

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

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Fall 2021



Ascension Island Airfield, a British territory more than 5,000 miles southeast of Patrick Space Force Base, Florida, and about 500 miles south of the equator, will receive energy infrastructure upgrades through an ERCIP contract that includes the replacement of six wind turbines with a single 900 Kwhr wind turbine generator. The renewable energy resource will supplement generator production and provide an alternate energy source if fuel resources are disrupted. (U.S. Air Force photo)

Air Force awards ERCIP contract for Ascension Island

By Emily Mifsud
AFIMSC Public Affairs

TYNDALL AIR FORCE BASE, Fla. — Ascension Island Auxiliary Airfield will receive energy resilience infrastructure improvements through an Energy Resilience and Conservation Investment Program contract awarded in July by the 45th Space Launch Delta Civil Engineer and Contracting squadrons.

The \$11.3 million contract, awarded to Jade Creek Construction, LLC, is a collaborative effort between the Air Force Civil Engineer Center, SLD 45 and Ascension Island AAF to support mission assurance through energy assurance. The airfield is operated by the Department of the Air Force and used by the United Kingdom's Royal Air Force. The outpost supports a variety of critical missions for 14 individual military, governmental and international agencies.

"This ERCIP project is made possible through the coordination and teamwork of the U.S. Space Force and U.S. Air Force, including Space Launch Delta 45 Mission Support Squadrons, AFCEC, Air Force Installation and Mission Support Center and AAAF installation personnel," said Christopher Vidal, energy manager at Patrick Space Force Base, Florida. "This is the first ERCIP project for Space Launch Delta 45 which incorporates both renewable and energy storage technology, and it positions the installation to meet energy reduction and resiliency goals in the near future."

[continued on pg. 3](#)

In this issue:

- Energy efficiency contract awarded for Hurlburt Field
- Malmstrom AFB receives hydropower allocation
- Meet the Chief of the Measurement & Analysis Division



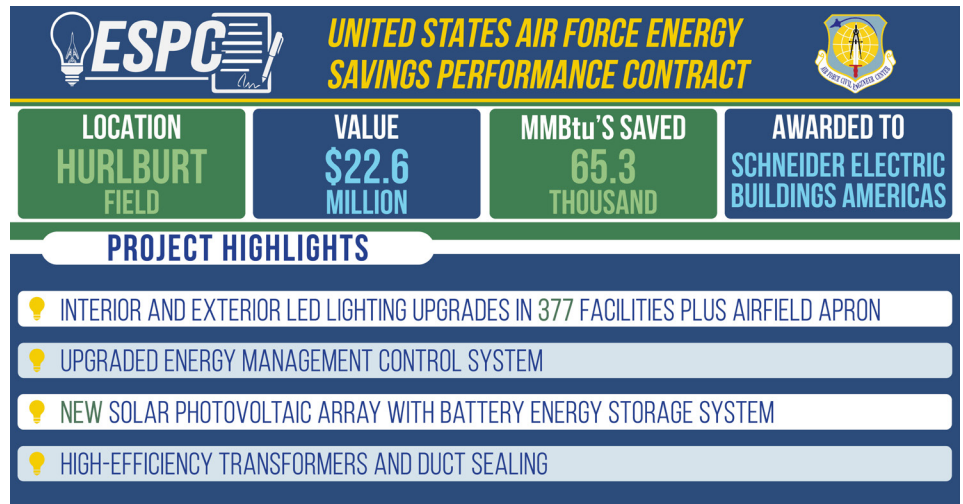
ESPC awarded for Hurlburt Field

By Emily Mifsud
AFIMSC Public Affairs

TYNDALL AIR FORCE BASE, Fla. — Hurlburt Field, Florida, is set to receive energy efficiency infrastructure improvements following the July 21 award of an Energy Saving Performance Contract by the Defense Logistics Agency-Energy.

The \$22.6 million ESPC Task Order, awarded to Schneider Electric Buildings Americas, Inc., is a collaborative effort between DLA-Energy, Hurlburt Field and the Air Force Civil Engineer Center — a primary subordinate unit of the Air Force Installation and Mission Support Center — to support Hurlburt’s energy assurance needs.

The project will reduce energy consumption and maintenance costs, supporting the Air Force’s goal to improve resilience, optimize demand and assure a vital energy supply for every mission. The ESPC includes six Energy Conservation Measure upgrades to 377



(U.S. Air Force graphic by Courtney Combs)

facilities and will save 65,286 million British thermal units of energy annually.

“The 1st Special Operations Civil Engineer Squadron personnel have put in a lot of effort to reach the final ESPC contract, and I’m extremely pleased with the outcome,” said Steve Loken, Hurlburt Field CE electrical engineer.

