy management program. The following are key staff positions involved in this process:

- a. Within the IBB, the *Office of Technology, Services and Innovation (TSI)* manages a broad range of technical and infrastructure functions, including delivering program content for all BBG networks and providing information technology support to many offices throughout the Agency. TSI strives to distribute BBG content in the most cost-effective and efficient manner possible. It manages more than 90 transmitting sites worldwide that deliver shortwave, medium wave, FM, and TV broadcasts. TSI also leases broadcast time at 17 transmitting sites in 12 countries. TSI is also responsible for coordinating BBG's strategic sustainability planning effort.
- b. Within TSI, the *Director, Operations & Stations Division (T/EOS)* is responsible for the day to day operations of the Agency's Transmitting Station Network, which is the Agency's largest user of electricity. For this reason, the T/EOS Director provides overall guidance and direction for the Agency's energy management program and serves as the Agency's *Senior Sustainability Officer (SSO)*. In order to accomplish this large endeavor, the Agency also tasked its senior managers to assist the SSO in implementing various portions of this plan.
- c. Within TSI, the *Director, Information Technology Directorate (T/I)* is the Agency lead for *Electronic Stewardship and Data Centers*.
- d. *Chief Financial Officer, Office of the Chief Financial Officer (CFO)* is the Agency lead for *Federal Employee Business Travel*.
- e. *Director, Office of Human Resources (OHR)* is the Agency lead for *Federal Employee Commuting*.
- f. *Director, Office of Contracts (CON)* is the Agency lead for *Sustainable Acquisition*.

2. PERFORMANCE REVIEW:

INTEGRATION: The Agency’s strategic plan and annual budgets address how the Agency will accomplish its mission in the future and the costs involved in these efforts. These documents do not address “strategic sustainability” directly; however, some of the actions addressed in these documents will have a direct impact on the Agency’s future “strategic sustainability” profile. While these documents talk in terms of anticipated efficiencies and costs savings, it also is anticipated that a number of these actions will improve the Agency’s overall energy profile.

EVALUATION MEASURES: The SSO evaluates the Agency’s success in meeting its goals, and refines the process, if required, based on an assessment at the end of each fiscal year.

SUCSESSES: Although we are a relatively small Agency, we continue to work at improving our energy and environmental sustainability posture, and our successes demonstrate our commitment to the strategic sustainability process. Some of the Agency’s achievements in FY 2013 and FY 2014 (to date) are listed below.

a. Greenhouse Gas (GHG) and Energy:

Currently, the Agency is on track to meet its overall goals for reducing both Scope 1&2 GHG and Scope 3 GHG emissions. For FY2013, the Agency reduced its total Scope 1&2 GHG emissions, subject to the GHG reduction target, by 15.7% when compared to FY 2012, and by 31% when compared to the FY 2008 baseline. The Agency also reduced its total Scope 3 GHG emissions, subject to the GHG reduction target, by 10.1% when compared to FY 2012, and by 21.3% when compared to the FY 2008 baseline. The total Scope 1, 2, and 3 GHG emissions combined was reduced by 15% when compared to FY 2012 and by 29.9% when compared to FY 2008.

Botswana: The station replaced 10 split-unit single room air conditioners that were over 15 years old with inverter type air conditioners, which are 30-40% more efficient.

Greenville, NC: The station upgraded its Caterpillar 3516 diesel generator to meet EPA guidelines. This project required a retrofit of the generator’s exhaust system. In addition, the station installed automated lighting controls in six offices and bathrooms within the transmitter building.

Philippines: The station changed the types of lights used on its antenna towers. It replaced 21 old 620-watt beacon lights with 20-watt LED beacon lights and 50 old 111-watt obstruction/side lights with 6-watt LED obstruction lights. By making this change, the station anticipates reducing the amount of energy used for this purpose by 95%. In addition, the station replaced an old 100 ton air conditioning unit with two 50-ton, energy efficient, chilled water air handlers.

