

NAVY COMPASS

Special Environmental Edition

Navy 'leading the way' in green movement

*Fleet to cut energy use
by 50 percent
over next ten years*

By Lisa Daniel
American Forces
Press Service

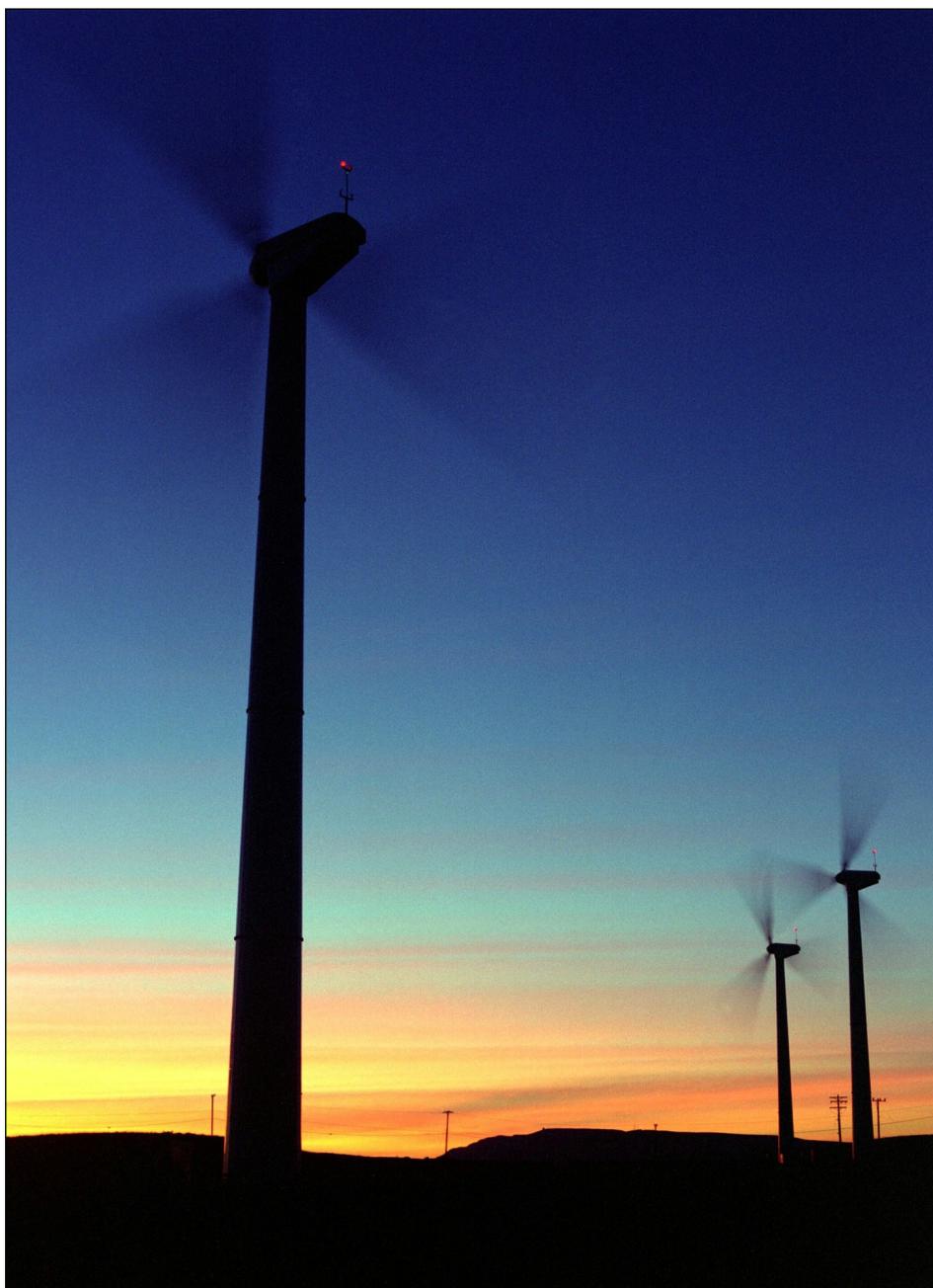
A major independent research group called the Defense Department a leader in energy conservation April 20.

