"Leading the Way in Delivering Air Force Installation Energy Assurance"

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Resiliency is a process, not a product

By Sarah McNair
AFIMSC Public Affairs

In August 2019, at the Energy Exchange Convention in Denver, Colorado, Mark Correll, Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure, made a statement that leads to a new way of thinking about energy resiliency. That concept is resiliency is a process, not a product. The Air Force is taking a holistic approach to future energy projects, focused on the over-arching objective of providing strategic energy agility for missions and installations.

Mission assurance through energy assurance is interconnected throughout the entire Air Force. The primary mission at each installation is a critical piece of the worldwide Air Force mission.

"At the end of the day, what we are focusing on is making sure the mission can be done," said Correll. "I've got to have power where I need it, when I need it, so the mission can be accomplished."

To enable the Warfighter to fly, fight and win, resilient and efficient energy management is imperative. The approach going forward to meet the Air Force's energy goals, as outlined in the Air Force Energy Flight Plan, encompasses three characteristics to consider: resilient, cost-effective and cleaner energy. The newly updated requirement is for projects to have at least two of these characteristics and one of them must be resiliency.

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Mark Correll, Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure (far right), speaks about the Air Force approach to energy resiliency at Energy Exchange Convention in Denver, Colorado. (U.S. Air Force photo by Sarah McNair)

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RESILIENCY

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"We switched focus a couple of years ago within the Department of Defense, from conservation to resiliency," said Les Martin, Chief of the Energy Program Development Division at the Air Force Civil Engineer Center (AFCEC). "So, now all of our goals are around resiliency. I've been told we are not going to execute any projects unless they bring resiliency for the Warfighter."

To the Air Force, resilience means having the ability to prepare for, and recover from, energy disruptions that could impact mission assurance on military installations. Five key resilience attributes are considered to prioritize energy projects and ensure investments are in support of accomplishing the mission. These five attributes are referred to as the 5 R's of resiliency, three of which, are preventative measures that keep the systems from being impacted when attacked and two are performance-based. The first, robustness, refers to how resistant the system is before it degrades. Redundancy is having multiple lines of defense to rely on, such as being connected to the primary grid while having the capability to function off of distributed generation and a microgrid as backups, for example. The third preventative measure is resourcefulness, which is accomplished by optimizing demand and using resources efficiently and productively to save resources and money, thereby increasing combat capabilities. The two performance measures are recovery, how well the system recovers once it has gone down, and responsiveness, which refers to how agile the system is and how quickly it is possible to respond after an attack.

"Ensuring the supply even while under attack, no matter what those attacks are, whether they're natural disasters, cyber-attack or physical attack, making sure we have an assured energy supply is absolutely critical for us to accomplish our mission," said the Honorable John Henderson, Assistant Secretary of the Air Force for Installations, Environment and Energy.

To move forward and pursue energy projects, these attributes should be utilized to assess the projects and answer the question of what each installation needs to do to accomplish being efficient, resilient and capable of supporting its primary mission. These attributes can then be applied to the Mission Thread Analysis (MTA) approach. An MTA identifies mission-critical assets and assesses how resilient their supporting enabling systems are by decomposing the mission, which starts with the operators, establishing the main objective and how success is measured. Once that is broken down to task functions and assets, the areas of potential failure can be identified and then solutions for prevention. All of these aspects should be outlined in the Installation Energy Plan (IEP) and therefore in the Communications Tasking Plan (CTO) to support what the installation needs in terms of funding and requesting resource allocation for AFCEC approval.

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"I want each of you to think about potential projects through this resilience-focused lens," said Correll.

With more emphasis being placed on energy and mission assurance through energy assurance, the Air Force Installation and Mission Support Center (AFIMSC) and AFCEC offer support and resources to help accomplish Air Force energy goals.

"At the Air Force Civil Engineer Center, we are recognized experts in execution of these programs," said Dan Soto, Director of the Energy Directorate and Interim Director of the Office of Energy Assurance. "When we are looking at energy assurance, we are looking at cyber secure, maintainable, operational, connectable and adaptable solutions."

