U.S. DEPARTMENT OF ENERGY

SRS™

Citizens Advisory Board Sustainability Progress Brief

Savannah River Site

SRNS-RP-2023-00964

September 26, 2023

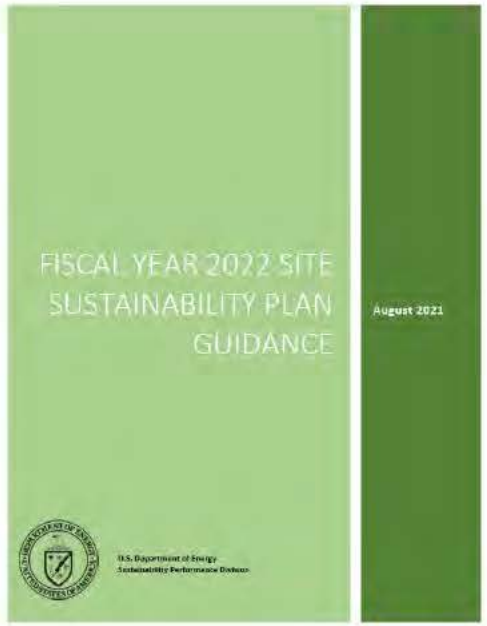
CAB

Sustainability Progress Brief Agenda

- Sustainability, Resiliency, and Clean Energy Drivers
- Sustainability, Resiliency, and Clean Energy Strategy
- Current Carbon Pollution Free Energy Efforts
- Government Vehicle Fleet Electrification – "SRS Leading the Complex"
- Sustainability, Resiliency, and Clean Energy Challenges

Sustainability, Resiliency, and Clean Energy - Drivers

- **DOE O 436.1A *Departmental Sustainability* (April 2023)**
- **EO14008 (JAN 2021) Tackling Climate Crisis**
- **EO14030 (MAY 2021) Climate Related Financial Risks**
  - Climate Adaptation and Resilience Plan (CARP)
  - Vulnerability and Adaptation and Resilience Plan (VARP)
- **EO14057 (DEC 2021) Catalyzing Clean Energy Industries and Jobs**
  - Carbon Free Electricity Plan (CFE)
  - Zero Emission Fleet Strategy (ZEFS)
- **Energy Security Act of 2020 (DEC 2020)**
  - Complete Energy Conservation Measures
- **Energy Independence and Security Act of 2007**
  - Conduct energy audits and Annual Site Sustainability Plan (SSP)



Sustainability, Resiliency, and Clean Energy - Strategy

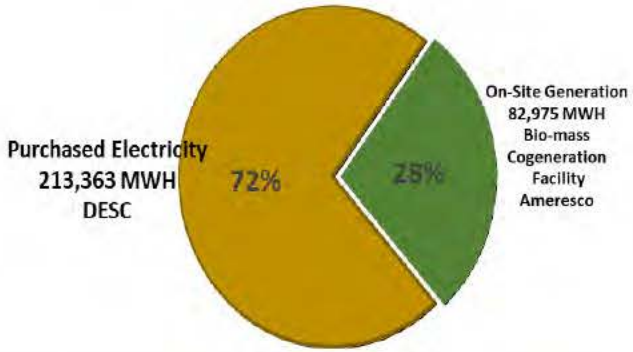
- **Sustainability**
  - Increase implementation of Energy Conservation Measures (ECM)
    - *LED Replacement Fixtures (2 major building completed in 2023)*
    - *Replace whole HVAC/Air Handling Systems*
    - *Continued completion of ECMs*
  - Replacement of aged water system piping
  - Modernize buildings with water-saving fixtures
- **Resiliency (Reduce Risk of Climate Change and Aging)**
  - Critical Electrical Grid Components replaced with rightsized and more efficient components
  - Replace Large HVAC Systems with more efficient systems
- **Clean Energy / Carbon Free Electricity**
  - Pursue on-site solar power generation capabilities
    - *Little Pine (~10MW Solar Field) in planning phase*
    - *Big Pine (~100MW Solar Field) exploring possible locations*
  - Collaboration with Federal Energy Management Program
  - Federal grant funding application submitted in 2023
  - Explore alternatives to fossil fuel burning equipment

