



# Department of the Navy

## Renewable Energy Program Office

**Mr. John A. Kleim**

DEPUTY DIRECTOR



# Power Matters

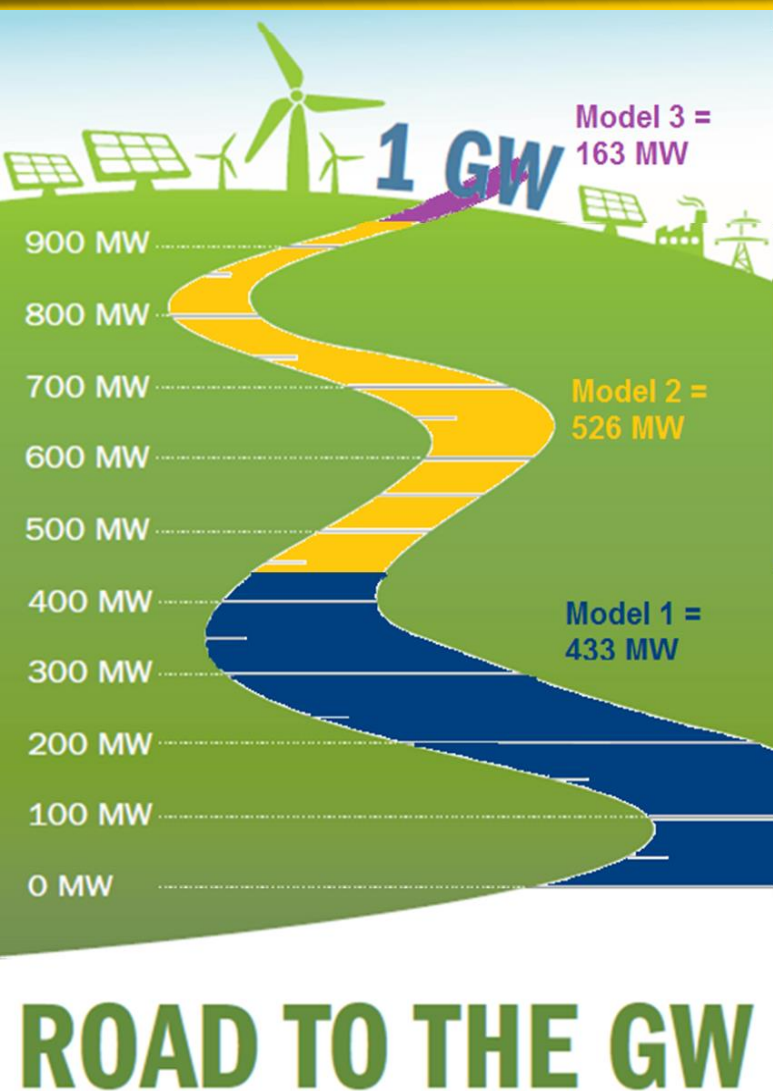


*“ Anyone who has operated at sea or ashore knows that energy is absolutely critical to doing our job ”*

- ADM John Richardson, Chief of Naval Operations



# REPO Mission: To the GW & Beyond



## The goal:

1 GW of renewable energy in procurement by the end of 2015.



## The outcome:

More than 1 GW of renewable energy projects in procurement at the end of 2015.

## The Future: REPO To-Do List

- ☒ Get one GW of renewable energy
- ☐ Enhance energy resiliency by pursuing projects that leverage new technologies, and by strengthening existing efforts



# How We Got the GW

## Model 1 Projects = 443 MW

*(off-base generation for on-base consumption)*

- DON purchases new RE generation from a third-party
- Using USC § 2922a the DON gets long-term cost stability and power diversity

