Minimizing the Air Force Mission Vulnerability through Energy Assurance Upgrades

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Problem Statement

Energy Threats and Vulnerabilities Compromise Mission.

A well-orchestrated attack (physical or cyber) on the grid could cripple the electric system, cause tremendous economic damage, put the country’s vulnerable populations at risk, and compromise the Air Force’s ability to conduct its mission.
Technical Approach

• Booz Allen and NCMS work with the Air Force’s Office of Energy Assurance (OEA) to transform the way the Air Force identifies, develops, and executes energy assurance projects

• OEA becomes the “storefront” for strategic energy resiliency initiative that meet the core principals

• We partner with industry, installations and communities for innovative resiliency solutions:
  • Advanced cybersecurity
  • Alternative generation
  • Battery storage
  • Efficiency technology
  • Infrastructure upgrades
  • Smart controls
  • And more…

CORE PRINCIPLES

Resilient: Enhancing energy assurance to maintain critical mission functions through unexpected power disruptions

Cost-effective: Leveraging third-party financing and maximizing Air Force investments

Cleaner: Diversifying energy generation for increased agility/resilience
Approach through Partnerships

• **Installations:** We work with installations to determine energy requirements critical to the mission and provides practical tools and support to develop projects to meet those needs.

• **Communities:** We develop energy assurance projects on or near installations by collaborating with community stakeholders to identify shared interests, such as costs, risks and goals, and to develop mutually beneficial solutions.

• **Private Industry:** We leverage the expertise, resources and capabilities of private industry to design and execute creative solutions to energy challenges.
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<th>Line of Effort</th>
<th>Deliverable</th>
<th>Benefit</th>
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| Opportunity Development | **POWER Tool**: An excel database covering over 1,700 USAF and ANG sites with >100 of descriptors that can be used to analyze potential for resilience projects | • Provide market assessment of AF sites  
• Evaluate stakeholder/utility partner potential  
• Track project engagement  
• Act as repository for OEA clearinghouse activities |
| Acquisition and Real Estate | **Beale Resilience Assessment**: An assessment of Beale AFB concerning its key missions and the infrastructure required to achieve them with a design basis for improvement projects  
**Cyber evaluation framework and Case study (Beale)**: Development of a Cyber risk management framework and apply it to the ICS for a resilience project at an installation | • Understand key links in mission requirements  
• Identify critical infrastructure  
• Document operators’ mission/infr. concerns  
• Design projects that improve resilience  
• Establish best practices for designing and operating microgrids / ICS  
• Ensure electrical resiliency is matched by appropriate cyber security |
| External Engagements | **Website**: Publically facing .mil website for the OEA | • Introduce OEA to the community  
• Collect stakeholder information  
• Act as clearinghouse for AF energy projects  
• Highlight successful resiliency ideas |
| Engineering and Energy Resilience | **REDI Tools and Templates**: Documents derivative of REDI at Beale on how to coordinate requirements between | • Leverages SAF/IEE’s REDI processes  
• Strengthens ability to identify energy assurance requirements |
| Finance              | **Align BCA processes to AF instructions**: Explore options to consider the “intangible” benefits of energy assurance | • Align OEA financial analysis with AF/FM best practices  
• Ensure timely financial analysis to support project management team |
## Technology Deployment

### Sample Booz Allen / NCMS Projects:

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<th>Location</th>
<th>Objective</th>
<th>Value to the OEA</th>
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| Beale AFB         | Develop a micro grid plan to provide energy assurance to the global hawk mission at Beale AFB. Apply for California Energy Commission Grant to fund construction                                                                                                                                                                                   | • Energy assurance project  
• Contains a renewable component  
• Demonstrates how to leverage State funding  
• Test bed for cyber security risk matrix in acquisition |
| Data Center ESPC  | Demonstrate how to successfully identify opportunity for, and execute an ESPC for data centers                                                                                                                                                                                                                                             | • Leverages ESPC to address data center cost and resilience  
• Supports SAF A6/CIO data center consolidation effort  
• Provides pipeline of additional data center ESPC opportunity  
• Replicable process |
| Maxwell Gunter AFB| Leverage REDI processes and explore opportunity for third party financed energy assurance project at Maxwell Gunther AFB                                                                                                                                                                                                                  | • Demonstration and streamlining of REDI processes resulting in acquisition  
• Identify opportunity that meets all three criteria – energy assurance, cleaner energy, economics  
• Replicable process |

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Project Team Participants

• Deputy Assistant Secretary of the Air Force for Installations Environment and Energy (SAF/IEE)
• Air Force Office of Energy Assurance
• Air Force Civil Engineering Center
• Air National Guard
• Army Office of Energy Initiatives
About Booz Allen’s Energy in Defense Team

Six years of support to SAF/IEE and SAF/IEN for energy strategies and plans, project analyses, training, strategic communications, metrics aggregation, and security. Established REDI program and processes to jumpstart AF-OEA.

Established the REPO office and assisted in planning, communicating, and executing 1 GW energy goal. Support ODASN-Energy in shore energy policy, Great Green Fleet communications and Energy Action Month.

Developed award-winning behavior change “Energy Ethos” campaign tied to Energy Action Month. Provide data analysis, vehicle fleet management, energy and water SMEs across the country.

Stood up EITF office providing planning, communications, and contract execution support to help the Army drive to the 1 GW goal. A model for other Services.

Assist DASD-IE and DASD-OE in supporting the development of energy policy, review of new technologies, data collection and program analysis.

Conducted full feasibility study analysis and developed engineering and design studies for 17 community microgrid projects across New York.