THE NAVY'S ENERGY & ENVIRONMENTAL MAGAZINE

Currents

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Naval Base San Diego, Camp Pendleton Host Inaugural SECNAV Energy Training Events

ASN (EI&E) McGinn Delivers Keynotes; Hundreds of Sailors & Marines Share Energy Efficient Ideas & Best Practices

NAVAL BASE SAN Diego and Marine Corps Base Camp Pendleton hosted several hundred Navy and Marine Corps operational, unit-level leaders for the first-ever Secretary of the Navy (SECNAV) energy training events on February 11 and 13, 2014. These events highlighted the latest developments that the Department of the Navy (DON) is pursuing based on SECNAV, Chief of Naval Operations (CNO), and Commandant of the Marine Corps (CMC) energy goals, and provided training to help deck plate Sailors and fleet Marines apply best energy conservation practices.

"Achieving major reductions in energy consumption will depend on decisions by individual Sailors and Marines who operate combat systems and equipment every day," said Rear Admiral Kevin Slates regarding the event.

The U.S. Navy Event: Tuesday, February 11, 2014 at Naval Base San Diego

LCDR Will Hagan from Commander, U.S. Pacific Fleet, the driving force behind the Navy event at NBSD, assembled the "right people" to identify better energy conservation management practices for the Fleet. That included operators who execute tasking; Fleet planners and schedulers who provide that tasking; and the Systems Commands (e.g., Naval Sea Systems Command, Naval Air Systems Command) that are bringing new technologies to the Fleet including the use of biofuels, hybrid electric drives for destroyers and amphibious ships, and analyzing procedures like Short-cycle Mission and Recovery Tanking (SMART) in-flight refueling that have the potential to save millions in fuel.

The San Diego event was divided into a morning plenary session where Navy leadership framed the issues for participants, and an afternoon of working sessions of Fleet operators to brainstorm good ideas for conserving energy resources—in essence a practical dialogue among representatives from the Type Commands, System Commands, and deckplate leadership.

Admiral Harry B. Harris Jr. Commander, U.S. Pacific Fleet

As the first speaker, Admiral Harry B. Harris, Jr., commander, U.S. Pacific Fleet set the tone for the day's

> Achieving major reductions in energy consumption will depend on decisions by individual Sailors and Marines who operate combat systems and equipment every day.
>
> *—Rear Admiral Kevin Slates*

events when he said, "Energy conservation and management are a critical part of our readiness. We need to be ready to fight tonight—in the Pacific and across the globe. Energy conservation is an effective tool that gives our forces an edge over any potential adversary we may face. The navy with the greatest at-sea endurance has the advantage. And that needs to be us, every time."

As a warfighting commander, Admiral Harris spent time working with his State of Hawaii partners on several energy initiatives like the solar array that is going in at Waipio. He also welcomed the City and County of Honolulu's ongoing planning of the elevated light rail system that will make a difference in providing needed congestion relief. He also approved further study of Pearl Harbor as a candidate for a Liquefied Natural Gas terminal.

The SECNAV's Energy Goals

AS DON WORKS to reduce energy consumption and lead the nation toward energy independence, the SECNAV has outlined five energy goals. These goals seek to enhance and better enable our combat capabilities, to provide greater energy security. Outlined below are examples of how the Navy is moving forward to achieving each of the goals.

1. Increase Alternative Energy Use DON-wide

By 2020, 50 percent of total DON energy consumption will come from alternative sources.

- Continue aggressive pursuit of both large and small scale renewable energy projects on or near DON installations.
- Partner with industry, commercial aviation, and other government agencies to develop a demand signal to alternative fuel industry and encourage growth of a domestically produced, cost competitive biofuel industry.
- Decrease energy consumption, both ashore and afloat, through installation of energy efficient technologies and development of policies that encourage energy awareness and conservation.

2. Increase Alternative Energy Ashore

By 2020, DON will produce at least 50 percent of shore-based energy requirements from alternative sources.

- Continue installation of energy efficient upgrades to buildings and facilities.
- Encourage military members and families to conserve energy through incentives and other programs to empower them to save and be aware of their own energy consumption.
- Produce or consume one Gigawatt of new, renewable energy to power naval installations across the country using existing authorities such as Power Purchase Agreements, enhanced use leases, and joint ventures.

3. Sail the "Great Green Fleet"

By 2012, DON will demonstrate a Green Strike Group in local operations and sail it by 2016.

- In 2012, DON successfully demonstrated a Green Strike Group at the Rim of the Pacific exercise off Hawaii.
- The DON remains focused and on track to sail the Great Green Fleet by 2016–ushering in the "new normal" where biofuels will be a constant and regular part of our operational platforms.