Sri Lanka: The station installed solar powered streetlights to illuminate a dark area on its North perimeter road, which has helped with security patrolling of that area. By using solar powered street lights instead of conventional sodium vapor street lights, the station expects an energy cost savings of approximately \$2,000 per year.

Thailand: The station received permission to evaluate the impact of “black heating” a transmitter’s filaments when a SW transmitter was off the air. The purpose of the evaluation was to identify possible energy savings and determine the effect, if any, “black heat” had on the operation of the transmitter. The station has been testing this mode on one of its SW transmitters since March 2013 and calculates that 50kw of power are saved for each hour of “black heating” vice operating the transmitter in full standby.

To date, there has been no filament or other tube failures in the transmitter. Assuming an average down time of seven hours per day, electrical power consumption is reduced by 350kWh per day with an annual power reduction estimated at 127,400kWh per year. Based on the success of the station's "black heat" tests, in December 2013, the station was authorized to implement "black heat" on its other six SW shortwave transmitters. In addition, the station replaced the beacons and side lights on three towers at its medium wave transmitter site with energy efficient LED tower lights and flashing beacons.

b. Fuel:

The Agency is on track to meet its petroleum reduction goal for FY 2020. In addition, the agency will no longer use aviation fuel as it has decided to discontinue the use of aircraft in its broadcasting efforts.

Philippines: The station has reduced antenna field tractor mowing from approximate 912 acre, down to a concentrated 111 acres surrounding critical areas such as under hi-tension wires, around guy wire anchors and perimeter road shoulders. In addition, mowing frequency has also been reduced to approximately four times per year.

c. Water:

Botswana: Potable water for the station is purchased from the local water utility. In FY 2013, the station began drawing non-portable water from a well located at its medium wave transmitter site to water the landscape and clean the facilities around the site. This same well water is now being transported by a tractor with a water trailer to the station's short wave transmitter site and administrative area to be used for these same purposes. This project has helped the station to reduce its potable water use and lower its water bill.

Northern Marianas Islands: The station takes advantage of its tropical setting by obtaining the water it needs for industrial purposes from its water catchment system.

Philippines: The station reduced the potable water used at its Tinang site by reducing its landscape watering from three times per week to once a week. This change was made in 2013, and will reduce potable water consumption by approximately 1.4% or 13,720 gallons yearly.

d. Employee Commuting:

To support the Executive Order and further reduce our Greenhouse Gas (GHG) emissions, the BBG continues to encourage use of mass transit by employees. The Agency provides a transit subsidy for qualified employees at the highest pre-tax amount allowable.

BBG continues to promote and expand its Telework Program despite the limitations presented by its broadcasting mission, which requires employees' presence in the studio for broadcasts.

To decrease the number of cars on highways, the Agency allows eligible employees to work a compressed work schedule, which reduces the number of days each week that an employee must report to work.

The Agency also provides parking for its workforce that commutes to work in carpools and provides bicycle racks for employees who pedal to work.

e. Electronics Stewardship & Data Centers:

FY13 Accomplishments:

- Started Windows 7 upgrade for VOA which provided a more modern, reliable and secure operating system – New operating system provides additional power saving options.
- Continued deployment of larger wide screen monitors – Replacing CRT monitors with LCD.
- Continued refresh of workstations, printers, and network devices for a number of VOA News Bureaus and IBB relay stations – Upgraded equipment with better power handling features.
- Began migration of Dalet audio production system from version 5.1e to Dalet Radio Suite HD. This will allow for a movement of all servers to virtualized platforms.
- Continued to make significant progress toward standing up the new Cisco Nexus network core – New switches have better energy consumption rates and will ultimately lead to fewer switches being deployed.
 - Installed Nexus equipment across three datacenters
 - Prepared to interconnect to the legacy core and start migrating the Agency network
- Continued migrating a number of end-user switches to faster, more energy efficient Cisco 4510 switches. This includes a migration in the VOA News Center which allowed IT to go from three switches to a single switch and wiring closet 1-9 which allowed for consolidation of two switches into a single switch.
- Did the initial install of 2 HP P4800s into 2 datacenters – Allows for server consolidation and future desktop virtualization.
- Retired and disposed of 35 servers through virtualization or consolidation of services.
- Migrated ListServ services over to Cloud based Outlook services eliminating in-house servers.

