Overview of SRS Energy Management Program

Achieving the vision of the Savannah River Site

Donell Jenkins

Program Manager, Department of Energy-Savannah River

Presentation to the SRS Citizens Advisory Board

July 24, 2012

Briefing Overview

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Purpose

- Provide an overview of the Savannah River Site Energy Management Program performed on site to achieve the energy efficiency goals and requirements established by the required orders and acts.
- To show Savannah River Site progress toward Leadership in Green Energy
- To fulfill the Facilities Disposition & Site Remediation Committee 2012 Work Plan topic

Drivers

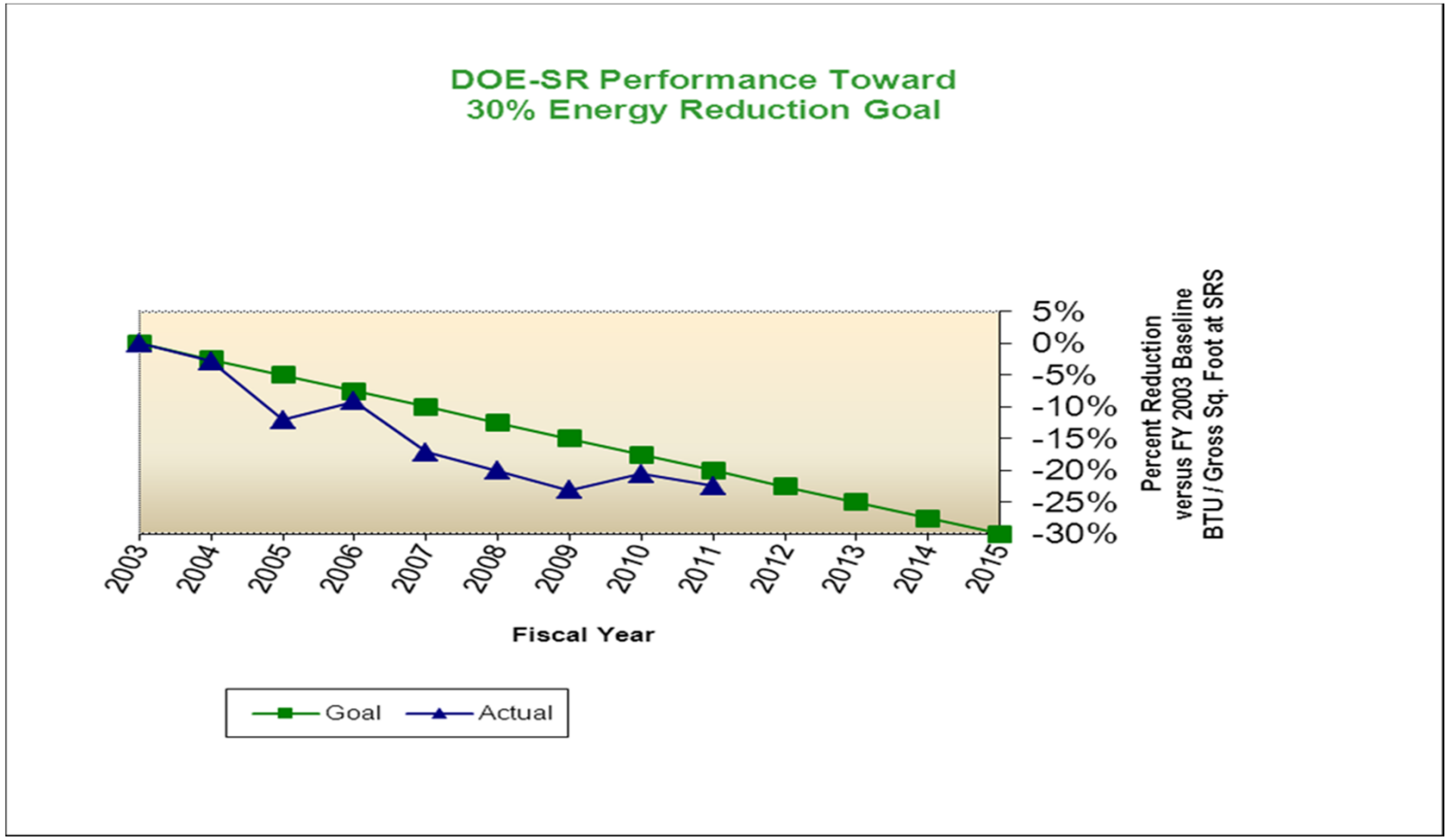
- Department of Energy Order 436.1, “Departmental Sustainability”, May 2, 2011*
- Executive Order 13514, “Federal Leadership in Environmental, Energy and Economic Performance”, October 5, 2009
- Executive Order 13423, “Strengthening Federal Environmental, Energy, and Transportation Management
- The Energy Policy Act of 2005 (Public Law 109-58)
- Energy Independence and Security Act of 2007