4. Reduce Non-Tactical Petroleum Use

By 2015, DON will reduce petroleum use in the commercial vehicle fleet by 50 percent.

- Increase purchase and use of flex fuel vehicles, hybrid electric vehicles, and neighborhood electric vehicles.
- Expand alternative fuel infrastructure to support these vehicles.

5. Energy Efficient Acquisition

Evaluation of energy factors will be mandatory when awarding contracts for systems and buildings.

- Create a standardized process for determination of lifecycle energy costs, fully-burdened cost of energy and other energy related characteristics of potential platforms, weapons systems, and buildings.
- Encourage contractors to minimize energy footprint and factor energy into the acquisition decision making process.

Admiral Harry B. Harris, Jr. addresses the crowd assembled at the first SECNAV energy training event held in San Diego on February 11, 2014.

Admiral Harris is personally involved in energy issues because he believes that "it will help us to be a better warfighting force, to be where it matters, when it matters—just as we were a few months ago for Operation Damayan, when our naval forces responded to assist the people of the Philippines in the wake of one of the most powerful typhoons in recorded history. We couldn't do that unless we were already there. Forward presence matters."

But no matter how vast it is, Admiral Harris views the Pacific not as something that separates us from our allies, partners and friends, but rather a pathway that binds us together. "This tyranny of distance goes a long way in explaining why fuel is essential and why energy efficiency matters," said Admiral Harris.

There was a sense of urgency in Admiral Harris' remarks when he encouraged participants to "adapt today" so that we are relevant tomorrow. He said, "Energy efficiency is something we can't defer to tomorrow. We must advance energy efficiency at the operational level today. And from my experience, there is no force or organization as adaptive and innovative as the United States Navy," he said.

Admiral Harris was confident that the SECNAV's energy goals for 2020 will be met. "When you think about our Navy's nuclear platforms, and the ships and aircraft powered by biofuels, we're well postured to reach SECNAV's and CNO's energy conservation goals for 2020," he said.

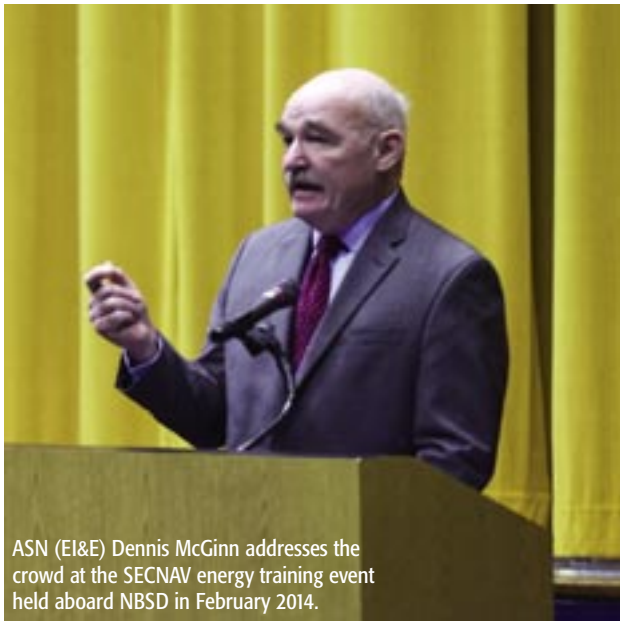
> The navy with the greatest at-sea endurance has the advantage. And that needs to be us, every time.
>
> *–Admiral Harry B. Harris, Jr.*

"They are concrete, challenging and achievable," he said. He encouraged those in attendance—the "right people in the room"—to change their mindsets, promote sound energy practices in what they do, and walk the walk. "Instead of saving energy when you can, save energy unless you can't," he said.

Admiral Harris concluded his remarks by introducing the Honorable Mr. Dennis McGinn, Assistant Secretary of the Navy for Energy, Installations and Environment (ASN (EI&E))—someone with the education and the experience needed to lead the Navy's energy conservation efforts.

Mr. Dennis McGinn
Assistant Secretary of the Navy
(Energy, Installations and Environment)

ASN (EI&E) Dennis McGinn delivered the keynote remarks at both the San Diego event and a similar event held later in the week at Camp Pendleton. "These events are part of the Department of the Navy's (DON) continuing effort to increase awareness of the need for all of us to reduce



ASN (EI&E) Dennis McGinn addresses the crowd at the SECNAV energy training event held aboard NBSD in February 2014.

We need to squeeze the maximum amount of mission readiness out of every drop of oil and every kilowatt of electricity.

–ASN (EI&E) Dennis McGinn

energy consumption," said McGinn. "We want to learn more from each other—about how important operational readiness is."

