The Department of Defense's Clean Energy and Energy Resilience Programs and Policies

May 2, 2023

CleanEnergy States Alliance

Energy Modeling for Decarbonization Planning

Webinar Logistics

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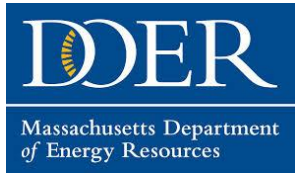

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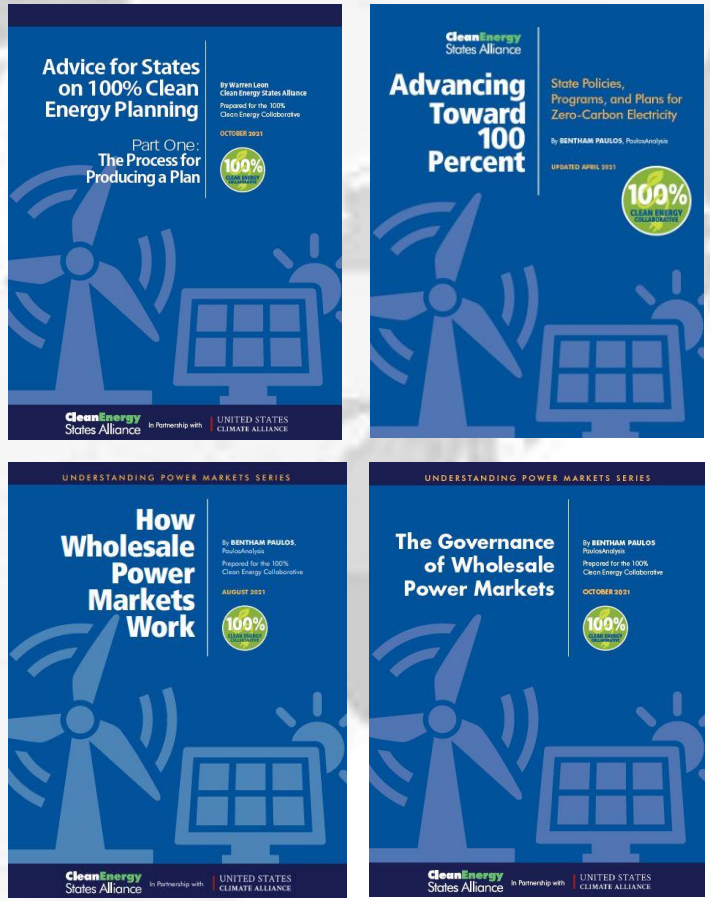
UNITED STATES CLIMATE ALLIANCE

100% Clean Energy Collaborative Resources

The 100% Collaborative produces frequent webinars, a monthly newsletter, and periodic reports. We also host working group meetings for state representatives.

CESA's *Guide to 100% Clean Energy States* includes:

- Table of 100% Clean Energy States
- Map and Timelines of 100% Clean Energy States
- Summaries of State 100% Clean Energy Plans
- Visual Comparison of State 100% Clean Energy Plans
- State Legislation, Plans, Reports, and Other Documents
- State Monitoring, Reporting, and Verification (MRV) Procedures



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Webinar Speakers

Sam Schacht
Research Associate, Clean Energy States Alliance

Wilson Rickerson
Principal and Co-Founder, Converge Strategies

Margit Myers
Project Manager, Office of Local Defense Community Cooperation

Shannon Bergt
Energy Manager, US Army Garrison Detroit Arsenal

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CONVERGE STRATEGIES

U.S. Department of Defense
Office of Local Defense Community Cooperation

Thank you for attending our webinar

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Learn more about the **100% Clean Energy Collaborative** at www.cesa.org/100

Upcoming Webinar

Building a Resilient Workforce: The Detroit Clean Energy Contractor Accelerator Program

Wednesday, May 3, 1-2:30pm ET

Read more and register at www.cesa.org/webinars

The Department of Defense (DoD)'s Clean Energy and Energy Resilience Programs and Policies