FY14 Accomplishments (to date):

- Continued Windows 7 upgrade for VOA which provided a more modern, reliable and secure operating system – new operating system provides additional power saving options.
- Continued deployment of larger wide screen monitors – Replacing CRT monitors with LCD.
- Continued refresh of workstations, printers, and network devices for a number of VOA News Bureaus and IBB relay stations – upgraded equipment with better power handling features.
- Continued migration of Dalet audio production system from version 5.1e to Dalet Radio Suite HD. This will allow for a movement of all servers to virtualized platforms.
- Continued to make significant progress toward standing up the new Cisco Nexus network core – New switches have better energy consumption rates and will ultimately lead to fewer switches being deployed.
 - Installed Nexus equipment across three datacenters
 - Prepared to interconnect to the legacy core and start migrating the Agency network
- Continued migrated a number of end-user switches to faster, more energy efficient Cisco 4510 switches.
- Installed 4 additional HP P4800s into 2 datacenters – Allows for server consolidation and future desktop virtualization.
- Retired and disposed of 25 servers through virtualization or consolidation of services.
- Began migration of PII data domain to a secure virtualized infrastructure on the P4800 platform eliminating antiquated physical servers.
- Began VDI infrastructure deployment to allow teleworkers to work from home securely.

f. Sustainable Acquisitions:

All new purchase cardholders and approving officials are advised in face to face discussions that Energy Star and other energy efficient and low standby power products must be considered when purchasing electronics and appliances with the Government Purchase Card (GPC). The requirement is also in our Purchase Card Training Manual under “Tips for Buying Green”. When cardholders request approval or advice for purchase of electronics or appliances, the Office of Contracts reminds the cardholder of the requirements in the training manual.

CHALLENGES:

a. Realignment of the Broadcast Infrastructure:

Currently, the Agency’s major transmitting facilities, which transmit the Agency’s broadcasts, are located worldwide and are aging, and use large shortwave and/or medium wave (AM) radio transmitters. This technology, while critical to the Agency’s success in the past, no longer meets the challenge of broadcasting in the 21st Century. The following excerpt from the Agency’s strategic plan captures the direction in which the Agency is now proceeding:

“Strategy #5: Rationalize Program Delivery

Across the world, commercial, cable and satellite TV and FM radio stations continue to proliferate. TV remains by far the world’s dominant medium for news and entertainment. The Internet continues to grow. Social media usage is increasing exponentially. Ownership of mobile phones has reached near saturation levels in even the poorest countries. It is essential that we reach audiences on their preferred media platforms. Yet the Agency’s distribution methods and means have not strategically tracked the shifts in media use. We must therefore align how we deliver our content with how consumers now access it. In the process, we must correct mismatches in resource allocations and redirect funds to support today’s most effective distribution systems. This effort is to be research-driven but with close attention to intangibles such as the limitations in knowing in some countries how effective certain distribution methods are. Ultimately, the Agency is platform-agnostic. We seek to do what works best for the market at hand to get our content to as many users as possible...”

In light of the above, the Agency is making wholesale changes in how it distributes its content. In the future, it will use shortwave to broadcast to the half-dozen or so countries where it makes sense to do so, while reallocating its resources to the more effective broadcast platforms. In support of this transition, the Agency’s states in its FY 2015 budget that TSI will continue “... to move away from less effective legacy distribution systems, such as shortwave and medium wave transmission, toward use of more modern technologies, where appropriate, to reach larger and younger audiences. Where shortwave remains important, TSI is building a more cost-effective transmission infrastructure to support continuing broadcast requirements.”