Mr. McGinn argued that seventy years ago, Admiral Chester W. Nimitz (the legendary figure who commanded the Pacific Fleet in World War II) would have been just as concerned about energy as we are today. The age of petroleum—of "easy oil"—has been very good to the U.S. and the Navy. "But we have to be concerned about the supply of this quantity that has been so good to us. We don't want to see conflicts around the world over the supply of oil," he said.

"We can't assume that the way it has always been is the way that it will always be," said Mr. McGinn. "We need to squeeze the maximum amount of mission readiness out of every drop of oil and every kilowatt of electricity. And we do that through energy conservation and energy efficiency."

Mr. McGinn urged the assembled operators to share their stories about how their sound energy practices are contributing to the Navy's mission readiness. "Energy and the Navy and Marine Corps are inextricably linked," he said. "Business as usual is not going to get us there. We need to watch the throttle of our F/A-18s, plan a better, more efficient course for our DDGs."

"This problem is not going to be solved in Washington," he said. "It's going to be solved by the people in this room. And we don't want to be out of gas and out of ideas. We have the ability to identify and employ the best energy conservation practices and better ideas that allow us to be a better, more efficient Navy. Let's do that today."

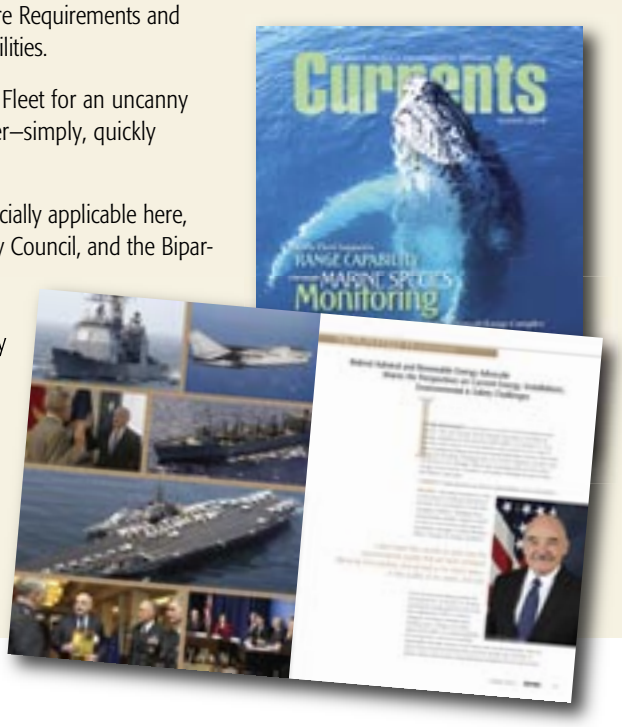
The Basics About ASN (EI&E) Dennis McGinn

MR. MCGINN SERVED 35 years in uniform, having been a fighter pilot, a test pilot and the commanding officer of USS Wichita (AOR-1) (an oiler), and USS Ranger (CV 61). He returned to San Diego as the commander of the U.S. Third Fleet. In his last assignment in a Navy uniform, he was the Deputy Chief of Naval Operations for Warfare Requirements and Programs where he oversaw the development of all future Navy capabilities.

During his tenure with the Navy, Mr. McGinn had a reputation in the Fleet for an uncanny ability to cut through the bureaucracy to get to the heart of the matter–simply, quickly and effectively.

He's been a past member of several steering committees that are especially applicable here, including the Energy Future Coalition, the United States Energy Security Council, and the Bipartisan Policy Center Energy Board. He was also the former President of the American Council on Renewable Energy, co-chair of the CNA Military Advisory Board, and an international security senior fellow at Rocky Mountain Institute.

For much more information about Mr. McGinn, his experience and plans for the Navy, read our spotlight interview in the winter-14 issue of *Currents*. You can find that interview and much more on the DON's Energy, Environment and Climate Change web site at http://greenfleet.dodlive.mil/currents-magazine.



USS Peleliu & USS McClusky Recognized for Superior Energy Conservation Accomplishments

AT THE SAN Diego event, Mr. McGinn presented SECNAV Energy and Water Management Awards to representatives from USS Peleliu (LHA 5) and USS McClusky (FFG 41). With these awards, DoN recognizes outstanding commitment to energy and water management by Navy ships as well as Navy and Marine Corps installations and squadrons.

These awards are presented to those ships that have made notable progress toward DoN goals to reduce energy and water consumption and increase use of renewable energy sources. The DoN energy program evaluates and classifies the overall energy and water management performance of each ship, ranking them according to a system of SECNAV winner, platinum, gold or blue level of achievement.