2 May 2023

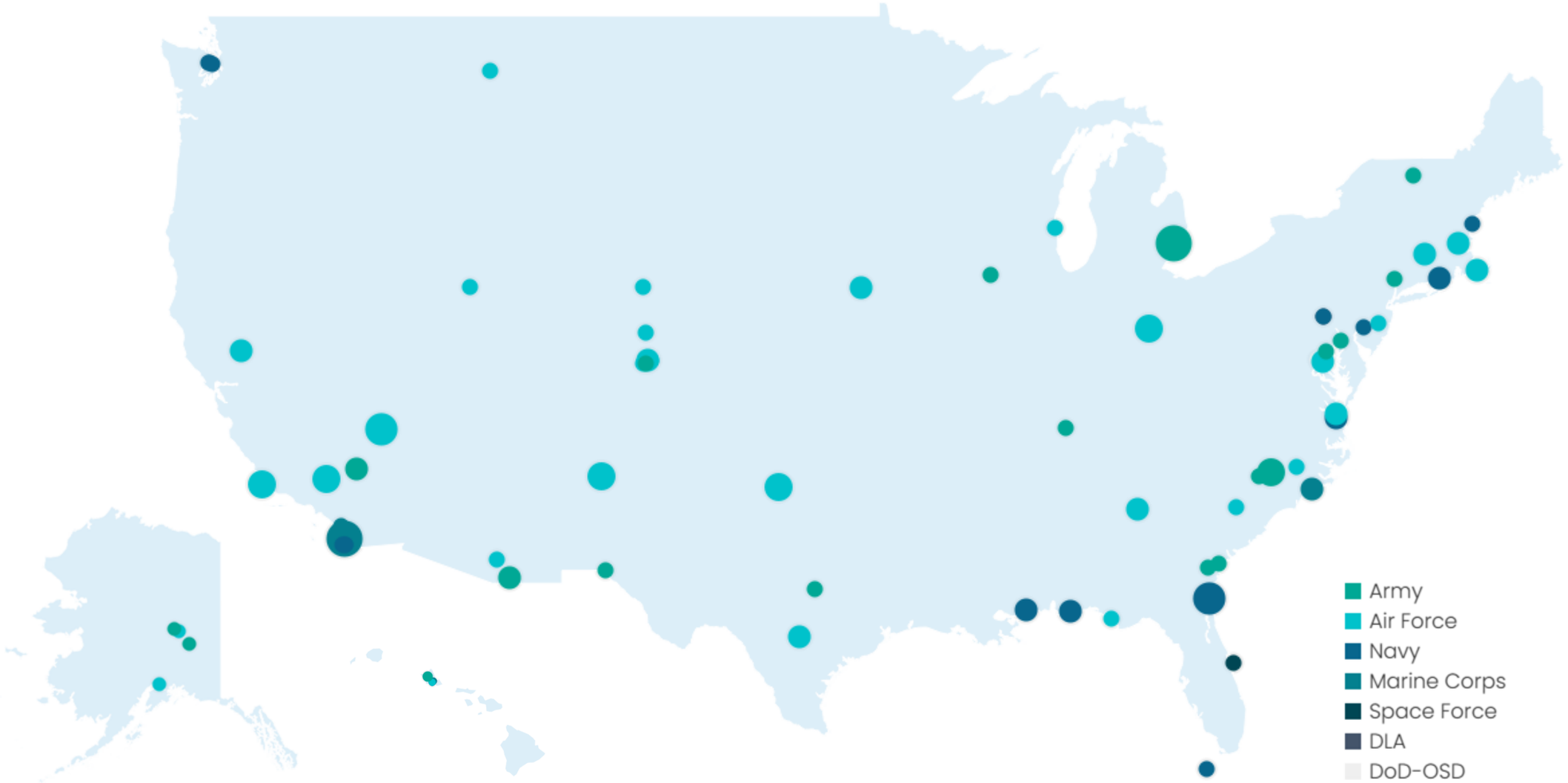
CONVERGE
STRATEGIES

We are focused on the intersection of **clean energy**, **resilience**, and **national security**.

Our mission is to **integrate resilience and security as first principles** in the clean energy transformation.