AFIMSC is striving to make sure Air Force installations have resiliency built into how the facilities and infrastructure are utilized. When assessing how and where to make more strategic investments, it is important to know which pieces and buildings are mission critical to Air Force weapons systems.

"Every installation is its own weapons platform and needs to be resilient, so we can perform that mission, even under duress, said David Dentino, Director of Installation Support for AFIMSC. "The biggest challenge is understanding how each one of those pieces fits in to that installation's weapon system and enables that operational mission to happen. Again, that link is tough, because you have to pull that mission thread analysis all the way through."

The key to this process is understanding what the operators need for their installation platforms and weapon systems. Once this is accomplished, energy resilience becomes a by-product of that understanding because it clarifies where there may be vulnerabilities or gaps in resilience and therefore, where to focus when making strategic investments.

"It's my job, and the job of AFMISC and the U.S. Air Force Air Staff, to pull this information together and look at where we need to make our investments and how we can do that more strategically, said Dentino. "But, there's always small things that you can do at every single installation to better enable resilience for your particular mission. So, bases need to take care of that and then it is my job and the people at AFIMSC and the Air Staff to pull it together more strategically and make sure we can make those bigger investments."

This systematic approach to energy assurance ensures the Air Force will be prepared for, and have the ability to recover from, energy disruptions sufficiently to continue to fly, fight and win the Air Force mission.

Installation energy plans

SAF/IEE

The Office of the Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure (SAF/IEE) is giving installations a roadmap to achieve energy and water resilience goals.

Installation Energy Plans (IEPs) are designed to identify water and energy requirements for each installation's critical missions, analyze potential vulnerabilities and develop strategies to make enabling systems more resilient. IEPs enhance energy assurance for the Air Force by integrating installation and higher-level strategic guidance, plans and policies into one framework.

The Office of the Secretary of Defense (OSD) has established an aggressive timeline to complete the IEPs for all military installations. In order to comply with the OSD policy and deliver consistent, high quality plans, SAF/IEE will centrally manage the development of the initial IEPs and work with each installation to ensure they capture local initiatives, constraints and priorities.

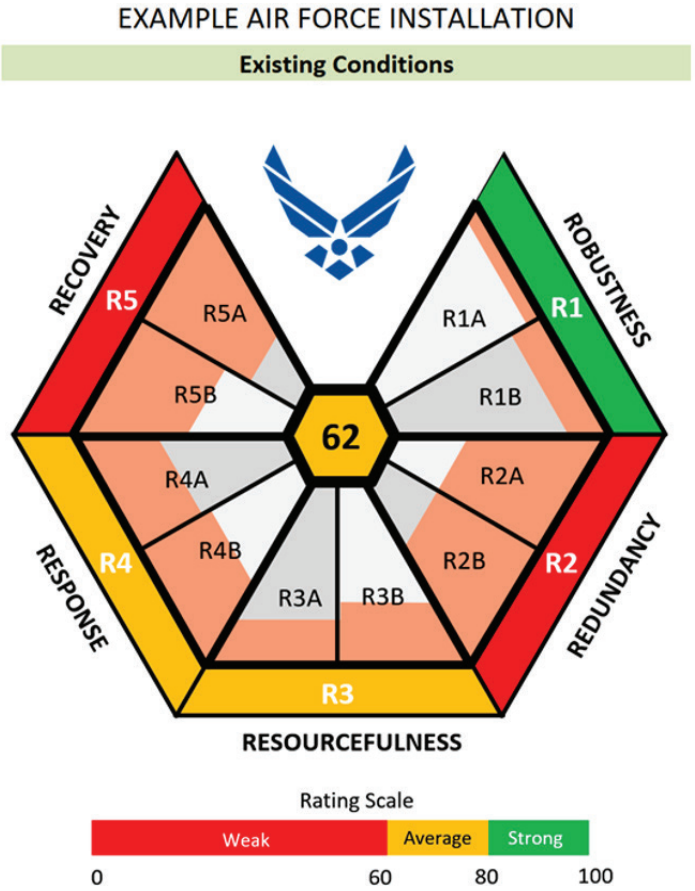
As briefed during Air Force Day at Energy Exchange in August 2019, SAF/IEE's implementation strategy includes:

1. **Establish a baseline:** Establishing a baseline is a critical step in the IEP process. The baseline will be used as a performance measure throughout the IEP process.
2. **Determine Requirements:** Outlining clear energy and water requirements for each of its missions enables the installation to target resilient solutions and better contribute to the Installation Development Plan.
3. **Gap Analysis:** Performing a capabilities gap analysis based on an installation's current state provides essential information to identify and pinpoint existing energy vulnerabilities. Once complete, an installation will be better equipped to address those vulnerabilities through the IEP process.
4. **Alternative Scenario Plans:** IEPs encourage the development of "what-if" scenarios, where managers envision possible risk factors and develop contingency plans to deal with them. The pace of change in business is rapid and organizations must be able to quickly adjust their strategies to these changing conditions.
5. **Comprehensive Integration:** By establishing the IEPs as a key annex to Air Force installation development plans, SAF/IEE is promoting collaboration and cooperation among stakeholders to ensure a lasting impact.

Recognizing the demands on installations today, this strategy provides a consistent, scalable approach to installation energy planning to inform project development and investment decision making.

To date, the Air Force has completed seven IEPs and aims to complete the remaining OSD priority installations by FY2022. The remaining installations will be scheduled afterwards. The schedule for IEP completion is provided below. SAF/IEE is working with installations scheduled in FY20 and will be in touch with FY21 installations in early CY20.

Have an IEP question? Contact Kathleen Richardson at kathleen.c.richardson4.civ@mail.mil.



The Energy Resiliency Dashboard is the interface that enables data entry and management and provides a visual representation of an installation's energy resilience posture. The Dashboard operationalizes the definition of each resilience attribute by identifying specific strategies an installation can apply to move into the green levels for all five attributes. For example, the fourth resilience attribute (R4) response is defined as the ability to adapt to crises, respond flexibly and transform negative impact into positive. Examples of two strategies to improve the installation's response are to perform generator full load tests and implement energy management protocols.

FY 2021	
Tinker AFB	Whiteman AFB
Clear ARS	Nellis AFB
Kirtland AFB	Creech AFB
Eielson AFB	Minot AFB
McConnell AFB	Cavalier AS
Malmstrom AFB	Wright Patterson AFB
Offuit AFB	Barksdale AFB

FY 2020	
Hill AFB	Peterson AFB
Robins AFB	Schiever AFB
Cape Cod	FE Warren AFB
Joint Base Andrews	Scott AFB
Joint Base Langley Eustis	Maxwell AFB
Shaw AFB	Patrick AFB
Buckley AFB	Cape Canaveral
Cheyenne Mountain AFB	Eglin AFB

AFCEC Tyndall hosts FEMP accredited energy training

Open discussion during the Tyndall FEMP UESC Training with instructor Deb Vásquez, FEMP UESC SME. (U.S. Air Force photos by Sarah McNair)

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The Air Force Civil Engineer Center (AFCEC) recently hosted two advanced training workshops to familiarize Air Force energy managers and stakeholders with two different contracts that can be used to support installation resiliency and energy goals.

These two-day workshops, which took place in January at Tyndall Air Force Base, Florida, focused on Energy Service Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs) programs. AFCEC, along with leaders from the Department of Energy's Facility Energy Management Program (FEMP) and the Department of Energy (DOE) discussed the various aspects of both types of contracts and held open forums to share the knowledge of how to implement them with resiliency aspects.