"The department is doing more than sounding an alarm; it has enacted energy goals and is inventing, testing and deploying new technologies and alternative fuels to meet those goals," Phyllis Cuttino, director of Pew Charitable Trusts' climate and energy programs, said during a conference call to announce the program's new report on military use and conservation of energy.

"The military is, in many respects, leading the way and helping to re-energize America's future," said Cuttino.

The department is a prime consumer accounting for 80 percent of the U.S. government's energy consumption, amounting to 330,000 barrels of oil and 3.8 billion kilowatts of electricity per day for more than 500 major military installations, said Cuttino. But it is on its way to meeting its stated goal of having 25 percent of its energy come from renewable sources by 2025, said Cuttino.

The report, "Reenergizing America's Defense: How the Armed Forces Are Stepping Forward to Combat Climate Change and Improve U.S.



Three 225-kW wind turbines on San Clemente Island provide more than 11 percent of the island's power. By next year, Navy Region Southwest will generate 26 percent of all its renewable energy through wind turbines.

See *GREEN*, pg. 4



The newly-constructed Bainbridge Park at Naval Base San Diego is home to a four-lane, quarter-mile track with picnic areas and basketball courts. The park is entirely synthetic, incorporating xeriscaping and artificial turf.

Partnering for a greener future

Navy Region Southwest works throughout the year to minimize its impact on the environment.



A worker at Naval Base Ventura County installs an energy-saving LED Prolific Roadway luminary.



YN1(SW) Michael Trisler collects garbage from around the Navy Broadway Complex in San Diego during Earth Day 2010.

NRSW leader in energy, water conservation

*Southwest Region
reduces dependence
on foreign oil*

By MC1 Heather W. Hines
Navy Region Southwest
Public Affairs

With messages of ‘energy conservation’ and ‘reduce your carbon footprint’ on the forefront of saving planet Earth, Americans are constantly looking for innovative uses of everyday consumables.

From a corporate perspective, the Navy has taken steps to ensure it remains in the forefront of renewable energy and water conservation. According to Navy Region Southwest (NRSW) Energy Resource Efficiency Manager Fred Speece, the Southwest Region has been a leader in the Navy for completing such renewable energy projects.

One such project is the photovoltaic systems that have been installed on several bases throughout the Region. The system consists of roof-top paneling or solar panels, that take direct-current electricity, produced through the sun and converts it to alternating current.

“We’re taking sun energy [after it goes through the panel] and converting it into direct-current electricity. In this case 57.7 kilowatts, is inverted to alternating currents which is then feed directly into the Navy’s grid, through a transformer,” Speece said. “Right now, the sun is producing 24.8 kilowatts of energy, and over time it will be kilowatt hours produced,” he added as he reviewed the information display on a converter unit.

Everywhere the Navy has photovoltaic systems; there are inverters to convert direct current energy to alternate current.

“Photovoltaic carports is an easy



Photovoltaic cells line the roof of a building at Naval Amphibious Base. The cells convert sunlight into electricity fed directly into the Navy’s grid.

one for [the Navy], because we have a lot of parking areas and the ability to build these in various sites. We have some along the pier side, helping reduce energy used by the ship. We have [them at] long-term and short-term parking. We are also looking at installing roof-top photovoltaic in a thin film [version] that is glued to the roof or panels on top of that.

These photovoltaic systems can be placed on any flat roof tops, and can vary in size from square feet to acreage.

Another energy project that the Navy has been managing for some time is water conservation. For NRSW, this is even more of a concern in the San Diego metropolitan area.

“For the Southwest Region, that is even more important because

of the finite amount of water available in the SD area,” Speece said. “And because of this, the Navy has completed several projects to help reduce the total amount of water consumed on a daily basis.”

Some of these projects have come

in the form low-water urinals, toilets, and shower heads that are meeting or exceeding the Navy’s goal for water consumption per gallon, he said.

“The other thing [the Navy] has done is looked at amount of water that is going into irrigation and landscaping and has come up with various initiatives, such as smart landscapes,” Speece said.

Anytime new buildings are constructed, low-water landscaping, rocks, artificial turf or limited planting materials are added.

NRSW has also taken a massive irrigation system that was piece-milled over time, and installed one master, irrigation control system. “This system can be managed throughout the region from one or various desktops. [It also collects] weather conditions, heat load [which helps to] save water,” Speece said.