Our Engagement with DoD Installations

CONVERGE STRATEGIES



>80
Installations

>30
States

>10*
Exercises

** Includes tabletop and blackstart exercises.*

Naval Station Norfolk
Norfolk, Virginia

CONVERGE
STRATEGIES

>500

DoD installations worldwide

>300,000

Buildings

>160,000

Non-tactical vehicles

DoD Bases Are Almost Entirely Reliant On Civilian Infrastructure To Support Critical Missions

CONVERGE STRATEGIES

ELECTRICITY

98%

TELECOM

98%

NATURAL GAS

87%

WATER

76%

Source: *U.S. Government Accountability Office (2020a)*

Energy Resilience is a Central Tenet of DoD Energy Policy (10 U.S. Code § 2911)

CONVERGE STRATEGIES

> *"The ability to **avoid, prepare for, minimize, adapt to, and recover from** anticipated and unanticipated energy disruptions in order to ensure energy availability and reliability sufficient to provide for mission assurance and readiness including task critical assets and other mission essential operations related to readiness, and to execute or rapidly reestablish mission essential requirements."*

Source: 10 U.S.C. § 101(e)(6) (2018)

The Military Services Have Energy Resilience Targets

CONVERGE STRATEGIES

ARMY

"...a minimum of 14 days."

Army Directive 2020-03

March 2020

AIR FORCE

"...at least seven days."

Air Force Policy Directive 90-17

November 2016

NAVY

"...for 14 days or longer."

Installation Energy Resilience Strategy

February 2020

DoD Is Required by Law and Executive Order to Purchase Renewable Energy…

25%

Renewable energy by 2025
2007 NDAA

7.5%

Renewable Electricity by 2013
Energy Policy Act of 2005

100%

Carbon-Free Electricity by 2030
Executive Order 14057

… And DoD Invests in Renewable Energy for Mission Assurance

CONVERGE STRATEGIES

DoD Directive 4180.01

Establishes energy policy and guidance

DoD's energy policy is to "diversify and expand energy supplies and sources, including renewable energy sources" to "enhance military capability, improve energy security, and mitigate costs."

DoD Instruction 4170.11

Sets specific strategies related to energy resilience at military installations.

"Energy resilience solutions are not limited to…emergency generators. They can include integrated, distributed, or renewable energy sources.."

DoD's Integrated Approach to Energy Resilience

CONVERGE STRATEGIES

- **Targets:** 7 - 14 days resilience for critical missions
- **Plans:** Energy plans required for every installation (e.g., IEWP)
- **Energy program offices:** Identify and finance resilience project pipeline
- **Funding:** $635 million in FY 23 Energy Resilience and Conservation Investment Program (ERCIP)
- **Acquisition:** DoD energy acquisition authorities (e.g., ESPCs, PPAs, etc.) emphasize energy resilience

DoD Resilience Is Increasingly Shifting “Beyond the Fenceline” To Include Local Communities

CONVERGE STRATEGIES

4 **Bulk Supply**
Transmission, Transport

3 **Critical Infrastructure**
Electric, Gas, Water, Wastewater

2 **Local Community**
Critical Facilities, Community Lifelines

1 **Military Installation**
Critical Missions

DoD-State Partnership Opportunities

- Best Practice Exchange
- Community Resilience Funding
- Joint Resilience Planning

- Economic Development Funds
- Clean & Resilient Energy Programs
- Regulatory Support