## Model 3 (and other RE assets) = 163 MW

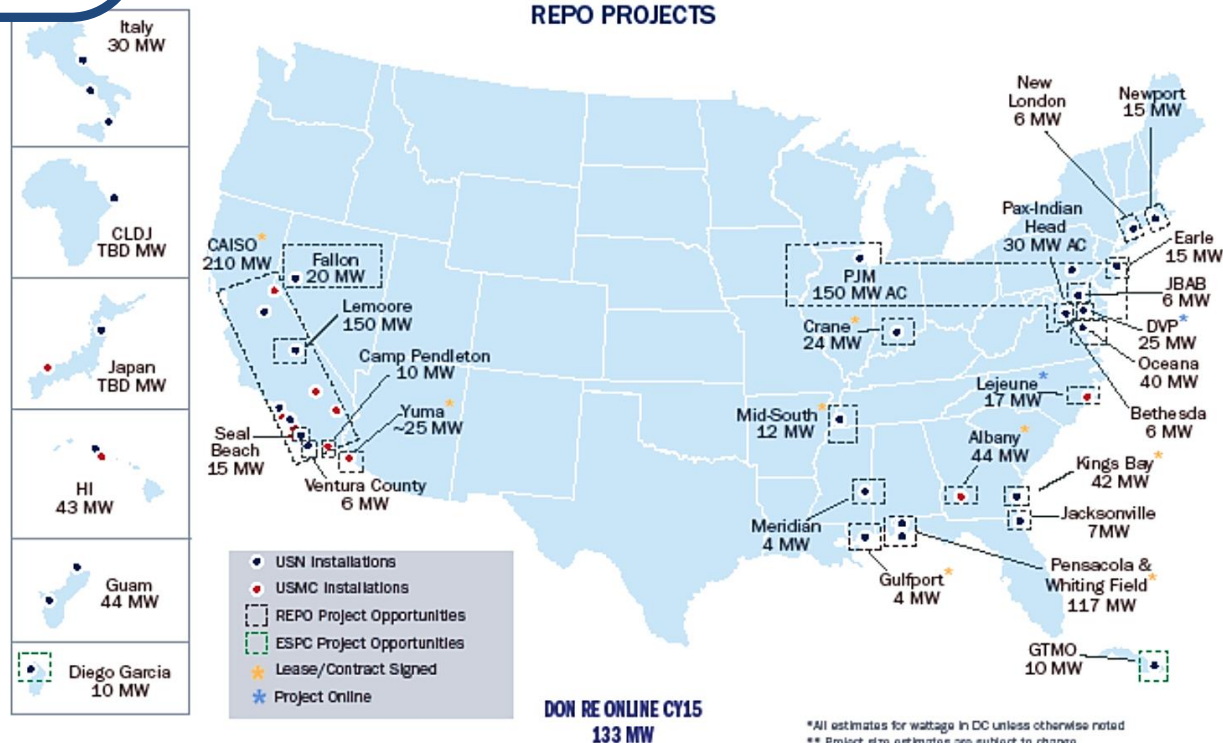
*(on-base generation for on-base consumption)*

- Third party builds, owns and operates asset on DON land, the DON consumes power output
- The DON gets energy security IKC, power diversity and cost stability

## Model 2 Projects = 526 MW

*(on-base generation for off-base consumption)*

- Third party builds, owns and operates asset on DON land
- Through the outgrant, the DON receives energy security related in-kind consideration (IKC)







# Success at MCB Camp Lejeune

- Marine Corps Base (MCB) Camp Lejeune project = REPO 1<sup>st</sup> project
- Established a successful model for future projects
- Project broke ground in July 2015; now online and producing energy
- Utility partner Duke Energy will provide access to the power generated by the array during times of grid outage as the in-kind consideration for the value of the land



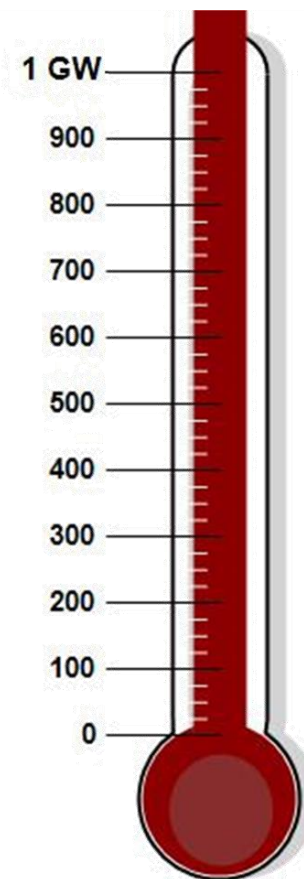
**MCB Camp Lejeune PV  
17 MW DC / 13 MW AC energy**





# Contributors to REPO Success

- Collective Navy and Marine Corps senior leadership support
- A clear measurable goal and mission focus
- Aggressive milestones that encouraged innovative solutions and business models in project planning and execution
- Effective use of private sector knowledge and partnerships
- Leveraging of in-house and contractor support for technical and business case analysis, and in-house execution and support
- Establishing Field REPO Offices in Norfolk, San Diego, and Hawaii