* *Orders can be found at http://www1.eere.energy.gov/femp/regulations/requirements_by_reg.html*

Energy Intensity

Goal	Performance Status	Current and Planned Actions
30% energy intensity (energy consumption / square footage) reduction by FY 2015 from a FY 2003 baseline	• SRS has currently achieved a 22.5% reduction through FY 2011 compared to FY 2003 baseline. • SRS energy intensity decreased by approximately 2.4% in FY 2011 versus FY 2010.	• SRNS will continue to replace Heating, Ventilation, and Air Conditioning systems with higher Seasonal Energy Efficiency Ratio units. • Conduct facility audits of square footage • Continue to use Peak Alert to control peak demands for purchase electricity

Performance Status



Metering

Goal	Performance Status	Current and Planned Actions
Individual buildings or processes metered for 90% of electricity (by October 1, 2012) and for 90% of steam and chilled water (by October 1, 2015)	• Savannah River Site Metering Plan was developed in FY 2011. • Existing metering program includes over 220 electrical meters and 17 steam meters to provide energy use data • Savannah River Site uses meter data as part of comprehensive billing and cost allocation system • Meter data is directly correlated with various multi-building processes / programs across Site. • Not all buildings are individually metered but individual processes / programs are as part of costing efforts	• Continue to use existing metering of multiple rather than individual processes / buildings • Continue metering of High Performance Sustainable Buildings

Cool Roofs

Goal	Performance Status	Current and Planned Actions
Cool roofs, unless uneconomical, for roof replacements. New roofs must have thermal resistance of at least R-30.	• Savannah River Site applied cool roof technology on three new roofs, totaling approximately 25,420 square feet in FY 2011. • These applications reduce heat transfer and increase reflectivity. • They also provide the Site with additional warranties as these materials aid in providing longer life.	• Savannah River Site will continue to incorporate cool roof technology into annual roof replacements.

Renewable Energy

Goal	Performance Status	Current and Planned Actions
7.5% of the site's annual electricity consumption from renewable sources by FY 2013 and thereafter (5% FY 2010 – 2012) (2x credit if the energy is produced on-site)	• New Biomass Cogeneration Facility went online in FY 2012 • Reduction of over 161,000 tons of annual coal consumption and 300,000 gallons of fuel oil consumption • Utilization of 322,000 tons of biomass and bio-derived fuels • Reduction of over 1 billion gallons of water from the Savannah River annually • Reduction of greenhouse gas emissions by about 100,000 tons per year • Meeting and exceeding all Savannah River Site renewable energy goals in federal directives	• Savannah River Site will use the new Biomass Cogeneration Facility to produce Savannah River Site process steam and 20 Megawatts of "green" power. Facilities life expectancy is 30-40 years.

Biomass Cogeneration Facility

High Performance Sustainable Buildings – Existing Buildings

Goal	Performance Status	Current and Planned Actions
15% of existing buildings larger than 5,000 gross square feet to be compliant with the five Guiding Principles of High Performance Sustainable Buildings by FY 2015.	• Savannah River Site contracted with Energy Ace to provide energy auditing, commissioning, and American Society of Heating, Refrigerating and Air Conditioning Engineers compliance evaluation for thirteen buildings in FY 2011. • Approximately 555,000 square feet of building space evaluated. • Payback to incorporate Energy Conservation Measures are typically very long and do not show economic cost-effectiveness in general.	• Audits of the 15% remaining facilities will be completed in Fiscal Year 2012

