

# NRSW Environmental Sustainability Award



## Navy Region Southwest Wins Environmental Sustainability Honor Award



*We are very proud of the efforts we have made to implement sustainability programs across our region. Our programs protect energy, air, water, and land resources essential to Navy training and operations in a world where competition is increasingly fierce. The Navy also recognizes conserving the resources of communities that host our installations and forces saves taxpayer dollars. — Rear Admiral Patrick J. Lorge, Commander, Navy Region Southwest*

Navy Region Southwest (NRSW) was selected for an Honor Award in the Environmental Sustainability Category in the 2014 Excellence in Environmental Engineering and Science Award international competition by the American Academy of Environmental Engineers and Scientists. The award was presented 24 April 2014 at the Academy's awards conference and luncheon at the National Press Club in Washington, DC. The award demonstrates the accomplishments of NRSW in striving to achieve the goals of the Department of Defense Strategic Sustainability Performance Plan and the sustainability goals of the Secretary of the Navy.

The award's Environmental Sustainability Category includes "supporting the quality of life while living within the carrying capacity of all systems. A long term balance of environmental stewardship, economic development, and social well-being must be achieved, including renewable resources timely regenerated, timely substitute replacement of nonrenewable resources, and harmful substances absorbed timely or made harmless." Navy Region Southwest's nomination included the waste reduction and recycling, electrical energy and water conservation, renewable energy, and Greenhouse Gas emissions reduction components of the NRSW sustainability program.

Navy Region Southwest (NRSW) overlays an extensive environmental sustainability program in support of

10 naval installations, 64 fleet ships and 556 aircraft and associated ranges, personnel housing and other



NRSW ships in port and ashore installations provide high levels of diversion and recycling

activities across California, Nevada, Arizona, Utah, Colorado, and New Mexico. Nearly 10,000 personnel work on the 10 installations with a plant replacement value of nearly \$32 billion and nearly 12,000 struc-

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tures as well as 13,000 housing units. These complex facilities and operations present daunting challenges and rich opportunities for waste diversion and recycling, electrical energy and water conservation, and renewable energy development. Moreover, the programs reduce greenhouse gas emissions, generate materials and markets for recycled products, and create jobs to construct, operate, and maintain the associated facilities.

The projects contribute substantially to the protection and sustainability of air, water, land, and energy resources of the region. Innovative waste reduction and

### Waste Reduction and Recycling



NRSW recycled 343 obsolete rail cars in partnership with the city of Concord, California

recycling efforts include diversion and recycling of municipal solid waste and construction and demolition wastes, reuse of office products, in-port ship waste recycling, rail cars recycling, green purchasing, and leadership in energy and environmental design (LEED) construction that have achieved nearly 75 percent diversion from landfill disposal -- already achieving a DoD goal of 50 percent diversion by 2015. For these efforts, NRSW received California's highest environmental honor in 2012 in the Waste Reduction Category -- the Governor's Environmental and Economic Leadership Award -- and has been named Recycler of the Year for eight consecutive years by the City of San Diego.

The program includes aggressive electrical energy and water conservation with one of the most robust area wide energy management systems in the Navy and a smart grid enabled microgrid demonstration project that earned selection as an Energy Champion for the Federal Government Sector as part of San Diego Gas &

### Waste Reduction and Recycling



LEED projects are constructed with recycled materials and divert 50 to 75% of construction waste

Electric's 2014 Energy Showcase. Water conservation efforts have achieved a 26 percent reduction in potable water consumption -- well ahead of goal -- while industrial and irrigation water is on track to achieve a goal of 20 percent reduction.

Recognizing that large-scale renewable energy is critical to achieving greenhouse gas (GHG) reduction goals, NRSW has executed partnerships with the private sector, such as a new 13.8 MW-dc photovoltaic (PV) array at Naval Air Weapons Station China Lake, CA, that will provide 30 percent of the bases' annual energy needs. Other renewable energy projects include 272 MW of geothermal, 22 MW of PV, and 1.575 MW of wind power installed, authorized, or in development.