“The installation of new equipment and the standardization of the lighting and direct digital control equipment will reduce maintenance and energy consumption. We appreciate the collaboration between DLA-Energy and AFCEC to

[continued on pg. 3](#)

Air Force awards UESC at Holloman AFB

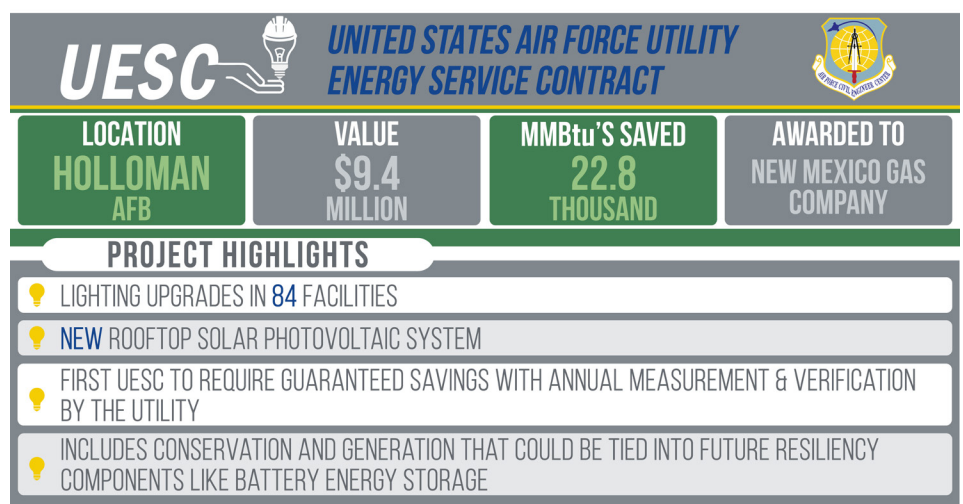
By Emily Mifsud
AFIMSC Public Affairs

TYNDALL AIR FORCE BASE, Fla. — Holloman Air Force Base, New Mexico, is receiving energy efficiency and infrastructure improvements through a recently awarded Utility Energy Service Contract.

The contract was awarded May 14 by Holloman’s 49th Contracting Squadron in partnership with the Air Force Civil Engineer Center’s Energy Directorate.

The \$9.4 million UESC Task Order, awarded to New Mexico Gas Company, Inc., is a collaborative effort between the utility service company, Holloman AFB and AFCEC — a primary subordinate unit of the Air Force Installation and Mission Support Center.

The contract will support Holloman’s energy assurance needs by reducing energy consumption and maintenance costs, to support the Air Force’s goal to improve resilience, optimize demand and



(U.S. Air Force graphic by Courtney Combs)

assure a vital energy supply for conservation and resiliency measures.

The award is expected to generate an energy savings of 22,810 million British thermal units.

“This UESC award marks a milestone in the Air Force third-party financed program

with the inclusion of guaranteed savings, annual measurement and verification inspections, reducing the financial risks to the Air Force,” said Mark Dent, project manager for AFCEC’s Energy Directorate.

[continued on pg. 3](#)

ERCIP


continued from pg. 1

The work includes the replacement of six non-functional wind turbine generators with a single 900 kW WTG, a Battery Energy Storage System and an upgraded Supervisory Control and Data Acquisition system. The generator uses a renewable resource that will supplement primary power plant production and provides an alternate energy source if fuel resources are disrupted.

The battery-based energy storage system, or BESS, will act as instantaneous backup for the existing diesel engine generators should one of them fail. The BESS will connect to the existing electrical generation and distribution system, along with the upgraded SCADA system, ensuring seamless and efficient monitoring and operation of the overall utility generation system.

"Ascension Island is currently 100% dependent on diesel generation for electrical power with all fuel shipped to the island," said Robbie Marcucci, ERCIP program manager. "The project will extend support for mission critical operations by maximizing fuel reserve capacity in the event of fuel supply shortages or interruptions."

The effort is expected to reduce annual

ERCIP ENERGY RESILIENCE AND CONSERVATION INVESTMENT PROGRAM 			
LOCATION ASCENSION ISLAND AUXILIARY AIRFIELD	VALUE \$11.3 MILLION	FUEL REDUCTION 15-20 PERCENT	AWARDED TO JADE CREEK CONSTRUCTION, LLC
PROJECT HIGHLIGHTS			
💡 A 900 KW WIND TURBINE GENERATOR WILL REPLACE 6 NON-FUNCTIONAL WTGS			
💡 UPGRADED SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM			
💡 NEW BATTERY ENERGY STORAGE SYSTEM			
💡 FIRST ERCIP PROJECT FOR SPACE LAUNCH DELTA 45			

(U.S. Air Force graphic by Courtney Combs)

fuel consumption by 15% to 20% of the installation's total electrical demand. Construction is expected to be complete in early 2023.

"Ascension Island plays a significant role in the U.S. Space Force mission in the Eastern Range, and we prioritize continuous utility operation improvements and efficient use of the resources delivered to the Island," said Vidal.

The ERCIP program is a critical element of the defense-wide military construction program for installations to improve energy resilience, energy security and energy

conservation. It provides opportunities for installations to produce and utilize clean renewable energy among other conservation measures to reduce energy demand and carbon footprints. To date, AFCEC has collaborated with contracting groups to develop and award more than \$405.6 million in energy resilience and savings contracts since 2004.