USS Peleliu
SECNAV Energy Conservation Award
Large Hull Category
Big Deck Amphibious Assault Ship

Compared to the average fuel usage of ships of the same class, Peleliu saved 37,231 barrels of fuel during the evaluation period–a savings of $5,332,000. The award recognizes the ship's commitment to energy conservation strategies, techniques and training.

Peleliu was able to achieve these fuel savings due to a concerted effort on all fronts. NAVSEA's incentivized Energy Conservation (iENCON) program procedures are strictly enforced and followed by every crew member. Some of the Peleliu's energy-saving techniques include:

FROM LEFT: Captain Paul Spedero, commanding officer of USS Peleliu, receives the SECNAV Energy Award from ASN (EI&E) Dennis McGinn and Admiral Harry B. Harris, Jr.

- Equipment operating logs are reviewed on an hourly basis to ensure all machinery is operating within design parameters.
- Routine boiler flexes ensure the propulsion boilers are operating above established guidelines.
- Optimum trim and draft is maintained at all times.
- Daily planning utilizes the ship's total fuel consumption curves.

In addition to the SECNAV award, Peleliu has the distinction of being the only ship ever to rank among Pacific Fleet's top five ships in underburn for three consecutive quarters.

USS McClusky
SECNAV Gold Energy Award
Small Ship Category
Frigate

USS McClusky saved 9,118 barrels (or $1,305,000) of fuel in one fiscal year versus the FFG 7 class average. This savings is the direct result of commitment on all levels, and to practices and techniques gained through NAVSEA's iENCON training program.

FROM LEFT: Vice Admiral Tom Copeman, Commander, Naval Surface Forces, U.S. Pacific Fleet, Lieutenant, j.g. Chase Burge of USS McClusky, and Captain Mike Elliott, Destroyer Squadron ONE Commodore, receive a SECNAV gold achievement energy award from ASN (EI&E) Dennis McGinn and Admiral Harry B. Harris, Jr. while Lieutenant Commander Will Hagan, Pacific Fleet shipboard conservation manager, narrates.

Some of the factors contributing to this achievement:

- Pre-deployment maintenance to ensure that the main engines are operating at top efficiency.
- Pre-deployment inspection of all four ship service diesel generators and correction of any discrepancies.
- Careful mission planning to eliminate needless mileage and allow more slow-speed patrols.
- Meticulous log keeping which allows the crew to continuously optimize fuel consumption without sacrificing mission readiness.

For more information about the SECNAV energy awards, visit www.i-encon.com/13awardcriteria.htm or contact Chris Tindal at 901-874-9292, DSN: 882-9292, and chris.tindal@navy.mil.

Rear Admiral Kevin D. Slates
Director, Chief of Naval Operations Energy and Environmental Readiness Division

Mr. McGinn's comment about not being out of gas and out of ideas rang true with Rear Admiral Kevin D. Slates, director of the Chief of Naval Operations Energy and Environmental Readiness Division (CNO N45). Admiral Slates pointed out that petroleum is a limited resource subject to sudden price increases in the global marketplace as world events unfold. These supply and price issues become an increasing concern as many of the Navy's new systems use fuel at a higher rate than legacy platforms to achieve increased combat capability. The Navy is also moving toward systems like the electromagnetic railgun and directed energy weapons that will depend on gas tanks instead of explosives to achieve their kinetic effect. "These factors make it all the more important to find ways to conserve fuel in our platforms everywhere, all the time, unless we cannot," said Admiral Slates.

In his remarks, Admiral Slates emphasized the focus on at-sea endurance. "Energy is a great enabler, but it is also a great liability. If our adversaries shut down our energy supply, or if an oiler can't get to the Fleet, that's a real risk," he said.

Rear Admiral Kevin Slates addresses the crowd assembled during the plenary session at the SECNAV energy training event held in San Diego on February 11, 2014.
MC Seaman Amanda Chavez

Before leaving the stage, Admiral Slates encouraged those assembled in the NBSD Theater to look at the added capability that nuclear power gave us and "be that innovative." "The real ideas, the great ideas come from the Fleet.

> The real ideas, the great ideas come from the Fleet.
>
> *–Rear Admiral Kevin D. Slates*

When aviators, surface and expeditionary warriors, and the host of technicians who keep the equipment running truly understand how energy efficiency enables combat capability and can save lives, they can apply their analytical minds to solve energy problems in a practical way that meets mission requirements with less fuel. As Admiral Slates said, "As vital as new technology is, we won't achieve energy efficiency fast enough, if at all, with technology alone. We have to re-think how we use and value energy with the platforms we have. We need to incorporate energy efficient practices into the acquisition process and design our systems with efficiencies that increase our capacity downstream."