NARUC Defense Critical Electric Infrastructure Partnership Case Studies

CONVERGE STRATEGIES

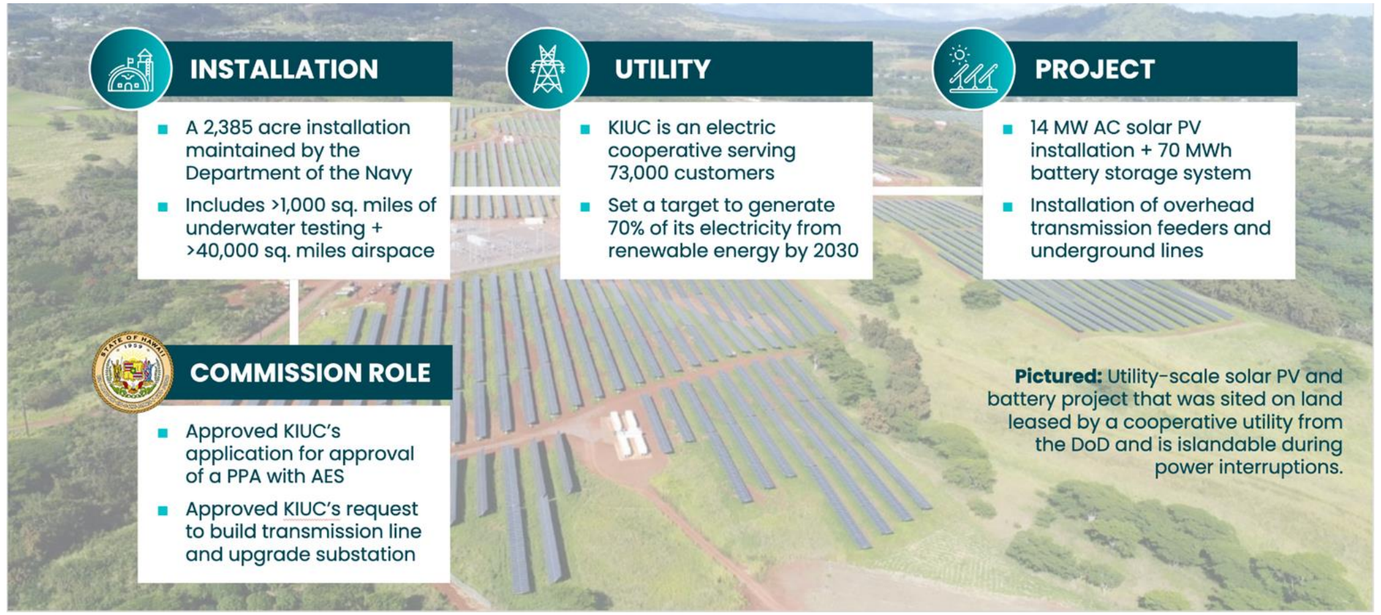
NARUC
National Association of Regulatory Utility Commissioners

Regulatory Considerations for Utility Investments in Defense Energy Resilience

Prepared for the National Association of Regulatory Utility Commissioners
Prepared by Converge Strategies, LLC

October 2021

Case Study: Pacific Missile Range Facility Barking Sands



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U.S. Department of Defense
Office of Local Defense
Community Cooperation

Office of Local Defense Community Cooperation

Installation Resilience Brief

Presented By:
Margit Myers
Installation Resilience Program Activity Lead

“One Community”

Local Installation(s) + Local Jurisdiction(s)

+State(s)

2

OLDCC Mission Statement

- Enables states and communities to:
  - plan and carry out strategies to support and enhance the military value of our installations, ranges, and test evaluation facilities;
  - partner with the Department, leveraging their comparative advantages to enhance economic, cyber and pandemic resiliency of the defense supply chain and advance competitiveness and innovation for our warfighters; and,
  - plan and carry out investments in public service and infrastructure to support mission growth at installations.

Resilience Authority

- 10 U.S.C. 2391(b)(5)(D): The Secretary of Defense may also make grants, conclude cooperative agreements, and supplement other Federal funds, in order to assist a State or local government in planning, enhancing infrastructure, and implementing measures and projects (to include resilience measures and projects involving the protection, restoration, and maintenance of natural features) that, as determined by the Secretary of Defense, will contribute to maintaining or improving military installation resilience or will prevent or mitigate encroachment that could affect operations of the Department of Defense.

U.S. Department of Defense
Office of Local Defense
Community Cooperation

Installation Resilience

Resilience Factors	
Flooding & Tidal Surge	Water Availability
Wind	Stormwater
Drought	Wastewater
Wildfire	Installation Energy
Earthquake	Operational Energy (logistics infrastructure)
Tornado & Severe Storm	Transportation (logistics)
Hurricane/Tropical Storm	Installation Access
Ice Storm	Communications
Air Space and Land Uses	Energy Compatibility
Airborne Noise	Air Quality
Urban Growth	Cultural Resources
Spectrum Encroachment	Marine Resources
Endangered Species	Security

U.S. Department of Defense
Office of Local Defense
Community Cooperation

Grant Overview

- Eligibility-based (non-competitive): Projects may be initiated either through a Military Service nomination or by a community inquiry
- Eligible applicants: State/regional/local governmental entities
- Planning grant (non-construction): Comprehensive resilience review or focused study (transportation, land use/encroachment, utility services, housing, stormwater management,) culminating in an action plan
- OLDCC technical and financial assistance also available to carry out implementation recommendations

U.S. Department of Defense
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Community Cooperation

Installation Resilience Roles

- **Installation**
  - Recommend and support the nomination
  - Represent installation interests (Installation Commander Ex-Officio member)
  - Provide releasable data!!!