Installations interested in pursuing energy projects can visit the CAC-enabled web site for the Office of Energy Assurance at <https://portal.afcec.hedc.af.mil/Storefront/SitePages/Home.aspx>.

ESPC

continued from pg. 2

get us to the finish line."

The project scope includes an upgraded energy management control system, high-efficiency transformers, duct sealing, and interior, exterior and airfield apron LED lighting upgrades. In addition to infrastructure upgrades, the ESPC will also deliver a 240kW solar photovoltaic array with a 200kW/112 kWhr battery energy storage system for the base central mainframe facility, a critical node to Air Force Special Operations Command.

"This ESPC project stabilizes electrical power for this mission-critical facility," said Mark Dent, ESPC project manager. "Providing power to the mainframe facility improves resiliency and protects vital AFSOC missions from interruption."

Construction is set to begin this month and is expected to be complete by February 2023.

The ESPC program is a tool for installations to make smart energy decisions, optimize energy using 21st century technologies and support mission assurance through energy assurance. To date, AFCEC has collaborated with contracting groups to develop and award more than \$1.4 billion in energy savings contracts since 2015. Installations interested in pursuing energy projects can visit the CAC-enabled web site for the Office of Energy Assurance at <https://portal.afcec.hedc.af.mil/Storefront/SitePages/Home.aspx>.

UESC

continued from pg. 2

As part of the 20-year performance period, the utility will conduct annual M&V inspections and reporting to verify savings are being achieved per the contract. Beyond the notable milestone, the UESC at Holloman AFB includes both conservation measures and power generation for use with future resiliency components, such as battery energy storage.

The project scope provides for LED lighting upgrades in 84 facilities covering 1.9 million square feet and the installation of solar photovoltaic roofing system. The structures selected for the solar roofing are "T" structures used for equipment and material storage that act as sunshades.

The UESC program allows servicing utilities to provide government customers with energy and water efficiency improvements and demand-reduction services by leveraging third-party funds for energy conservation measures. Since 2015, AFCEC has collaborated with contracting groups to develop and award more than \$1.4 billion third-party contracts.

Installations interested in pursuing energy projects can visit the CAC-enabled web site for the Office of Energy Assurance at <https://portal.afcec.hedc.af.mil/Storefront/SitePages/Home.aspx>.

Malmstrom AFB receives hydropower allocation, reducing costs and carbon footprint

By Maj. Holly Buchanan

Utility Litigation Attorney at ULFSC

TYNDALL AIR FORCE BASE, Fla. — Malmstrom Air Force Base, Montana, began receiving hydropower from the Western Area Power Administration on Aug. 1. This new allocation, which provides Malmstrom AFB with up to four megawatts of its power through federally-owned renewable hydroelectricity generation, significantly reduces the base's annual electricity costs and has the potential to reduce the base's carbon footprint by up to 31 million pounds per year.

The result of several years of litigation and negotiations, this achievement was a hard-fought, collaborative effort between the Air Force Civil Engineer Center's Utility Rate Management Team, Utility Law Field Support Center, WAPA and Malmstrom.

The process for getting Malmstrom AFB hydropower began in 2016 when the URMT, in coordination with its consulting team from Exeter Associates, discovered another installation

was underutilizing its full WAPA hydropower allocation from WAPA's Upper Great Plains region. An affordable and renewable energy source, federal hydropower is available primarily to federal agencies and select government and non-profit groups, as authorized by the Flood Control Act of 1944 and implementing laws and regulations.

"Given its low cost and carbon footprint, getting an allocation of WAPA hydropower can be hard to come by. Naturally, we wanted to make sure we were able to fully utilize our allocation and maximize the benefits to the Air Force," said Nancy Coleal, Chief of URMT.

URMT determined that to optimize the Air Force's share of federal hydropower, the unused portion of the allocation should be moved to Malmstrom, which could benefit financially and environmentally from hydropower and is also in WAPA's UGP region.

[*continued on pg. 8*](#)



This 2018 view from the crest of Hoover Dam shows Lake Mead at an elevation of about 1,088 feet above sea level. This year, the Bureau of Reclamation may declare a shortage for the first time in the lake's history. (Photo by Alex Stephens)

51st CES concludes 6th annual Energy Cup

51st Fighter Wing Public Affairs



FY21 Energy Cup 1 Oct 20 – 30 Jun 21

OSAN AIR BASE, Republic of Korea
— The 51st Civil Engineer Squadron's 6th Annual Energy Cup Competition recently ended on June 30, 2020 after nine months of competition.