The Systems Commands are already helping the Navy achieve energy independence through a variety of mechanisms including stern flaps, the energy dashboard, LED lighting and hybrid electric drives. According to Admiral Slates, "Putting innovative systems on our ships is a game changer."

We have the most innovative thinkers in the Navy—the best that our country has to offer," said Admiral Slates. "We need to extend our reach, our combat capability. So what can we do to extend that capability? How can we operate our platforms more efficiently?"

Rear Admiral Alma Grocki
Director of Fleet Maintenance, U.S. Pacific Fleet

Rear Admiral Alma Grocki, director of fleet maintenance, U.S. Pacific Fleet, followed Admiral Slates with her own energy conservation vision and strategy.

Admiral Grocki said, "Our focus is on operational energy and the compelling reasons to change how we perceive and use energy at our installations and in our operations. While we are investing in modernizing our equipment and the Fleet to deliver the needed capability with more fight and less energy, we recognize that technology alone will not get us there."

Rear Admiral Alma Grocki shares her views on energy conservation during the San Diego SECNAV energy training event.
MC Seaman Amanda Chavez

Admiral Grocki provided some interesting statistics in her brief, including the fact that the Navy accounts for 28 percent of the Department of Defense's (DoD) total energy consumption. She noted that, "The Fleet is moving from limited, local initiatives to compulsory, Fleet-wide practice."

"By using less energy, we will increase our operational range and time on station, reduce logistical vulnerabilities and conserve resources that can be applied to other priorities," said Grocki. "We'll get a return on our investment," she said, "but we need to measure our progress along the way."

Admiral Grocki concluded her remarks by saying, "This is not a short-term problem. But with all of your help to shape and carry the message forward, we can complete the missions that the Navy has in store for us." She encouraged the operators in attendance to identify good ideas that promote energy conservation as well as the strategies to convert those ideas into Fleet-wide best practices.

More Presentations from the U.S. Pacific Fleet & Other Organizations

Once these senior Navy officials completed their remarks, they were followed by a number of other presentations given by the personnel listed in the table below.

WHO	ORGANIZATION	WHAT
CAPT Richard A. Rogers CAPT Ryan B. Scholl	Commander, Naval Air Force, U.S. Pacific Fleet	■ Increasing energy conservation aboard aircraft carriers ■ Implementing improvements to reduce aviation fuel usage ■ Launching the Naval Aviation Energy Conservation (Air ENCON) program to establish an enterprise-wide program that reduces reliance on petroleum
CDR Bill Partington	Commander, Naval Surface Force, U.S. Pacific Fleet	■ Executing a multi-pronged approach to reduce surface ship energy consumption while underway (including stern flap and solid state lighting installation) ■ Planning for deployment of the Great Green Fleet in 2016
CDR Brien Dickson	Commander, Submarine Force, U.S. Pacific Fleet	■ Planning for pierside metering, biofuels for emergency diesel engines, and antifouling coatings on submarine topside surfaces
Mr. Sonjae Whang	Military Sealift Command	■ Implementing the Energy Management Dashboard which more accurately assesses shipboard energy conservation underway and in port ■ Execute an energy training program that focuses on improving on-board operating practices for better energy efficiency
CAPT Marc Delao	Navy Expeditionary Combat Command (NECC)	■ Implementing the NECC energy strategy including the cost effectiveness and commonality of parts, equipment, systems and procedures, partnering with other Services to support equipment refresh and modernization efforts, and leveraging other DoD and commercial initiatives

By using less energy, we will increase our operational range and time on station, reduce logistical vulnerabilities and conserve resources that can be applied to other priorities.

–Rear Admiral Alma Grocki

Tom Martin of the Naval Sea Systems Command (NAVSEA) and co-chairman of the Navy's Maritime Working Group, described energy-saving initiatives such as the variable speed drive port use fan, solid state lighting, combustion trim loop, directional stability and stern flaps. "Some of these initiatives will save energy regardless of the operator, while other technologies are enablers," he said.

Participants had the chance to record their energy ideas and feedback on the SECNAV energy training event at the CNO N45 booth.

Kenneth Hess

Afternoon Breakout Sessions

In an effort to identify energy challenges and solutions, participants had the option to attend one of the following three afternoon breakout sessions on maritime energy, aviation energy and expeditionary energy.

During each of these sessions, participants discussed possible ideas for promoting energy efficient practices across the Fleet, the challenges associated with implementing those practice, and good ideas to address those challenges. The results of each of these breakout sessions will form the basis of good ideas that will be carried forward for future investigation and application.