If for some chance there is a broken pipe within the network, the system recognizes that and automatically shuts down.

“From a water perspective, the Southwest Region has done a fabulous job in reducing our dependency on water in San Diego, and meeting and exceeding the Navy’s goals.” ❀

“Southwest Region has done a fabulous job in reducing our dependency on water in San Diego.”

**- Fred Speece,
NRSW energy resource
efficiency manager**

GREEN from front page

An F/A-18F Super Hornet strike fighter, dubbed the “Green Hornet,” conducts a supersonic flight test over Naval Air Station Patuxent River, Md. The aircraft is fueled with a 50/50 blend of biofuel and conventional fuel.

Energy Posture,” outlines how the department and military services are moving toward that goal. As with the creation of the Internet and global positioning technology, the department is leading the effort in discovering ways to not only use less fuel, but also to use alternative fuels to reduce greenhouse gasses and be less reliant on foreign oil, the report says.

Amanda J. Dory, deputy assistant secretary of defense for strategy; Navy Secretary Ray Mabus; and John W. Warner, a former Navy secretary and U.S. senator from Virginia, took part in the report and the conference call. They described the department’s efforts at energy conservation and innovation as important to both national security and the environment.

“The Department of Defense takes climate change seriously,” said Dory, adding that department officials have “embraced” conservation in policies and law, including acquisitions.

Defense Secretary Robert M. Gates identified energy as one of the department’s top 25 transformational priorities, and the Quadrennial Defense Review, released Feb. 1, is the first strategic document to give “thorough treatment” to energy issues, said Dory.

Mabus said the Navy historically has been a leader in energy changes – from sails to coal, from coal to fuel, and from fuel to nuclear energy.

“Every single time,” said Mabus, “it made our Navy

and our Marine Corps more efficient and better fighters, and we’re absolutely confident that it will be the case again this time.”

By 2020, Navy officials plan to have half of the service’s fuel use, both ashore and afloat, come from non-fossil sources, Mabus said. Officials expect to cut fuel consumption for the Navy’s 50,000 noncombat vehicles with alternative methods within five years, said Mabus.

The decreasing reliance on fossil fuels “will make us better warfighters,” Mabus

said, both strategically by reducing dependence on oil from volatile nations, and tactically by freeing up warfighters from delivering as much fuel and reducing the high-risk of attacks on convoys that carry it.

Mabus gave other examples of how the Navy is going “green”:

- The Navy is developing a “green” carrier strike group to run completely on alternative fuels by 2016, and this week plans to do a flight demonstration of the “Green Hornet,” an F-18 Super Hornet powered by a 50/50 biofuel blend.

- The Navy last year commissioned the USS Makin Island (LHD 8), a large-deck amphibious ship propelled by both gas and electric engines, expected to save the service \$25 million over the ship’s lifetime.

- Naval Air Weapons Station China Lake, Calif. – the service’s largest land holding – is being powered solely by geothermal sources and has produced enough geothermal energy to provide for the surrounding community. ♻️



A geothermal energy plant at Naval Air Weapons Station China Lake produces enough energy to power the entire installation and the surrounding community.

Navy goes green with new hybrid ship

By U.S. Navy Surface Forces
Public Affairs

USS Makin Island (LHD 8) was formally commissioned Oct. 24 in a ceremony on Naval Air Station North Island (NASNI).

The ship dubbed the “Prius of Navy warships,” arrived in San Diego in mid-September, three years after her christening. She brought over 1,000 Sailors and their families to the San Diego community.

“I am proud this ship, and that her Sailors, Marines, and families will all call San Diego ‘home’,” said Congresswoman Susan Davis, the senior U.S. government official present. “It is great to have a new, ‘green,’ addition to San Diego. Each of you contributes to mission success and to our great community.”

Adm. Patrick Walsh, commander, Pacific Fleet, the event’s principal speaker, addressed the impact of Makin Island on the fleet.

“USS Makin Island represents the US Navy’s long standing commitment to both the defense of our nation and ensuring security and stability in the Asia-Pacific region and beyond,” said Walsh. “This commissioning also marks a new and significant chapter in the US Navy’s history. The Navy will look to the USS Makin Island as

the example as we move aggressively forward with plans to reduce our reliance on fossil fuels and other hazardous chemicals.”