- **Community**
  - One fiscal agent for OLDCC grant
  - Fund its part of the effort (10% non-Federal share)
  - Convene stakeholders
  - Implement recommendations

- **Office of Local Defense Community Cooperation**
  - Confirm need for assistance
  - Provide guidance to initiate, conduct and complete a community-driven effort
  - Facilitate communications between the local jurisdiction and the installation

U.S. Department of Defense
Office of Local Defense
Community Cooperation

California – Oregon Energy Infrastructure

- **Issue:** Renewable energy goals by California & Oregon are increasing demand for clean energy generating projects in existing commercial scale transmission infrastructure within key DOD operational areas and assets residing in Central and Southern Regions of California.
- **Action**: California Energy Commission
  - Assess compatible energy siting by accurately detailing existing electric infrastructure, to include generation, transmission, and distribution systems south of Coos Bay, Oregon to Mendocino, California
  - Provide detailed scenarios for different levels of potential offshore wind development based on geographic extent and the ability to deliver energy to California, Oregon, and the broader Western grid that could scale within the area of interest.

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U.S. Department of Defense
Office of Local Defense Community Cooperation

Defense Community Infrastructure Pilot Program

The Defense Community Infrastructure Pilot (DCIP) Program is designed to address deficiencies in community infrastructure, supportive of a military installation, in order to enhance military value, installation resilience, and military family quality of life.

FY23 Notice of Funding Opportunity is live – due June 23, 2023

Defense Community Infrastructure Pilot (DCIP) Program | Office of Local Defense Community Cooperation (oldcc.gov)

Joint Base Elmendorf-Richardson
Municipality of Anchorage, AK

$5,300,000 to the Municipality of Anchorage, Alaska in support of Joint Base Elmendorf-Richardson to undertake a $7,600,000 project to construct a new Port of Alaska microgrid, battery energy storage, and electrical infrastructure to provide energy resilience for the region.

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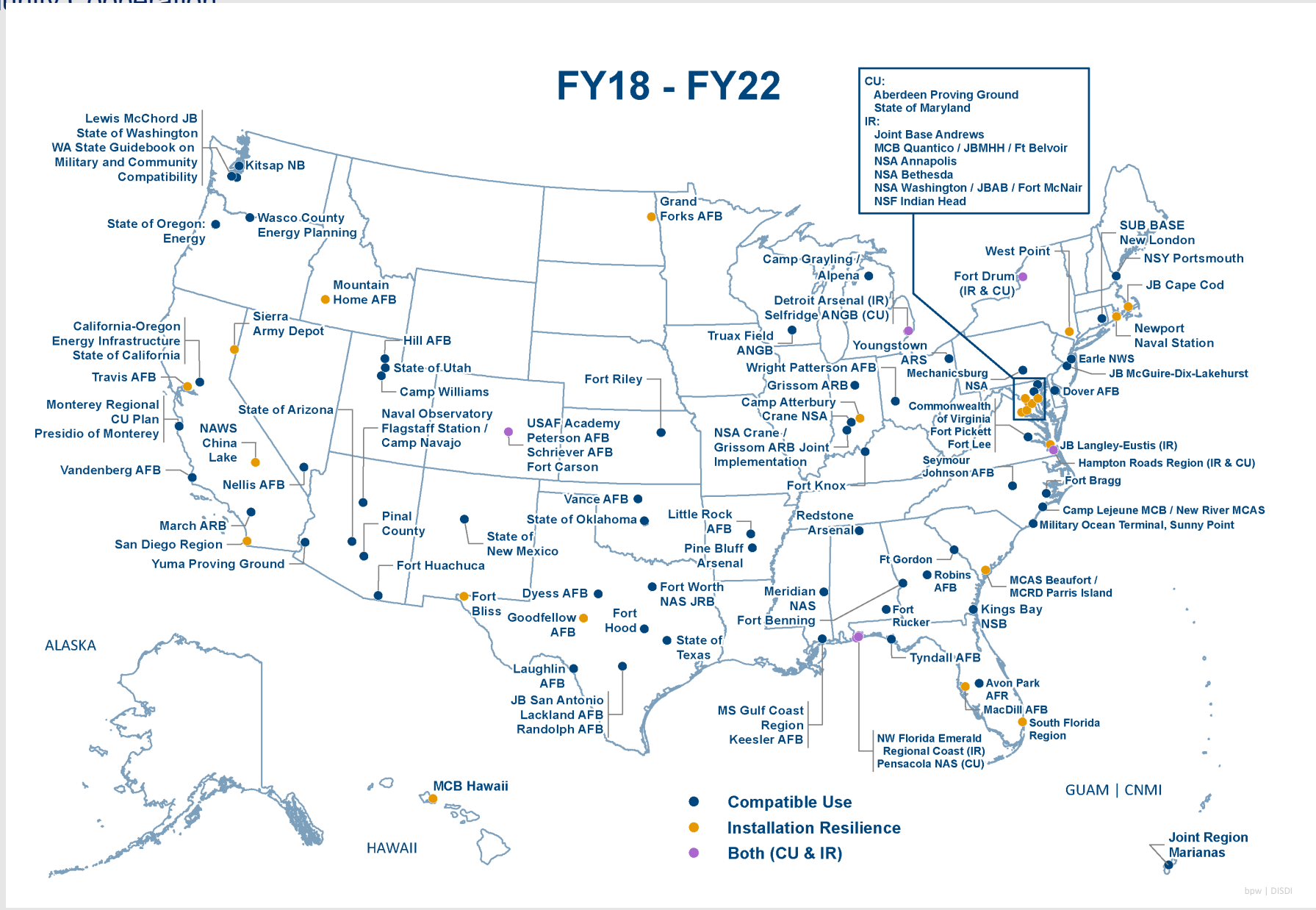
U.S. Department of Defense
Office of Local Defense Community Cooperation