In this fluid environment, it will take some time to determine which transmitting facilities will remain operational for the foreseeable future and which enhancements to their infrastructure are appropriate to improve their strategic sustainability. At this time, developing a realistic plan to achieve strategic sustainability is difficult and will remain difficult until the full extent of the realignment of the transmitting facilities is known. Once this information becomes available, the strategic sustainability planners will be able to focus on improving those facilities that will remain active in the Transmitting Station Network.

b. Maintaining the Current Infrastructure:

As stated earlier, the Agency has an aging infrastructure that needs to be maintained, even though many of these facilities are being considered for reduced missions or closure in the future. The Agency's FY 2015 budget submission acknowledges that "Critical broadcasting equipment and structures at remote locations, often exposed to extreme and corrosive environments, require regular upkeep and maintenance to prevent catastrophic breakdowns." The corrosion primarily is caused by salt and moisture, as much of this equipment is located near the sea. In one location, the corrosion is caused by exposure to industrial (smelting plant) pollution.

Funding for maintenance & repair (M&R) projects at the transmitting stations, which affects strategic sustainability, has been limited for a number of years. This situation coupled with the environmental conditions at the various sites has forced the Agency to spend most of its funding on maintaining its large antenna systems. To compound matters, since FY 2013, this effort has been severely hampered due to extensive storm damage sustained by two of our sites. The winds from these storms caused significant damage, with the antenna systems suffering the worst. Funding for these repairs has been estimated to be approximately \$3.0 million. Because of this situation, only high priority M&R actions are being undertaken elsewhere.

Besides funding, age is also a factor in the Agency's ability to maintain its facilities, and to make sustainability gains. A recent evaluation conducted by an architectural and engineering (A&E) firm at our Greenville Transmitting Station located in North Carolina concluded that the station cannot be brought into 100% compliance with the Guiding Principles for sustainable buildings due to the age of the facility and the amount of funds that would be required to obtain this objective.

c. Business Travel:

The BBG supports United States national interests through our mission to inform, engage and connect people around the world in support of freedom and democracy. Both air and ground travel by employees is essential in accomplishing these responsibilities.

The BBG works to serve as an example of a free and professional press, reaching a worldwide audience with news, information, and relevant discussions. We work with a network of reporters and correspondents around the world. To be effective, BBG reporters must be able to travel to bring to its audiences the color and unique flavor of communities across the United States and the world. BBG support staff from offices such as marketing, IT, engineering, and telecommunications has a need for travel as well to ensure the Agency broadcasts run efficiently, effectively, and meets legislative mandates.

When appropriate for meeting its needs, the Agency utilizes teleconferencing to reduce travel by employees and has installed state-of-the-art audio and video equipment at its Headquarters Building for this purpose. This equipment provides the ability for staff to meet with colleagues at other geographic locations without the need for extensive travel.

FUTURE ACTIONS:

a. Greenhouse Gas (GHG) and Energy:

If the proposed FY 2015 budget is approved, the Agency anticipates a reduction in its energy use as the budget submittal calls for a reduction in broadcast transmissions, and the closure of one small transmitting site.

The Agency will continue to monitor the use of ground transportation by having the travel staff review and only approve the most cost effective method. A part of this effort, the travel staff will focus on increasing the use of public transportation and shared rides, and decreasing the use of rental cars where appropriate.

Botswana: The station is located outside of the town of Selebi-Phikwe. A study, funded by the European Union (EU), showed that the levels of sulfur dioxide in the air around Selebi-Phikwe are well above EU standards. This situation is caused by the smelting operation of the BCL mine, and our transmitting site is located 12 miles downwind from the mine. The station is planning to install an air filtration system that will remove the majority of these contaminants from its main working areas.

Sri Lanka: The station is in the process of replacing its florescent lighting with LED lighting. The station is also replacing its halogen flood lights (500W) with LED flood lights (70W) in stages. Both these actions are energy saving measures.

Thailand: The station will replace three air handlers. The replacements will be equipped with variable frequency drive (VFD) for controlling the air flow, making them more energy efficient.