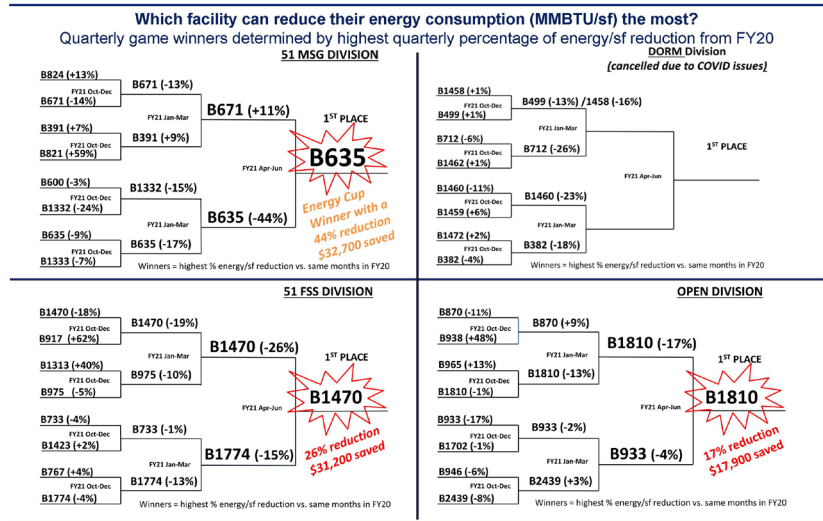
Each year, facility managers at 32 facilities help their occupants employ energy saving practices at their facilities.

In the bracketed tournament portion of Fiscal Year 2021 Energy Cup competition, Building 635 won the 51st Mission Support Group Division head-to-head tournament; Building 1810, managed by 51st Aircraft Maintenance Squadron, won the 51st Maintenance Group Division bracket with a cumulative 17% energy reduction and Building 1470, the Gingko Tree Dining Hall, won the 51st Force Support Squadron Division with a 26% energy reduction.

Energy reduction scores are tallied by comparing the energy consumption at each facility in this fiscal year with their facility's energy consumption during the same period in the previous fiscal year. The 32 facilities in this year's competition reduced energy consumption costs by \$596,400. Electricity savings alone was \$352,000.

"This competition is fair for all-sized facilities, because each facility's current energy consumption is compared to the same facility's consumption during the same time period in the previous fiscal year," said David Moysey, 51st CES Resource Efficiency manager. "The competition is a great way to increase awareness in conserving energy and water on the base."

Building 635, the 51st Logistics Readiness Squadron Traffic Management Office facility, reduced total energy consumption by 44% compared to energy usage during the same nine months of the previous fiscal year. Electricity use was reduced by 28% kilowatt-hours per square foot and heating energy use per square foot was reduced by 54% for a total energy savings of \$32,700. Most of the reduction of electricity consumption was due to the facility manager and shop leads ensuring unnecessary wall and ceiling infrared lamps were turned off in the warehouse.



Feel the Thunder!

POC: David Moysey
DSN: 784-9176

"This competition is fair for all-sized facilities, because each facility's current energy consumption is compared to the same facility's consumption during the same time period in the previous fiscal year."

David Moysey,
51st CES Resource Efficiency Manager

Building 635's Facility Manager Staff Sgt. Hal Chambliss, 51st LRS outbound cargo supervisor, said minimal manning due to COVID-19 last year, should have caused the electricity consumption to be less in FY 2020, but electricity consumption was significantly lower during normal manning in FY 2021. Chambliss said that at the close of each business day, their checklist includes turning off all unneeded lighting in the warehouse and offices.

Building 1333, the 51st LRS Vehicle Operations facility, reduced its electricity use per square foot by 33% and heating fuel consumption by 31%, for a total energy reduction of 30%.

Building 1333's Facility Manager Senior Airman Carlos McKinnon, 51st LRS ground transportation vehicle operator, said the occupants of the facility ensured all lights were turned off when not needed.

McKinnon also served as his facility's tank custodian and kept track of the fuel tank's gauge readings and the heating fuel tank gauge readings during fuel deliveries, which played a role in reducing heating fuel overbillings to 4%, much lower than the base's average shortage of 8.5%.

Building 870, the Airfield Operations and Control Tower, managed by the 51st Operations Support Squadron, reduced electricity use by 37% and heating energy by 31%, for a total decrease of 29%. The total energy cost savings was \$28,000. LED lighting upgrades and a conversion to natural gas significantly helped to decrease energy costs, but the occupants also did their part to ensure lights were turned off in unoccupied areas.

Now that this year's competition is over, 51st CES is making plans to host the next competition, which begins now and marks the beginning of Osan's Energy Action Month. Participating facilities that did not reduce energy use during FY 2021 will automatically be entered in FY 2022's 32-facility competition.

Meet Deven Volk, Division Chief of the Measurement & Analysis Division**Please tell us about your experience/background.**

I grew up on a dairy farm in North Dakota and graduated from the Air Force Academy in 1981, followed by 15 years as a civil engineer officer before taking early retirement. The highlight of my 15 years was serving two-and-a-half years in Saudi Arabia and finally retiring, being stationed back at the Air Force Academy. After retiring in 1996, I became the city manager in Buena Vista, Colorado, a small mountain town and eventually moved on to work for a utility company in Colorado Springs.

In 2002, I came to be the chief of programming at the Air Force Academy as a contractor and moved to Headquarter Space Command at Peterson AFB, Colorado, as Major Command Project Programmer in 2008. In 2013, I moved to Tyndall AFB, Florida, as an AFCEC Energy Analyst to be the AF Energy functional lead for NexGen IT energy deployment to prepare the Annual Energy Management and Resilience Report. In 2019, I moved to AF Facility Sustainment, Restoration and Modernization Energy Savings Program Manager. This year, I was hired to fill the vacant division chief position. One of the things I told the staff is, "The good news is that I know what you do. The bad news is that I know what you do."