U.S. DEPARTMENT OF THE NAVY

**REPO**  
RENEWABLE ENERGY PROGRAM OFFICE



# The Future of DON Energy Security



## *Energy Resiliency*



- SECNAV has directed REPO to leverage technical and business expertise to accelerate results on other energy initiatives
- These initiatives will not detract from completing the 1 GW projects but rather are intended to increase installation energy resiliency

### REPO Way Ahead Memo



DEPARTMENT OF THE NAVY  
THE ASSISTANT SECRETARY OF THE NAVY  
(ENERGY, INSTALLATIONS AND ENVIRONMENT)  
1000 NAVY PENTAGON  
WASHINGTON DC 20350-1000

MEMORANDUM FOR DEPUTY CHIEF OF NAVAL OPERATIONS (READINESS  
AND LOGISTICS)  
DEPUTY COMMANDANT OF THE MARINE CORPS  
(INSTALLATIONS AND LOGISTICS)

SUBJECT: Renewable Energy Program Office – Way Ahead

The Secretary of the Navy established the Renewable Energy Program Office (REPO) in Spring 2014 to accelerate progress towards procuring 1 Gigawatt (GW) of Renewable Energy resources by the end of 2016. In less than 2 years, REPO produced phenomenal results, placing 1.1 GW of renewable projects “in procurement”. Key contributors to that success included:

- a. Collective Navy and Marine Corps senior leadership support;
- b. A clear measurable goal and mission focus;
- c. Aggressive milestones that encouraged innovative solutions and business models in project planning and execution;
- d. Effective reliance on private sector knowledge and partnerships;
- e. Leveraging of in-house and contractor support for technical and business case analysis, and in-house execution and support;
- f. Establishing Field REPO offices in Norfolk, San Diego and Hawaii.

While work remains to complete ongoing 1GW projects, The Secretary has directed that we leverage REPO’s technical and business expertise to accelerate results on other energy initiatives. These initiatives will not detract from completing the 1 GW projects but, rather, are intended to increase installation energy resiliency. Strong collaboration, coordination and communication among all stakeholders will ensure alignment and sharing of lessons learned, and enable the ultimate transition of renewable energy and pilot projects from REPO. Information sharing about ongoing efforts in specific energy related areas (e.g., Mission Assurance) will help to ensure REPO focus is aligned with and positively impacts stakeholder efforts.

REPO will be responsible for projects within the prioritized portfolio described below. Specific projects will be strategically selected to help define and validate technical solutions and innovative business plans. Project selection will be mindful of and coordinated with other work already underway within Commander, Navy Installations Command, Marine Corps Installations Command, and Naval Facilities Engineering Command. Prior to full scale effort on projects,



# REPO Way Ahead Projects

## Renewable Energy Projects

Continue and complete existing Model 1, 2 and 3 projects

## Resiliency

A small number of energy resiliency pilot projects to prove concepts for:

- *Microgrids*
- *On-base energy generation*
- *energy storage and energy distribution*
- *energy management*

## Electrification

- Lead efforts to electrify ground support equipment at one air station and one industrial or port complex.
- Draw on lessons learned from industry (e.g. Delta) to explore alternative business models and complete a business case analysis for electrification.

## ESPCs/ UESCs/ Utilities Privatization

Provide technical and business case analyses support to other stakeholders to maximize results from third party financed programs

## Water-Energy Nexus

Conduct technical and business case analyses to evaluate opportunities to reduce both water consumption and the corresponding energy required to support water requirements at one installation or region

## Electric Vehicles

Provide technical and business advice on infrastructure required to support electric vehicles, including medium and heavy vehicles on DON installations





# Current REPO Resiliency Initiatives

1. Bring renewable energy projects in procurement online
2. Utilize third-party financing to build DON resiliency by leveraging technologies such as battery storage, fuel cells, microgrids and distributed generation. Examples include:

## NWS Seal Beach (solar + storage)

The base will receive 500 KW of dedicated onsite renewable capacity with battery back-up and microgrid controls.

## NSA Ventura County (battery storage)

The base will receive emergency access to onsite renewable energy, battery back-up and microgrid controls for critical facilities.

## US Naval Observatory (fuel cell)

REPO is assessing the potential to use fuel cells to increase energy resiliency at this critical facility.

## MCAS Yuma (microgrid)

Arizona Power will provide unlimited access to onsite backup power, eliminating up to 42 USMC emergency diesel generators.



# Capitalizing on Current Market Conditions

REPO is utilizing existing policies and the market climate to enhance progress velocity



***Tax Credit Extension***

***Clean Power Plan***



These policies and mandates increase the private sector's interest in investing in renewable energy and energy security initiatives



# Questions?

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