### Waste Reduction and Recycling



NRSW Sustainable Interior Showroom showcases beauty and functionality of recycled furniture and products

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Other GHG reduction aspects include employee teleworking, transportation incentives, reductions in air travel, and conversion to low and zero emission plug-in and all electric fleet vehicles.

Through these programs, NRSW provides employment and economic benefits across San Diego County and the region. Waste diversion extends the life of existing landfills and forestalls the need for new disposal facilities that could affect socioeconomically disadvantaged neighborhoods. Policies for purchasing recycled office furniture and products and construction of LEED certified buildings with high levels of recycled compo-

### Energy and Water Conservation



Low Impact Development for all projects over 465 square meters mitigate storm water runoff and reduce water use

nents provide markets for the recycled products industry. The programs create jobs for workers at the lower end of socioeconomic spectrum that diffuses economically through disadvantaged neighborhoods. Jobs are created and sustained for installation and operation of energy and water conservation systems and construction and operation of renewable energy projects.

The Sustainable Solid Waste program has operated since 1998, and has included elements of non-hazardous solid waste reuse and recycling, as well as diversion of construction and demolition debris and wastes through projects such as LEED certified construction (since 2009). Newer innovations to this program have included diversion of homeport Navy ship recycling and recycling through deconstruction of obsolete rail cars. Large scale (over 1 MW) electrical energy conservation began in 2013 and water conservation efforts started in 2004. Some renewable energy projects, such as wind turbines, began at San Clemente

### Renewable Energy Generation



With ample solar radiation and open space available, photovoltaic projects abound at NRSW installations

Island in 1998 while geothermal projects have operated since 1987. PV projects were initiated in 2004 and have grown substantially in the last few years.

Naval Facilities Engineering Command Southwest (NAVFAC SW) functions as the facilities engineer for NRSW to design, construct, and operate capital improvements, real property assets, public works, and environmental projects and services that include the environmental sustainability



### Renewable Energy Generation



Geothermal projects at NRSW installations generate 272 MW of renewable energy

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## Greenhouse Gas Emissions Reduction



Charging stations support conversion to electric vehicles to reduce Greenhouse Gas emissions

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components. To accomplish these projects and services, engineering and construction businesses, both large and small, including disadvantaged firms, execute more than \$1.5 billion of work annually.

The American Academy of Environmental Engineers and Scientists (AAEES) is an international intersociety board sponsored by 11 professional organizations (e.g. American Public Works Association and American Society of Civil Engineers). In addition to a program to certify environmental engineers and scientists, the Academy confers awards on individuals and organizations for excellence in environmental engineering and science, assists the Accreditation Board for Engineering and Technology (ABET) in evaluating graduate and undergraduate environmental engineering programs, and is actively involved in environmental policy issues at the state, federal, and international level. The Academy's website is [www.aaees.org](http://www.aaees.org).



## Program Highlights

### Waste Reduction and Recycling

- Received California Governor's Environmental and Economic Leadership Award in Waste Reduction Category
- Recycler of Year by City of San Diego for 8th consecutive year
- FY 12 achieved 74.37% waste diversion—already met DoD goal of 50% diversion by 2015
- Furniture reuse and landfill cost avoidance \$7.27 M
- Green purchasing requires recycled content products
- LEED construction diverted 50-75% demolition and construction wastes
- DoD leader in specifying sustainable office products
- Food waste composted



### Energy and Water Conservation

- Navy leader in implementing new Smart Grid technologies
- One of most robust area wide Energy Management Systems in the Navy
- Potable water consumption reduced 26% — well ahead of goal
- Industrial and irrigation water reduction of 20% on track
- Low Impact Development for all projects over 465 square meters

### Renewable Energy Generation

- Navy's largest solar installation (13.8 MW-dc) constructed under 20 year power purchase agreement — first of this duration for federal government
- 272 MW geothermal operational
- 22 MW photovoltaic operational
- 1.575 MW wind operational, authorized, or in development

### Greenhouse Gas Emissions

- Goal of 30% telework 1 day per week
- Transportation Incentive Program supports car pooling and public transportation
- Reducing employee air travel
- Implementing GHG emission goals
- Conversion to low and zero emission plug-in hybrid and all electric vehicles for fleet and heavy duty vehicles — 20% can use biofuel