"The ESPC and UESC workshops at Tyndall were a success," said Tom Laney, AFCEC Energy Project Manager. "Having both FEMP DOE program experts in collaboration with the AFCEC ESPC and UESC program experts facilitating the training created a unique opportunity to communicate the Air Force playbooks process. All attendees participated and discussed actual Air Force projects, in respect to AFCEC's perspective development process on project phases and examined lessons learned."

Attendees gained a well-informed understanding of implementing energy and water conservation projects by utilizing the ESPC and UESC as tools for achieving energy improvements and cost savings. Learning objectives included planning activities to set the stage for a successful contract, critical roles and responsibilities of the acquisition team, project facilitators and others involved the process, the types of resilience and reliability measures to be included, how projects are financed, making smart financial decisions, the process

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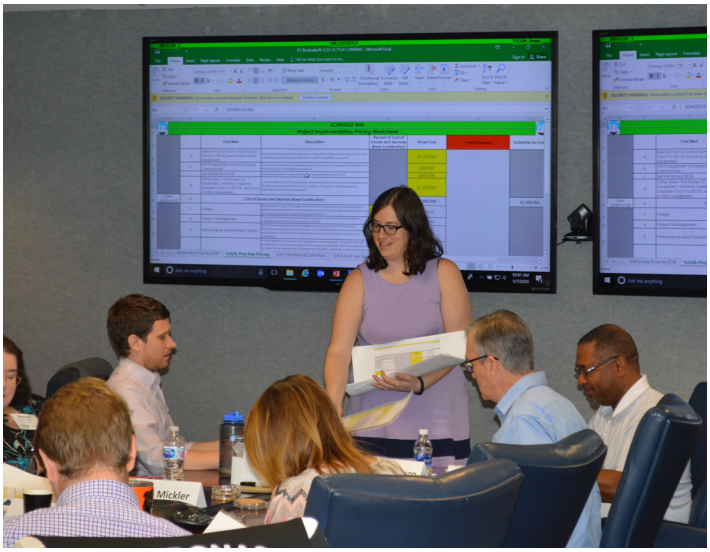

Training attendees participated in hands on exercises.

Mike Ringenberg, AFCEC CND Program Manager, provided feedback on AFCEC's procedures to attendees during training. (U.S. Air Force photos by Sarah McNair)

FEMP

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of developing, awarding, implementing and administering these energy task orders, as well as various exercises to understand the application of required components and walk through developing a viable project. Additional topics covered were other strategies and proven successful methods used by experienced contracting officers and technical teams and FEMP resources available to assist with the processes. Another notably important aspect discussed by FEMP is the role of the Air Force Project Facilitators, who provide support and guidance throughout the ESPC and UESC process.

Federal Energy Management Program's ESPC Program Manager, Kurmit Rockwell, addressed how to implement ESPC contracts.

"This workshop provided a forum to apply classroom training to real world cases," said Dan Soto, Director of AFCEC's Energy Directorate. "The experience gained will serve the attendees and the Air Force for years to come."

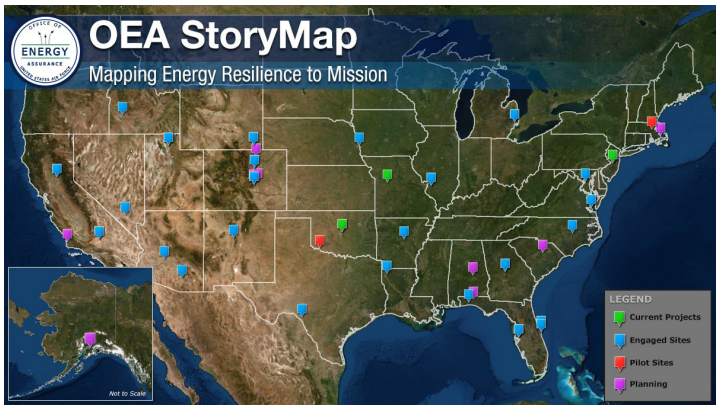
There was a total of thirty-five attendees from many different agencies including DOE FEMP ESPC and UESC, the National Renewable Energy Laboratory (NREL), AFCEC Energy experts, the Office of Energy Assurance (OEA), Air National Guard (ANG) – Region 6, the U.S. Army Corps of Engineers (USACE) and personnel from five Air Force installations, including Robbins Air Force Base, which is currently pursuing both a potential ESPC and UESC project award. The diverse scale of attendance contributed to the success of both workshops by increasing networking and the available knowledge, experience and perspectives on these programs.