Grants Awarded since FY2018



Points of Contact

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https://oldcc.gov/

https://oldcc.gov/resource/compatible-use-and-installation-resilience-grantee-guide-508-compliant

Office of Local Defense Community Cooperation
2231 Crystal Drive, Suite 520
Arlington, VA 22202-3711

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ENERGY RESILIENCE

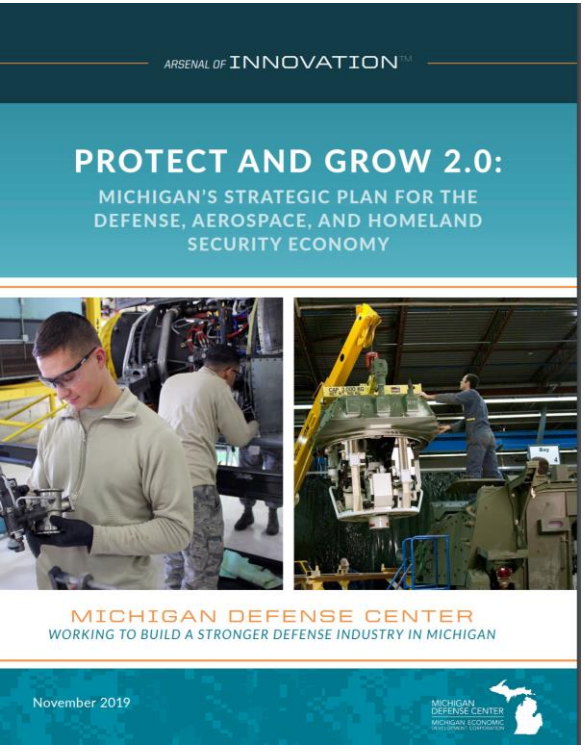
Detroit Arsenal Regional Defense Assessment of Resilience - Red Run Study

Ms. Shannon Bergt
Energy Manager
USAG Detroit Arsenal, MI
02 MAY 2023

Version 1
As of 02 MAY 2023

Detroit Regional Energy Resilience

✓Southeastern Michigan Capabilities



65%

of all defense contracts are awarded within Michigan.

100,000+

Defense Corridor aerospace and defense sector employees.