Describe your role at AFCEC.

As the division chief, I not only get to work on cool programs (AEMRR, Data Decision Dashboard Tool, NexGen are some of them), I also inherited a great staff of folks who are propelling our division into the future. Also in my new role, I'm able to participate in more senior-level meetings and discussions to help identify and solve more enterprise level issues.

What is the best thing about your job?

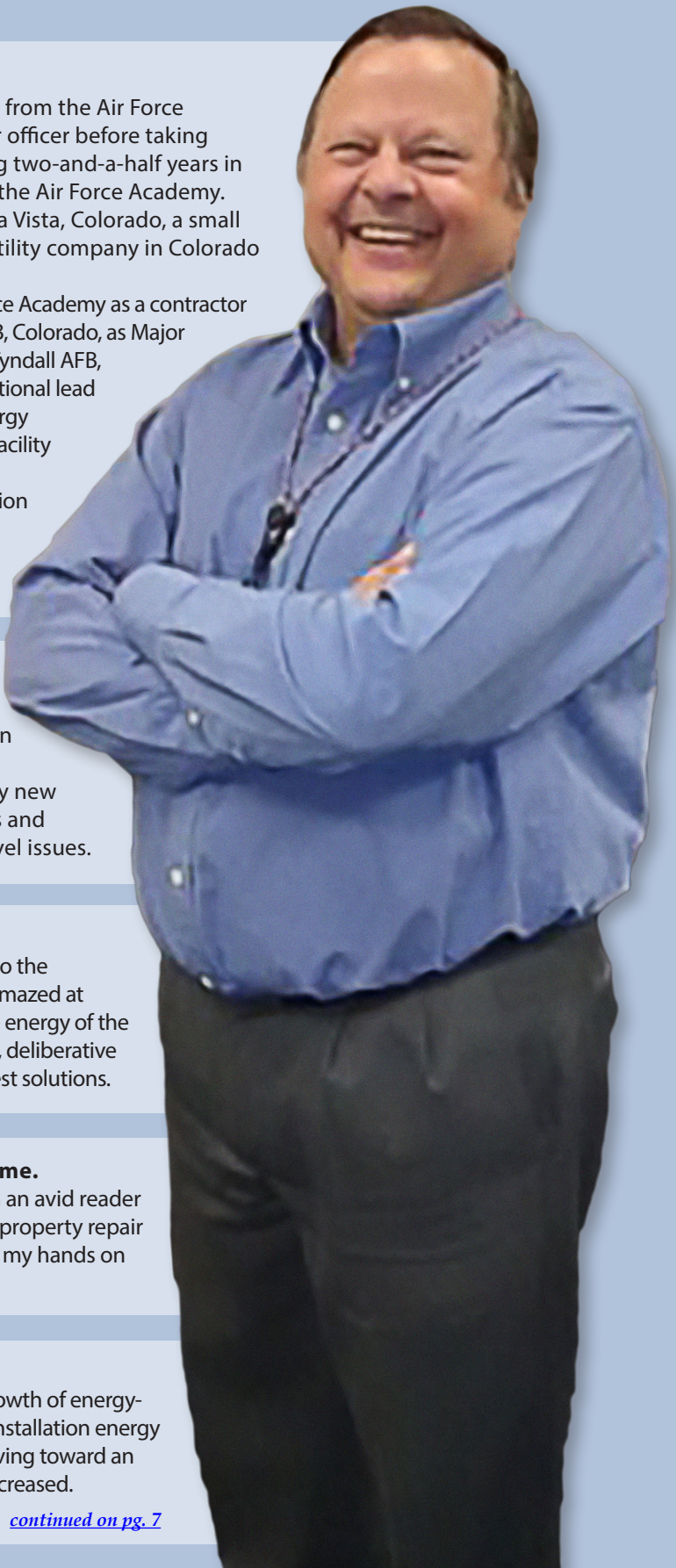
Definitely being able to work with not only the CNA team, also the whole CN, Office of Energy Assurance and energy team. I'm amazed at the breadth of issues energy touches as well as the incredible energy of the folks I'm meeting who drive the enterprise. There is extensive, deliberative discussion which is the best way to work and results in the best solutions.

Tell us about the hobbies you enjoy in your down time.

Hurricane Michael completely changed my down time. I am an avid reader and now have added much more yard work and continued property repair to my list. I grew up on a dairy farm and enjoy working with my hands on projects around the house and yard.

What do you see as the biggest energy challenge?

The biggest challenge I see for AF energy is the continued growth of energy-related issues needing to be addressed against diminishing installation energy manager resources. We've seen the energy manager role moving toward an additional duty status when the demand on their time has increased.