After the San Diego event concluded, Admiral Slates reflected on the training event in his own blog posting (on http://www.navy.mil/submit/display.asp?story_id = 79092) when he said, "We are still in a very challenging fiscal environment, which limits opportunities for training. So we have to do our best to ensure each training event provides maximum value for our warfighters in support of Fleet readiness. Admiral Harris' team and the participants in the San Diego event succeeded in that regard—they made practical headway for the Navy in the energy realm and it was a privilege to be a part of it."

Following the event, Mr. McGinn visited USS Dewey (DDG 105), where he met with crew members to discuss energy conservation and its impact on operational readiness.

Also on hand during the San Diego event was a video crew that recorded the leadership remarks as well as the awards ceremony. In the afternoon, the video crew recorded comments from individual Sailors about this training, including their good ideas for making the Navy a wiser energy user. This provided the assembled Sailors with an opportunity to be the "eyes and ears" of the Fleet and help make a difference. The public affairs team from U.S. Pacific Fleet, Navy Region Southwest and CNO N45 will use these video clips for press releases, articles,

and social media posts to help get the word out about these training events and the Navy's ongoing energy conservation efforts.

The U.S. Marine Corps Event: Thursday, February 13, 2014 at Marine Corps Base Camp Pendleton

The United States Marine Corps (USMC) conducted a similar, one-day energy training event on February 13, 2014, at MCB Camp Pendleton designed to take the energy message of the SECNAV and the CMC to unit-level leaders in the Fleet. The intent behind this event was fourfold:

1. Communicate the Marine Corps' energy challenges directly to the Fleet.
2. Explain energy constraints on both installation and Marine Air Ground Task Force operations.
3. Educate Marines about how they can be part of the solution.
4. Allow ASN (EI&E) McGinn to hear directly from Marines about how energy affects their operations.

Getting Marines to understand the energy problem and their role in tackling it will jump-start a critical energy culture change in the Marine Corps.

In attendance for this event, were general officers, battalion and squadron commanders and sergeant majors, logistics officers and chiefs, and senior base energy management personnel. Their participation ensured that the SECNAV and CMC energy message was communicated to every level of the operating forces.

During the early morning hours of the Camp Pendleton event, Mr. McGinn held a number of roundtable discussions with senior Marine Corps leadership so that he could share his vision for an energy efficient Marine Corps and get their perspectives on energy conservation including:

1. LtGen Toolan (I MEF)
2. MajGen Nicholson (1st MARDIV)
3. MajGen Berger (29 Palms)
4. MajGen Ayala (MCICOM)
5. BGen Bullard (MCI West-Camp Pendleton)
6. BGen Mundy (III MEF)
7. BGen Coglianese (1st MLG)

Mr. McGinn also provided the opening remarks at the training session for logistics officers and chiefs and senior base energy personnel.

Mr. Dennis McGinn
Assistant Secretary of the Navy
(Energy, Installations and Environment)

"The SECNAV, CMC and the chain of command are all focused on energy," said Mr. McGinn. "And although energy technology and our partnerships with utility companies are very important, a pronounced culture change is going to make the biggest difference about how we become a more effective fighting force. Everybody up and down the chain of the command really has to understand that energy is essential to us as a nation and we can do something about it no matter what kind of technology we have."

"Think about energy as ammunition," said Mr. McGinn. "You don't go out to the field and just indiscriminately fire—you are always mindful that the supply of bullets, bombs and missiles is limited. Energy is exactly the same way."

ASN (EI&E) McGinn addresses participants at the second SECNAV energy training event held aboard Camp Pendleton in February 2014.
Kenneth Hess

ASN (EI&E) McGinn Tours Energy Projects at Camp Pendleton

AFTER KICKING OFF the MCB Camp Pendleton training event, Mr. McGinn along with senior military personnel visited several energy projects on base including the site of the largest photovoltaic (PV) array at a west coast Marine Corps base on a closed landfill at Box Canyon. As a rule, solar array systems require open, minimally shaded space and proximity to roads and power transmission lines. Closed landfills that are otherwise unavailable for development often meet PV-siting requirements. The solar panels on the Box Canyon site are installed on an aluminum and steel racking system that is secured by 3,500-pound concrete ballasts. The ballasts are placed on gravel pads to allow rainwater to flow through without affecting the landfill cap.

From left, Charles Howell, ASN (EI&E) Dennis McGinn, Navy Capt. Charles R. Reuning and Lt. Cmdr. Ben Wainwright talk about the Phase I and Phase II photovoltaic array (solar panels) at Box Canyon aboard MCB Camp Pendleton during Mr. McGinn's tour of the base.
Cpl. Brianna Christensen

It is estimated that it will save the Marine Corps $336,000 per year in electricity costs. The first phase of the array covers approximately five acres and includes 225 panels, each holding 28 modules for a total of 6,300 modules. The size of the system is 1.485 megawatts of direct current and in Fiscal Year (FY) 2013 generated 2,448,108 kilowatt hours of electricity and saved $342,735 in electricity costs. The second phase was activated in June 2013 and generated 780,407 kWh of electricity by the end of FY 2013.