"All attendees were engaged and gained knowledge on the process for developing and executing current and future Air Force projects," said Laney. "The AFCEC team provided valuable perspective throughout the workshops on AFCEC's program requirements, guidance and lessons learned for all phases, from project development through the performance phase."

ESPCs and UESCs are valuable assets enabling Federal agencies, including Air Force installations, to meet resiliency and energy goals through wise financial decisions. This FEMP training sponsored by DOE and hosted by AFCEC Energy paves the way towards future installation needs and energy developments. The training demonstrated how to navigate projects through the process and make them more achievable. Air Force installations interested in pursuing energy projects are encouraged to contact AFCEC through the Reachback Center at (888) 232-3721 or AFCEC.RBC@us.af.mil.

Did you know?

OEA provides an interactive map for energy project updates



The U.S. Air Force Office of Energy Assurance (OEA) introduced the Energy StoryMap, which is available to internal and external audiences at https://arcg.is/1HDS8v. This tool is an interactive web-based map that depicts OEA's current engagements in energy resilient opportunities, concepts and projects occurring at Air Force installations across the nation. The StoryMap illustrates OEA's capabilities as the central management office for facilities energy and water assurance. The map includes OEA's energy resilience engagements with installations from when the office was established.

The map displays details of projects being implemented and plausible energy resiliency ideas through four phases of development: planning, pilot sites and innovation, engaged sites, and current projects. Installations that are in a planning phase can request OEA assistance with resource allocations, data gathering, writing installation energy plans and other planning needs. Pilot sites and innovation includes installations where OEA is exploring creative energy solutions and/or emerging technologies. Engaged sites listed on the map identify installations with an initiated energy assurance assessment who are working with OEA to find the best solutions to meet specific energy requirements prior to moving to project execution. Current projects shown on the map have been moved to an implementation phase through the Air Force, but OEA maintains an advisory role throughout project completion.

"The map illustrates what OEA has accomplished since 2017," said Ashley Sadorra, Energy Program Administrator, Operations Lead for Air Force Office of Energy Assurance (OEA). "It's a place where our stakeholders — from mission owners to utility partners — can learn about the legacy energy resilience initiatives that OEA facilitates at Air Force installations. So much has changed since we became the Facility Energy Storefront in 2018, as we are now focused on enterprise mission assurance priorities. This online tool provides visual representation of how legacy opportunities assisted the creation of our requirements validation process to generate more robust projects for Air Force mission energy and water resilience."

OEA assists installations in meeting Air Force energy goals by facilitating energy resilient initiatives to achieve energy assurance enterprise-wide. They help identify the right solutions to meet each installation's mission specific energy needs, ensuring that the Air Force has ready Airmen, robust weapons systems and resilient infrastructure, which all require energy to operate. To collaborate with OEA for your energy resilience idea, visit the Air Force Energy Storefront, their online idea intake platform, which can be found at safie.hq.af.mil\Programs\Energy\OEA\WorkWithOEA"safie.hq.af.mil/Programs/Energy/OEA/WorkWithOEA.

If you would like to nominate someone to be profiled in an upcoming issue, please contact us at AFIMSC.PA.Workflow@us.af.mil.

CE DASH

https://cs2.eis.af.mil/sites/10159/

Air Force Civil Engineering Technical Support Designed with the Field in Mind

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Please send your comments, story ideas and photos to afimsc.pa.workflow@us.af.mil.

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