[continued on pg. 7](#)

Energy Exchange 2021

Key takeaways and the future outlook of energy

By Emily Mifsud
AFIMSC Public Affairs

TYNDALL AIR FORCE BASE, Fla. — Members of the Air Force Civil Engineer Center's Energy and Office of Energy Assurance Directorates recently attended the Department of Energy's Energy Exchange 2021, Aug. 2-6. In addition to staying up to date with ever evolving energy technology, federal leadership also provided several key takeaways regarding the current state of energy.

Twenty-three members of AFCEC's Energy team attended the virtual Energy Exchange "Connecting to the Future" and participated in interactive sessions that explored leveraging energy solutions to enhance efficiency, resiliency and secure support for continuous mission operations. With several educational tracks to choose from, the team focused on those involving topics of Sustainable and Climate Resilient Buildings and Infrastructure, Financing and Implementing Federal and Water projects and Future Focused Facilities.

Installations are a major contributor to the government's overall energy consumption, with 59% of federal government energy coming from buildings. Although the Air Force's number one energy user is aircraft, Andrews Mayock, Federal Chief Sustainability officer, said the federal government will continue to implement sustainable options to reduce installation energy consumption. He also stated that aggressive goals have been laid out for the federal government with a new Federal Sustainability plan expected to be issued in the coming months which will include net-zero emissions and 100% carbon-free electricity by 2050.

Richard Kidd, Deputy Assistant Secretary of Defense for Environment and Energy Resilience, stressed the importance of aligning federal sustainability goals with mission resilience. He emphasized the



"The world is changing, and we at the DOD can't afford to stand still. We need to compete for the energy technologies that will define the future. Our economy – and military capability – depend on it."


*Joseph Bryan,
Senior Climate Advisor to the
Secretary of Defense*

significance of on-base microgrids, which are expected to make up one-third of the overall market for microgrids, with pilot projects being prioritized over the next few years for efforts towards increased sustainability. Additionally, Energy Resilience and Conservation Investment Program projects are expected to grow to \$300-\$400 million per year, from the current yearly allocation of \$150 million.

Climate was another major key component discussed at Energy Exchange. Joseph Bryan, Senior Climate Advisor to the Secretary of Defense, emphasized there is "not a conflict between the mission and climate."

Given that climate change is affecting the globe – from droughts, typhoons, hurricanes, flooding and wildfires – the market for energy technologies is evolving fast, and renewables will account for 90% of new power capacity additions globally over the next two years, said Bryan.

A Climate Adaptation Plan will also be forthcoming to ensure the Department of Defense can operate under changing climate conditions, preserving operational capability and enhancing the natural and man-made systems essential to the department's success.


"The world is changing, and we at the DOD can't afford to stand still," said Bryan. "We need to compete for the energy technologies that will define the future. Our economy – and military capability – depend on it." 

2021 AFIT Training

The AFIT WENT 466 Facility Energy Manager training was held recently to provide new energy managers with the tools and resources necessary to ensure they are able to make informed energy decisions at their installations. Participants received the opportunity to learn from senior Air Force leadership and other energy managers who shared their extensive experience on energy policy, legislation and responsibilities.

Mark Correll, the Deputy Assistant Secretary, presented "Installation Energy and Water" during the training where he discussed approaches to resiliency along with a snapshot of the current plans.

"Energy managers receive 'hit the ground running' information from senior leaders to program managers across the Air Force energy enterprise," said Rafael Hervas, Energy Directorate AFIT class program manager. "The ability to balance daily work while keeping a strategic eye on making the installation more energy resilient is critical to the mission."

This year, 35 base energy managers were able to attend and successfully complete this training, ensuring they are able to implement and improve energy resiliency across the Air Force. 


VOLK

continued from pg. 6

What is your favorite energy-saving tip for Airmen?

Every Airman can do the little things to save energy. Every little thing by thousands adds up to a lot of energy savings. Make saving energy at work as important as reducing your electric and gas bill at home.

What professional/career aspect will you miss the most upon retiring?

Interestingly, my wife and I have our eye on that retirement target. For sure I'll be missing the continuous people interaction of working. Working is definitely more than just 'work,' the people make it a family. I jokingly say I'm a civil engineer with the emphasis on the civil part not the engineering part. No one ever accused me of being an excellent engineer. 

OEA hosts Energy Exchange Side Bar

By Emily Mifsud
AFIMSC Public Affairs

In an effort to further connection across the Air Force Civil Engineer Center's Energy Directorate, the Air Force Office of Energy Assurance held the OEA Energy Exchange Side Bar to coincide with the sixth annual Energy Exchange.


"The Office of Energy Assurance envisioned a virtual sidebar presentation with the goal of bringing together stakeholders from industry and other government offices to discuss OEA updates

as well as give a short presentation on Decarbonized Energy Resilience," said Kirk Phillips, OEA director.

The event focused on educating and informing potential government contractors, as well as installation personnel, on how they can work with OEA and the AFCEC Energy team. OEA provided updates on current activities and the benefits and value to be gained through partnerships with them on future Air Force energy projects. Other organizations, including AFCEC's Energy and Installations Directorates, also presented to provide participants with a

broader understanding of Air Force Energy.