High Performance Sustainable Buildings – New Construction

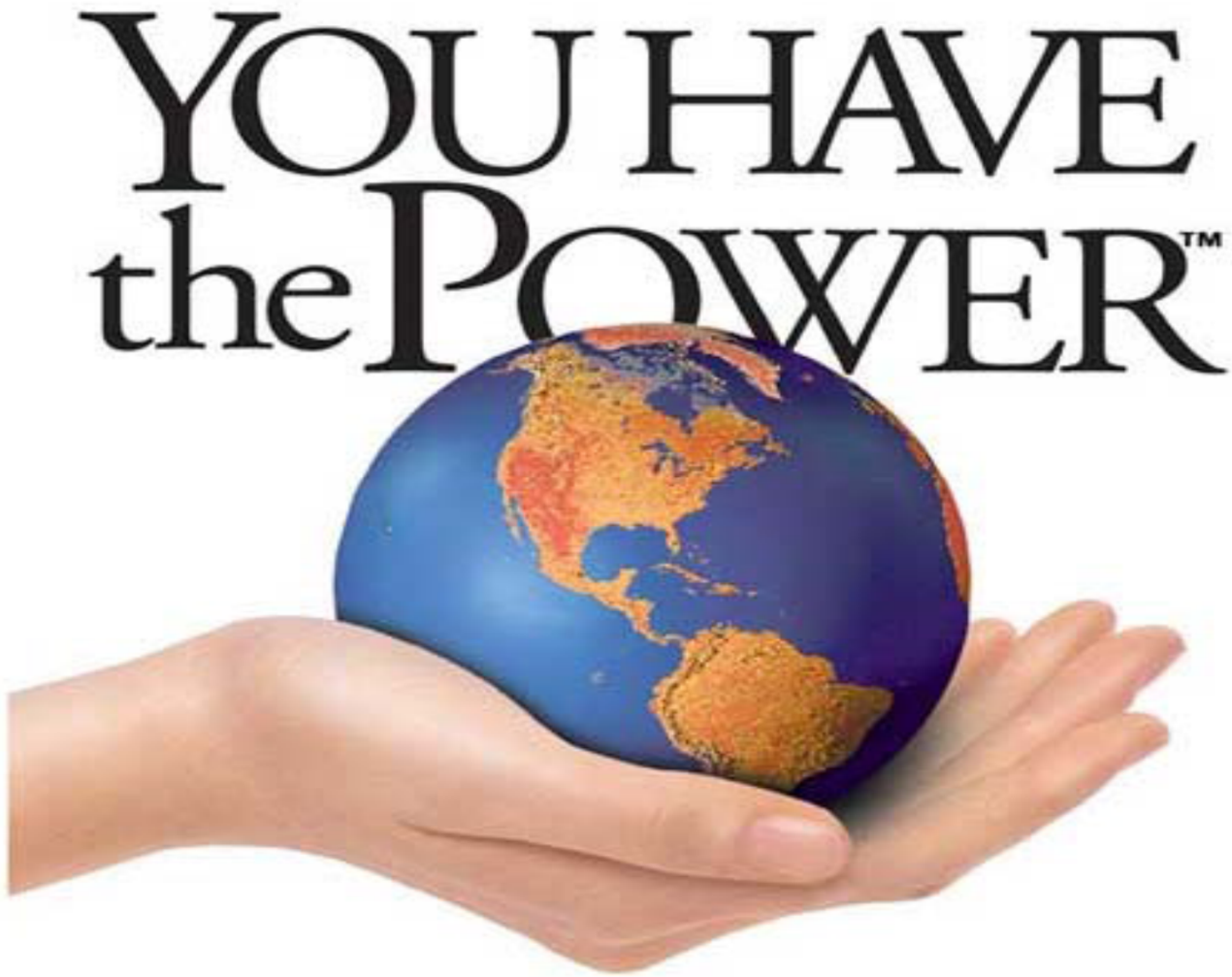
Goal	Performance Status	Current and Planned Actions
All new construction, major renovations, and alterations of buildings greater than 5,000 gross square feet must comply with the Guiding Principles, and where the work exceeds $5 million, each are to be Leadership in Environmental and Energy Design Gold certified.	• Mixed oxide Administration Building received Leadership in Energy and Environmental Design Gold certification in Fiscal Year 2010. • Ameresco Federal Solutions Administration Building received Leadership in Energy and Environmental Design Silver certification in Fiscal Year 2012.	• Two additional facilities are projected to achieve Leadership in Energy and Environmental Design certification

Mixed Oxide Fuel Facility

Electronic Stewardship

Goal	Performance Status	Current and Planned Actions
Electronic Stewardship – 100% of eligible personal computers, laptops, and monitors with power management actively implemented and in use by FY 2012	• Most Site computers are provided to site employees via a lease agreement. • The lease contract requires that all computers must be Energy Star compliant and must meet low standby power requirements. • The power reduction features of the personal computers and monitors are set to efficient levels upon receipt of the equipment.	• Savannah River Site will continue to ensure leased desktop computers, laptops, and monitors continue to meet the Electronic Product Environmental Assessment Tool and Energy Star requirements.

Summary

- Savannah River Site is currently on target to achieve the 30% energy intensity reduction by 2015.
- Savannah River Site is currently using cool roofs for roof replacements.
- Savannah River Site will meet the renewable energy goal (15% of the site electrical consumption is projected to be generated by the new biomass facility).
- Audits of the 15% of site facilities will be completed in this fiscal year.
- Two additional facilities are projected to meet Leadership in Energy and Environmental Design
- The Site will continue to lease computers that will meet the Electronic Product Environmental Assessment Tool.

Questions?