To allow for greater workforce flexibility and enhanced telework capability, TSI will establish a Virtual Desktop Interface (VDI) for remote users to access. The VDI will give users access to a full desktop suite of tools including the Dalet Video and Audio clients and Microsoft Office when they make a remote connection to the Agency's network. In addition, the VDI allows teleworkers to work from home securely.

b. Sustainable Buildings:

If sufficient funds are available in FY 2015, the Agency will conduct an assessment of its transmitting station located in the Commonwealth of Northern Mariana Islands to determine compliance with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings*. The assessment will provide the Agency with a list of potential strategies that the Agency could implement to improve the site's sustainability performance.

c. Motor Vehicles

A portion of the Agency's Broadcasting Administrative Manual (BAM) covering motor vehicles has been revised and is being staffed for final approval. Besides describing the procedures for purchasing or leasing, accounting for, and reporting on Agency-owned or -leased motor vehicles, it also documents the actions the Agency must take to meet the requirements of the Federal Energy Management Program (FEMP) that relate to motor vehicles.

d. Fuel:

Botswana: The station currently uses a tractor and a water trailer to transport non-potable water from a well located at its MW transmitter site to its SW transmitter site, where it is used to water the landscaping and clean the facilities. In an effort to eliminate the use of the tractor and water trailer, the station is planning on laying a pipeline from the well to the SW site.

Northern Mariana Islands: The station will clean, inspect and repair as necessary its two 30,000 gallon fuel storage tanks. This action is necessary to ensure that the tanks are in conformance with EPA regulations.

e. Water:

Kuwait: The station initiated a project to install a PVC water line from the station's water supply to its seven tower MW antenna. Performing monthly maintenance on this antenna array requires the use of between 50 -100 gallons of water, which is currently being hauled up from the station in buckets. This project will make this process more efficient.

f. Electronic Stewardship & Data Centers:

Continue identifying the "core" and "non-core" data that will be categorized as either "broadcasting" or "non-broadcasting".

Continue the migration of non-core data to cloud based services. The long term strategies call for movement of SharePoint out to the Microsoft Federal cloud, and the movement of the user's home drive to Microsoft OneDrive Services.

Continue to consolidate the Agency's non-core data centers. The strategy employed here is to continue virtualization of servers and migration of non-critical data to the cloud. These actions will allow for both data center consolidation, and lower the number of servers actually used.

Continue to 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. The approach here is to reduce energy usage by ensuring that all energy saving settings are employed, where appropriate, and stopping the deployment of individual desktop printers in favor of already deployed network printers and networked copiers that have printer capabilities.

Continue to acquire only ENERGY STAR qualified electronic office products. The 100% goal will be accomplished by purchasing recognized brands from vendors who provide compliant hardware.

3. PROGRESS ON ADMINISTRATION PRIORITIES

Climate Change Adaption Plan: The Agency submitted its Climate Change Adaptation Plan for FY 2014 in conjunction with the submission of this plan.

Fleet Management Plans: The Agency submitted its FY 2014 Fleet Management Plan through the Federal Automotive Statistical Tool (FAST). The plan will be submitted in conjunction with the submission of this plan.

Table 1: Agency Size & Scope

INSTRUCTIONS: Enter the appropriate FY 2013 data for your agency.

 Edit Table

Agency Size & Scope	FY 2012	FY 2013	Actions
Total Number of Employees as Reported in the President's Budget	1652	1612	
Total Acres of Land Managed	7220	7220	
Total Number of Buildings Owned	6	6	
Total Number of Buildings Leased (GSA and Non-GSA Lease)	6	6	
Total Building Gross Square Feet (GSF)	823,233	823,233	
Operates in Number of Locations Throughout U.S.	13	13	
Operates in Number of Locations Outside of U.S.	26	26	
Total Number of Fleet Vehicles Owned	26	18	
Total Number of Fleet Vehicles Leased	15	14	
Total Number of Exempted-Fleet Vehicles (Tactical, Law Enforcement, Emergency, Etc.)	0	0	
Total Amount Contracts Awarded as Reported in FPDS (\$Millions)		146.7	