Makin Island is the final amphibious assault ship built in the LHD-1 Wasp-class, but is the first of the class built with gas turbine engines and electric drive. The Navy projects that this advance will save nearly \$250 million in fuel costs over the ship’s lifetime.

USS MAKIN ISLAND

FAST FACTS

Length: 847 ft.

Speed: 20 knots

Range: 9500+ miles

Crew: 1450

The development is already paying off – during the ships transit from Pascagoula, Miss., to San Diego, Makin Island consumed over 900,000 gallons less fuel than a steam ship completing the same transit, saving more than \$2 million in fuel costs. Other environmentally-friendly initiatives include the use of an electric plant to power auxiliaries, meaning no steam

or associated chemicals; and the use of reverse osmosis water purification systems that negate the need for chemicals like bromine or chlorine.

“This warship significantly enhances our joint Navy and Marine Corps capability,” said Vice Adm. D.C. Curtis, commander, Naval Surface Forces. “In support of our nation’s maritime strategy, it possesses the ability to rapidly respond to emergent tasking anywhere, anytime.”

It was quite a day for Capt. Bob Kopas, commanding officer, USS Makin Island, who guided the ship and her Sailors through over four years of construction and trials. He gave thanks to the crew for working together to reach a momentous occasion.

“You have shown the metal you are made of every day,” Kopas said. “In Mississippi you demonstrated your humanity by rebuilding playgrounds that were destroyed by Hurricane Katrina, and during our port visits in South America you demonstrated your compassion by volunteering your off-duty time to renovate schools and other community facilities. Over the past four years, the dedication and enthusiasm you have shown has been the ‘flames’ which have heated the metal of our ship, making her able to meet the challenges of our nation and the Navy over the next 40 years and beyond.”



USS Makin Island is the United States Navy’s first “hybrid” amphibious assault ship, combining gas turbines with auxiliary motors that run off the ship’s electrical grid. Makin Island is stationed at Naval Base San Diego.

Naval Base San Diego's green thumb gets CNO and SECNAV award nods



The redesigned marquee at the main gate for Naval Base San Diego incorporates smart landscaping techniques, including xeriscaping and artificial turf.

New Environmental Management System Program saves almost \$300,000 in one year

By Maile Baca

*Naval Base San Diego
Public Affairs*

Naval Base San Diego (NBSD) has won both the Chief of Naval Operations (CNO) and the Secretary of the Navy's (SECNAV) fiscal year 2009 Environmental Awards in the category of Environmental Quality, Non-Industrial Installation. These award programs recognize individuals, teams, ships and installations for exceptional environmental stewardship in several categories.

Throughout the past year, NBSD has significantly reduced its impact of operations on the environment. The introduction of new ideas

and equipment which reduce waste, capture pollutants, and otherwise mitigate environmental impacts at NBSD has led to regulatory compliance in all areas of NBSD activities.

"Our execution of xeriscape, artificial turf and smart irrigation controller projects on the base have saved an estimated \$115,000 in water and grounds maintenance costs and around 10 million gallons of water annually," said Mark Edson, the Installation Environmental Program Manager for NBSD.

In addition to the water conservation efforts, NBSD established an Environmental Management System Program, performed

over 5,500 inspections of base activities, trained 988 Navy personnel saving approximately \$300,000 in contractor training, and contributed over 10,000 man-hours annually to base

environmental activities.

NBSD also holds bi-annual community clean up events and has a monthly harbor clean up program which, together, removed just under 10,000 pounds of trash from the community in 2009. A total of 1,172 volunteers contributed to the clean harbor – safe neighborhood initiatives.

In the latter half of 2009, NBSD's Environmental department initiated an electronic recycling event that resulted in the turn-in of \$430,000 in electronic items and appliances and a diversion of 24 tons of material from the local landfill.

"The e-waste turn in event proved to be a huge success and we are now implementing similar events on a periodic basis," stated NBSD's Commanding Officer, Captain Rick Williamson.

Capt. Williamson and Mr. Edson will attend both of the awards ceremonies at the Heritage Center at the U.S. Navy Memorial in Washington D. C. on 1 June.



Photovoltaic carports at Naval Base San Diego provide power for the Navy's electrical grid and ships in port.