Additionally, OEA presented an informative presentation on energy resilience and climate, and the actions the Air Force is taking to ensure mission assurance through energy assurance. Overall, this virtual event was considered a success by organizers with over 100 participants joining in.

"As a result of hosting the sidebar, we saw increased interest in learning more about how we partner with outside industry and how stakeholders can contact OEA," said Phillips. "The side bar proved to be a successful way to initiate conversation with new stakeholders while keeping current ones informed." 

MALMSTROM AFB

continued from pg. 4

The allocation will also benefit the community and Malmstrom's electric provider by bringing in a carbon-free power source that can be shaped to match the base's demand on the electric system, freeing up other renewable power sources during peak demand, while also reducing the utility's need to purchase more expensive wholesale power from outside the state during these times.

Once it was decided that Malmstrom would be an ideal location for the unused hydro allocation, URMT attempted to discuss the logistics of the allocation with the installation's local electric provider. Unfortunately, the parties were unable to reach an agreement regarding the hydropower allocation since the utility believed legal obstacles were preventing the delivery of WAPA hydropower to Malmstrom.

In 2018, after learning the utility had filed a rate case before the Montana Public Service Commission, URMT asked the ULFSC, the Air Force's utility litigation and legal support team, to intervene in the rate case and request the commission's approval of the hydropower allocation.

URMT and ULFSC collaborated to develop testimony, cross-examination strategy and legal briefs explaining to the commission that the Air Force, as a unique federal customer, is legally allowed to receive WAPA hydropower, and the allocation would also benefit the utility's other customers by displacing the need for more expensive power purchase agreements. Consequently, all customers would see lower costs.

"The ULFSC worked diligently with the

"Given its low cost and carbon footprint, getting an allocation of WAPA hydropower can be hard to come by. Naturally, we wanted to make sure we were able to fully utilize our allocation and maximize the benefits to the Air Force."

Nancy Coleal, Chief of URMT

URMT to craft a litigation position the commission could understand and support," said Coleal.

The ULFSC worked with the utility and other parties in the rate case to reach a settlement on several contested issues, avoiding a majority of the requested rate increase, resulting in fair and stable rates for Malmstrom and the surrounding community. However, despite the partial settlement, the utility continued to oppose the Air Force's position on the WAPA hydropower allocation throughout the rate case proceeding, arguing it violated state law.

"Ultimately, the ULFSC's brilliant research and argument to the commission won its approval," said Coleal.

The utility unsuccessfully requested reconsideration of the commission's ruling, which directed the utility to engage in negotiations with the Air Force to develop an arrangement under which Malmstrom could receive a portion of its load from WAPA. In the end, the utility worked with WAPA on wholesale agreements that overcame the legal obstacles, enabling Air Force negotiations to move ahead.

URMT took lead on negotiations and worked with the utility, WAPA and


Malmstrom to come up with a solution to maximize benefits to both the base and utility.

The expertise of the URMT and its expert consultants in WAPA hydropower allocations and Coleal's strong working relationship with WAPA proved to be instrumental in the negotiations.

Thanks to the URMT's efforts, WAPA and the utility were able to reach an agreement for Malmstrom to receive its hydropower allocation, and entered into a Service Agreement for Network Integration Transmission which was subsequently approved by the Federal Energy Regulatory Commission earlier this year.

Although not a typical situation, the result highlights the power of teamwork and persistence.

The time and effort put in proved to be worth it for the Air Force. The new WAPA allocation for Malmstrom AFB will result in lower energy bills and a reliable, clean, renewable energy source for the base.

By lowering its energy bill, Malmstrom can now spend more of its operations and maintenance budget defending America with combat-ready Airmen and nuclear forces. 

Zero-Emission Vehicles: The Future of Fleet Mobility

By SAF/IEE Energy Team

The Department of the Air Force uses more than 75,000 vehicular assets to perform its mission at more than a hundred installations.

That is more than 75,000 opportunities to increase installation energy resilience, reduce military oil dependency, decrease operations and maintenance costs and align with the Biden Administration's greenhouse gas reduction target.

But the question remains, how do we accomplish this quickly in a coordinated effort across the enterprise?