For more information about the Box Canyon solar array, read our article entitled "Landfill to Lighting: Closed Pendleton Landfill Becomes Home to Solar Arrays" in the summer 2012 issue of *Currents*.

Box Canyon solar array.

Lake O'Neill aboard MCB Camp Pendleton.
Cpl. Brianna Christensen

Mr. McGinn and his entourage then visited the water reservoir at Lake O'Neill as well as the former base hospital (building H-100) that will be converted into an energy efficient administrative facility for approximately 2,350 base and tenant command staff. The conversion will include renovation and modernization of the interior space, upgrading utility systems and underground communication lines, a structural/seismic retrofit and construction of additional parking spaces.

There is no silver bullet that is going to solve all of our energy concerns and challenges. There is, however, silver buckshot; a little bit here and a little bit there is absolutely going to make a difference.

–ASN (EI&E) Dennis McGinn

"I want to leave you with an appreciation for how absolutely essential and inexplicably tied our mission readiness is to the kinds of energy we have and how we use it," said Mr. McGinn. "There is no silver bullet of technology that is going to solve all of our energy concerns and challenges," said Mr. McGinn. "There is, however, silver buckshot; a little bit here and a little bit there is absolutely going to make a difference."

After concluding his remarks and having lunch with senior military officials, Mr. McGinn left the Pacific Views Event Center along with senior military personnel from Camp Pendleton to visit a number of energy projects on the base.

Colonel James C. Caley
USMC Expeditionary Energy Office

After Mr. McGinn's remarks, Colonel James C. Caley from the USMC Expeditionary Energy Office discussed the challenges facing the Marine Corps in the operational energy arena.

Colonel Caley's first question posed to the assembled Marines was, "How can we change our ethos—our guiding principles—as it pertains to operational energy? From 2001 to 2014, the fuel consumption of our infantry battalions increased exponentially. "Our trucks idle 50 to 70 percent of the time, at zero miles per gallon, and half of that time is inside our fenceline. Our generators run 65 percent of time powering nothing. That's an ethos we need to change," said Colonel Caley.

Colonel Caley emphasized that his team can't solve the Marine Corps" energy problem from headquarters. Commanders on the ground understand their own needs and solutions better than he does. He challenged the Marines in the audience to "be a part of the solution" and tell him what else the Marine Corps can be doing to reduce fuel consumption.

Colonel Caley highlighted the three Programs of Record (POR) for renewable energy systems:

1. Solar Powered Alternative Communications Energy System (SPACES)

   SPACES is a lightweight, portable, renewable energy system designed to provide power for platoon- and squad-size units operating in remote locations. Marines use SPACES to recharge batteries that power communications equipment like satellite radios, reducing the number of batteries carried on extended patrols.

2. Ground Renewable Expeditionary Energy Network System (GREENS)

   GREENS is a portable power generation system that incorporates solar panels, energy storage and AC/DC power sources. GREENS provides an average contin-

Colonel James C. Caley speaks about the importance of energy conservation at the Pacific Views Event Center aboard MCB Camp Pendleton.

Cpl. Orrin G. Farmer

uous output of 300 watts or 1,000 watts peak—enough to power a battalion combat operations center. Marines also use GREENS to power the High Mobility Artillery Rocket System and the Ultralightweight Field Howitzer, eliminating the need to tow a 3-kilowatt generator and reducing vehicle idle time.

3. Hybrid Power

   Hybrid power generation--combining batteries, solar, and smart controls with traditional diesel generators—has demonstrated up to 50 percent fuel savings and up to 80 percent reduced generator run time. The Marine Corps is working closely with the Army to develop joint requirements for hybrid power systems that will increase the combat effectiveness of both services.


EXFOB demo.
Kenneth Hess

For more information about these and other energy conservation efforts underway, visit E2O's web site at www.hqmc.marines.mil/e2o.

Before turning over the microphone to the next speaker, Colonel Caley distributed a form to audience members to capture the following information:

1. What other technologies could help the Marine Corps reduce its fuel/power use?
2. What other energy behavior changes should be tackled?
3. How can we further change our ethos?

There was also space on the form for attendees to provide feedback on the value of this training session. Colonel Caley and his team will compile the results of these forms and identify other potential technologies and solutions to help the Marine Corps reduce its energy consumption.

Colonel Caley then guided the audience through a brief that highlighted the history, impact and future of the Experimental Forward Operating Base (ExFOB).