LED lighting in 730-B

A-Area Solar Powered X-walk

SRS Electricity Consumption 2022

296K MegaWatt-Hours (MWH) Total



Current Carbon Pollution Free Energy Efforts

- **SRS has developed a cross-contract, cross-functional area Sustainability Working Group and Sustainability Steering Committee to facilitate sustainability initiatives.**

- **SRS authored a Carbon Pollution Free Energy Plan Implementation Plan to support execution of DOE's complex wide goals**

- **Near Term (FY23-FY27)**
  - Pursue developing a ~10MW Solar Field
  - Potential site adjacent to A/M Areas identified
  - Reviewing opportunities for implementation through Contract Modification, Land Lease or Utility Energy Savings Contract (UESC)
  - Conducting discussions with Utility providers that have experience with developing solar power and UESC
  - FEMP and US Army Corps of Engineers support

Conceptual A-Area Solar Field

- **Far Term (FY28 and beyond)**
  - Utility Scale Solar Field (~100MW)

Government Vehicle Fleet Electrification – "SRS Leading the Complex"

- **Government Zero Emission Vehicle (ZEV) Fleet**
  - 116 ZEVs ordered with 113 currently on-site
  - Detailed EV charging station infrastructure implementation plan currently in development to support 100% ZEV Light Duty Fleet (~600 vehicles)
    - *100% ZEV Light Duty acquisition by FY2027*

- **High-traffic areas chosen for Phase 1 transition to ZEVs**
  - 8 Level 3 B-Area Charging Stations (In Service)
    - *Capacity to charge a total of 8 vehicles simultaneously*
    - *First Level 3 charging stations in the DOE Complex*
  - 4 Level 2 N-Area Charging Stations (In Service)
    - *Capacity to charge a total of 8 vehicles simultaneously*
  - 4 Level 2 A-Area Charging Stations (Under Construction)
    - *Capacity to charge a total of 8 vehicles simultaneously*

B-Area Level 3 Charging Station

Government Vehicle Fleet Electrification – "SRS Leading the Complex"

- **Phase 1 – Exceeded 10% Govt. Owned Vehicle (GOV) Light Duty Fleet conversion to Zero Emission Vehicles (ZEV)**
  - 116 ZEVs ordered with 113 currently on-site (~18% of total LD GOV Fleet)
  - 3 Charging Locations (24 total charging ports) to be installed across SRS
    - B-Area Charging Stations (In Service)
      - First Level 3 charging stations in the DOE Complex
    - N-Area Charging Stations (In Service)
    - A-Area Charging Stations (Under Construction)
- **Broader Deployment**
  - Next 6-12 months: Third-party SME full fleet electrification study
  - FY24-FY27 – Fund and fully deploy charging capabilities consistent with study and fleet transition to ZEVs

B-Area Level 3 Charging Station

N-Area Charging Station Celebration – "SRS Leading the Complex"

N-Area Charging Station Installation Ribbon Cutting Ceremony July 17th, 2023

Phase 1, Electric Vehicle Charging Stations

N-Area Level 2 Charging Stations
Completed July 2023

B-Area Level 3 Charging Stations
Completed April 2023

A-Area Charging Stations Under
Construction

Ford Lightning Zero Emission Vehicle

Promotional Ford Lighting Zero Emission Vehicle

Ford Zero Emission Vehicle Charging at the New N-Area Charging Station

Sustainability, Resiliency, and Clean Energy - Challenges

- **Achieving DOE Complex Wide Goals**
  - Net Zero Greenhouse Gas Emissions by 2050
  - 100% Carbon-Pollution Free Energy by 2030
  - 100% Light duty Zero Emission Vehicle Acquisitions by 2027
  - Implementing VARP Resilience Solutions to support Climate Resiliency
- **Electric Power Costs**
  - Historically, annual cost increases occur in May each year and are typically ~2-3%
  - Recently, fuel costs have increased ~10% in May 2022, ~10% in January 2023 (Additional mid-year increase), and ~10% in May 2023.
- **Increasing emphasis on developing and implementing the annual Site Sustainability Plan**
  - Implementing and integrating new DOE O 436.1A *Departmental Sustainability* requirements
- **Budget prioritization of sustainability related efforts**
  - Direct (PBS) and Indirect processes