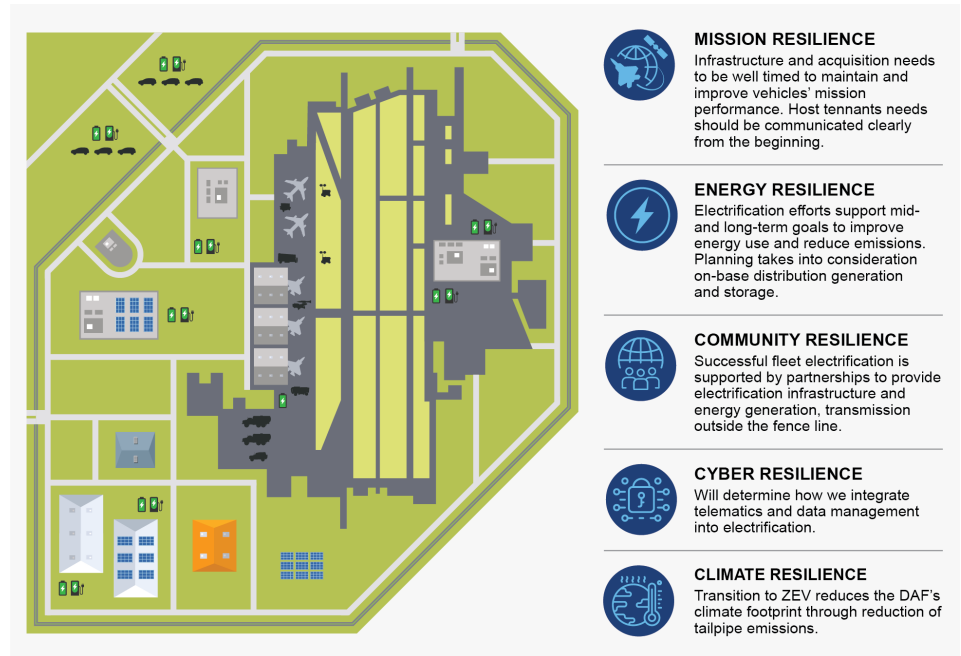
Historically, DAF vehicular assets have primarily relied on petroleum-based fuels supplied through DLA-Energy via a proven and reliable on-base fuel distribution network. But, requirements are changing and rapidly.

Industry, consumers, and now the President are steering the market towards zero-emission vehicles, or ZEVs, with the chance of reducing the availability of traditional petroleum powered vehicles in the future.

In response to Executive Order 14008, the DAF is working to develop policy and guidance for not only electrifying the non-tactical vehicle fleet but also creating a strategic energy resilience ecosystem where the fleet has the infrastructure it needs to successfully operate.

With this wave of innovation, DAF plans to leverage existing energy resilience efforts such as Installation Development Plans and Installation Energy Plans to develop a comprehensive and scalable approach to electrifying the vehicle fleet by the 2035 carbon pollution-free electricity goal. Ultimately, we hope to ensure the electric vehicle support equipment, or EVSE (e.g., charging stations), is available when and where the mission needs it.

The Office of the Assistant Secretary of the Air Force for Energy, Installations, and Environment is developing the planning processes at two pilot sites, Joint Base Andrews, Maryland, and Joint Base McGuire-Dix-Lakehurst, New Jersey. The



MISSION RESILIENCE
Infrastructure and acquisition needs to be well timed to maintain and improve vehicles' mission performance. Host tenants needs should be communicated clearly from the beginning.

ENERGY RESILIENCE
Electrification efforts support mid- and long-term goals to improve energy use and reduce emissions. Planning takes into consideration on-base distribution generation and storage.

COMMUNITY RESILIENCE
Successful fleet electrification is supported by partnerships to provide electrification infrastructure and energy generation, transmission outside the fence line.

CYBER RESILIENCE
Will determine how we integrate telematics and data management into electrification.

CLIMATE RESILIENCE
Transition to ZEV reduces the DAF's climate footprint through reduction of tailpipe emissions.



Enterprise Fleet Electrification Building Blocks			
Mission and Readiness	Goals & Timelines	Funding Mechanisms	Infrastructure Planning, Acquisition & Sustainment
Energy Resilience	Acquisition Models	Stakeholder Mapping & Coordination	Transaction Management & Accounting
Enterprise Data Management	Cyber Security	Leased vs Owned Vehicles	GOVs vs POVs
Maintenance Training & Manpower	Host/Tenant Arrangements	Fleet Use Cases	Legislative & Regulatory Requirements
Shared Assets	Partnerships	Privatization	Leadership

process, represented in the five-phased approach at right, considers various complex building blocks to lay the groundwork for the future fleets at all DAF installations.

The anticipated benefits of this demonstration include the enhanced ability for the Air Force to:

- Ensure the availability of, and required technology for, ZEVs meet the needs of

DAF vehicle requirements;

- Integrate ZEV planning with existing installation master planning and fleet management practices;
- Define enterprise standards for energy and cyber resilience to accompany installation-specific EVSE, such as charging stations;

continued on pg. 10



Save the Date



POWER UP ENERGY EXPO

Nov. 3 & 4, 2021
Panama City Beach, Florida

PowerUpEnergyExpo.com

ZEVs

continued from pg. 9

- Identify acquisition strategies that leverage third-party financing approaches to reduce required DAF capital; and
- Identify and catalogue ZEV technology gaps for future research and development initiatives.

Installations and their missions are at the core of all energy resilience planning. It's imperative that we work together to address the intersecting elements that this approach considers and identify additional opportunities to accelerate our adoption of ZEVs. If your installation is interested in joining the transition to ZEVs, talk to us about how we can coordinate.

Contact Seema Aziz-Hall at seema.aziz-hall@us.af.mil or Douglas Tucker at douglas.tucker.4@us.af.mil.

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

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Energy Express is a publication of the Air Force Civil Engineer Center, Detachment 1, Tyndall AFB, Florida.

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



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