37%

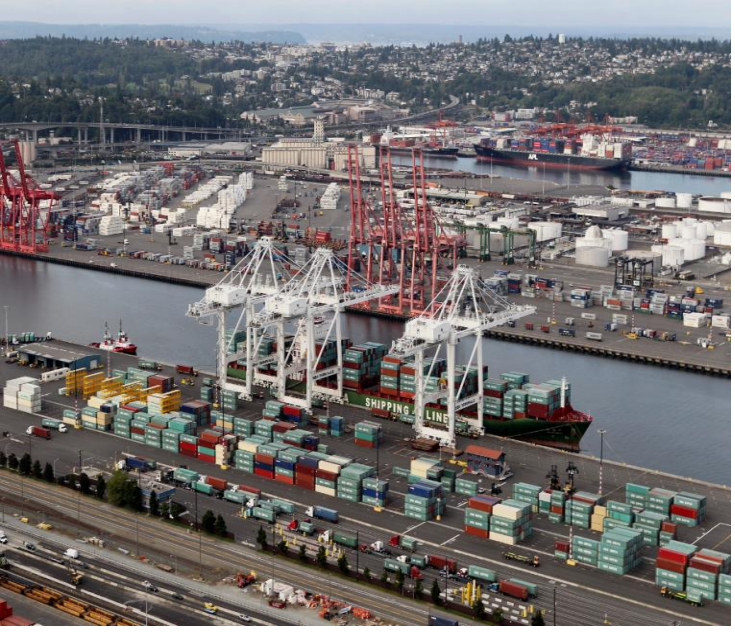
Highest military vehicle production in the U.S. is in Michigan.

1.7 MILLION

cars and trucks rolled off assembly plants located in the region.

Detroit Regional Energy Resilience

✓Southeastern Michigan Utilities and Resources



84%

North America's surface fresh water and approximately 21% of the world's surface fresh water supply.

1.1 Trillion ft^3

Almost 1/8th of U.S. underground gas storage capacity.

40%

U.S. trade with Canada passes through the SEMR border crossings.

Detroit Regional Energy Resilience

✓Holistic Planning & Partnership Model for Regional Energy Resilience

WHAT IT IS:

The Detroit Arsenal Regional Defense Assessment of Resilience (DAR2) is the first of its kind. DAR2 is a ***collaborative study and workshop process that brings together a diverse collection of stakeholders*** to a) identify resilience gaps in Southeastern Michigan and b) discover solutions to address those gaps.

HOW IT WORKs:

1) Stakeholder Identification and Engagement

FEB – NOV 2021

2) DAR2 Workshop to develop Project Concepts

DEC 2021

3) After Action to Identify Project Funding and Next Steps

JAN – MAY 2022

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Source: Detroit Arsenal Regional Defense Assessment of Resilience Post- Workshop Informational Slides, April 2022

Detroit Regional Energy Resilience

✓Partnership Model for Regional Energy Resilience

DAR2 Stakeholders		
DoD and Federal Government Representatives	• Department of Defense Office of Local Defense Community Cooperation (OLDCC) • Selfridge Air National Guard Base • Transportation Security Administration (TSA)	• U.S. Army G9 • U.S. Army Garrison - Detroit Arsenal (DTA) • U.S. Coast Guard
Local and Regional Representatives	• City of Centerline • City of Detroit • City of Warren • Clinton Township • Detroit Office of Homeland Security and Emergency Management • Macomb County Emergency Management	• Macomb County Planning and Economic Development • Michigan Public Service Commission (MPSC) • Macomb County Public Works • Michigan State Police (MSP)
Utilities and Infrastructure Owners	• AT&T • Comcast • Consumers Energy	• DTE Energy • Great Lakes Water Authority (GLWA) • Verizon

Source: Detroit Arsenal Regional Defense Assessment of Resilience Post- Workshop Informational Slides, April 2022

✓Holistic Analysis for Regional Energy Resilience

Approach – AHATool

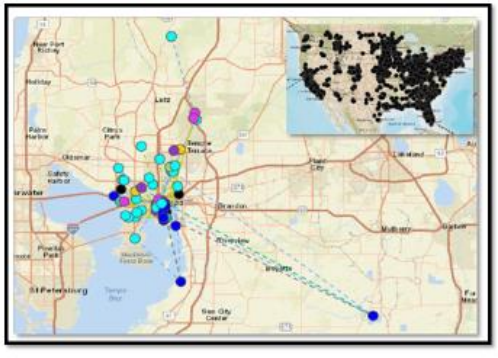
CONVERGE STRATEGIES

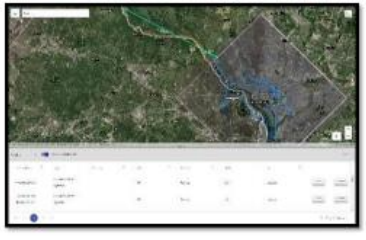
What is the All Hazards Analysis (AHA) tool used for?