Created by the Commandant in 2009, ExFOB brings together stakeholders from across the Marine Corps requirements, acquisition and technology development communities in a dynamic process to quickly evaluate and deploy technologies that reduce battlefield energy and water requirements.

Once per year, the Marine Corps invites select industry participants to ExFOB to demonstrate off-the-shelf technologies with the potential to address current Marine Corps capability gaps. Following the demonstration, promising technologies will be evaluated in a controlled laboratory environment and then put into the hands of Marines for field testing in combat conditions. Laboratory and field evaluation results will inform requirements development and may ultimately lead to fielding of systems in support of a more combat-effective fighting force.

Through the ExFOB process, the Marine Corps brings energy efficient technology from "concept to combat." Once fielded, energy and water technologies first demon-

Getting Marines to understand the energy problem and their role in tackling it will jump-start a critical energy culture change in the Marine Corps.

strated at ExFOB will increase the operational reach of the force. Specific capability gains expected from these systems include:

- Power patrol bases entirely on renewable energy.
- Conduct extended foot patrols with limited or no fuel or battery resupply.
- Lighten the carried load of batteries and water for a 96-hour patrol from approximately 65 pounds to approximately seven pounds.
- Reduce the need to carry multiple types of batteries.
- Reduce generator runtime by up to 80 percent and generator fuel use by up to 50 percent.
- Increase fuel efficiency of the Medium Tactical Vehicle Replacement (MTVR) by 25 percent or more.

The next ExFOB will be held May 12–16, 2014 at Camp Pendleton and focus on tactical energy harvesting.

Afternoon of More Presentations & Hands-on Training

Rounding out the afternoon at the Camp Pendleton event were the following two presentations:

1. The Commander's Energy Readiness Program

   Whether in training or on the battlefield, every Marine knows exactly how much ammunition he has. Marines do not have that same level of visibility over their energy supply. By direction from the CMC, E2O is working to raise awareness in the Fleet and enable Marines to manage their fuel, just as they manage their ammunition. The Commander's Energy Readiness Program (CERP), launched in 2013, arms battalion and squadron commanders with fuel and power data, enabling them to plan and make decisions that can increase training days or extend operational reach. As budgets decline, programs like CERP will ensure that Marines extract the most readiness out of every gallon of fuel they use. CERP will pave the way for a Marine Corps Order that standardizes energy management across the operating forces, as well as a full-scale metering program that will inform operational planning at all levels of MAGTF.

2. Marine Corps Installations Command (MCICOM) and Marine Corps Installations-West (MCI-West (Camp Pendleton)) Installation Energy Programs

   MCICOM Facilities Director, CAPT Pat Garin opened the installations session with the G-4's and Senior enlisted

A Marine drives an MTVR onto the beach during roll-on/roll-off discharge facility operations.
MC2 Bryan Niegel

Attendees at the MCB Camp Pendleton event received training on two of the POR energy systems that have been fielded to the Fleet including GREENS and SPACES.

to provide an overall perspective about how installations energy supports the Marine Corps mission, providing the platform from which Marines train and deploy. Responsible management of installations energy not only takes advantage of recent facilities improvements, but requires the efforts of everyone on Marine Corps bases to use energy wisely. MCICOM SgtMaj Ploskonka further emphasized the personal buy-in and approach needed to really develop an energy "ethos" in day-to-day events. Bob Gilleskie, MCIWEST Energy Manager and Jeff Allen, Camp Pendleton Energy Manager then provided an overview of efficiency and renewable energy initiatives under way and planned for the region and the base. Finally, Aaron Fielder, a Regional Energy Advisor for MCIWEST with Booz Allen Hamilton, and former Marine, discussed the upcoming Unit Energy Manager Program that will provide a means for installations energy managers to interact with base units and work to really manage unit energy use.

The first Marine Corps SECNAV energy training event concluded as attendees went outside of the Pacific Views Event Center to receive training on two of the POR energy systems that have been fielded to the Fleet including GREENS and SPACES.

At the end of the day, the assembled Marines had a better appreciation of the Marine Corps' energy challenges, increased understanding of existing operational and installation energy efforts, enhanced awareness of future energy efforts, and practical skills from hands-on equipment training.

A third SECNAV energy training event was hosted by U.S. Fleet Forces Command at Naval Station Norfolk on March 25, 2014. For more information about this event, contact Ted Brown, Public Affairs Officer at U.S. Fleet Forces Command at 757-836-4427 and theodore.brown@navy.mil or see our article in the summer 2014 issue of *Currents*. The fourth and final energy training event was scheduled for April 30, 2014, at Marine Corps Base Camp Lejuene. For more information about this event, contact Katie Hantson at the information provided below. ⚓

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