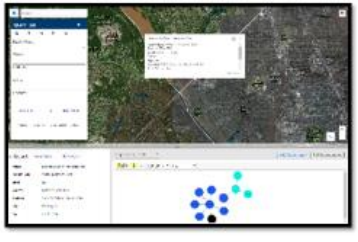
- **Understand** the consequence of infrastructure failure
- **Enable** collection and documentation of dependency information
- **Provide** a framework and capability for both analysts & decision makers
- **Enhance** the continuity of operations across sectors

Where does the data come from?

- AHA gathers information it needs about the essential infrastructure in the area of interest. AHA uses machine-learning-enabled processes to integrate facility and systems data from various sources into its framework.
- Sources
  - Structured. Ex: database detailing all the substations operated by a given power plant
  - Unstructured. Ex: newspaper articles, technical references, design standards or incident reports. For unstructured sources, AHA uses natural language processing, where algorithms are taught to recognize patterns in and extract information from human language texts.







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Source: Detroit Arsenal Regional Defense Assessment of Resilience Post- Workshop Informational Slides, April 2022

Detroit Regional Energy Resilience

✓Holistic Planning & Partnerships for Resilience

Project Concept 4: Red Run Watershed Renovation

CONVERGE STRATEGIES

Overview

- **Goal**: Reduce the risk of catastrophic system failures caused by regional flooding.
- **Action**: Identify project opportunities to address the overwhelmed storm water system in the region, which could cause flooding impacts as identified in the AHA scenario.
  - Map stakeholders, policies, and organizations across the region with ownership and interest in future projects.
  - Identify and consolidate ongoing studies and proposed course of action to address flooding in the SEMR.
  - Develop project concept proposal for future funding.
- **Defense Benefits:**
  - *Mission Assurance* - DTA and SANG have experienced mission continuity impacts caused by flooding. This project will mitigate the risk of future flooding on DTA.
  - *Infrastructure Resilience* – Renovations to existing infrastructure reduce the risk of downstream disruptions to natural gas and electrical infrastructure.
  - *Manpower Support* – This project may alleviate stress on off-base military and civilian community members during flooding events.

Leading Organizations

Lead: Macomb County Public Works Office – Jeff Bednar, Anthony Lewis

Support: Macomb County Emergency Management, Macomb County Planning & Economic Development, Detroit Arsenal and Selfridge ANGB, City of Warren, EGLE,

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Source: Detroit Arsenal Regional Defense Assessment of Resilience Post- Workshop Informational Slides, April 2022

✓Red Run Watershed Study & Project Development

Roadmap to Funding and Execution

1. Secure OLDCC Funding

- DTA, Red Run Drain Drainage District, and Regional Stakeholders will develop a Statement of Work for OLDCC funding to continue flooding mitigation studies, stakeholder mapping, and Courses of Action development.
- OLDCC-funded project team will continue with steps 2-4.

2. Red Run Project Identification and Validation

- OLDCC-funded Project Team will, in close collaboration with Red Run Drain Drainage District Team, gather, track, assess and prioritize completed and planned studies, evaluations, assessments and project concepts to address regional flooding.

3. Develop Regional Infrastructure Project to Reduce Flooding

- The OLCDD-funded Project Team will use the research and project concepts identified to develop infrastructure resilience project Courses of Action to reduce regional impact of flooding due to storm and wastewater overflow.

4. Identify & Apply for Project Funding

- OLDCC-funded Project team will identify and review potential opportunities for funding and complete proposal documents. Potential funding pathways include:
  - Department of Defense
  - Bipartisan Infrastructure Bill
  - State of MI (State Rev Fund; sec 319)
  - FEMA, DHS Funding

✓Project Bottom Line

- Multi-year effort with 90% funding provided by OLDCC.
- 10% match required from community partner – Red Run Intercounty Drain Drainage District.
- H+H study will show current and future RRID conditions, regional energy resilience risks and opportunities.
- Workshop creates an opportunity for regional stakeholders to identify projects for Defense Community Infrastructure Pilot (DCIP) and federal infrastructure funding.
- Provides key stakeholders an opportunity for an expanded view of threats and opportunities, holistic project integration and prioritization of all funding opportunities.

Site: Installation Resilience | Office of Local Defense Community Cooperation (oldcc.gov)

DoD Roles

Office of Local Defense Community Cooperation (OLDCC) – funder.
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U.S. Army Garrison Detroit Arsenal (DTA) –
Project champion, DTA Energy Manager: Shannon Bergt
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