



NAVFAC Atlantic Energy Project Contracting

30 JUNE 2011

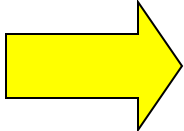
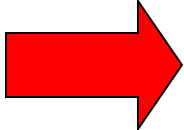
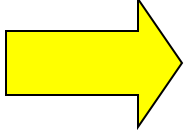
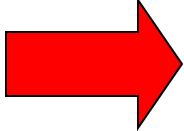
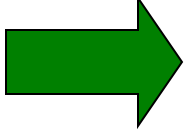
NEW SECNAV ENERGY GOALS



- **First:** Change the way the Navy and Marine Corps awards contracts. The lifetime energy cost of a building or a system, and the fully burdened cost of fuel in powering those, will be a mandatory evaluation factor used when awarding contracts.
- **Second:** The Navy will demonstrate in local operations by 2012 a Green Strike Group composed of nuclear vessels and ships powered by biofuel.
- **Third:** The Department of the Navy will by 2015 reduce petroleum use in our 50,000 strong commercial fleet in half - by 50 percent.
- **Fourth:** The Department of the Navy will by 2020 produce at least half of our shore-based energy requirements on our installations from alternative sources.
- **Fifth:** By 2020, half of DON's total energy consumption for ships, aircraft, tanks, vehicles, and shore installations will come from alternative sources.

SHORE ENERGY: LAW AND POLICY



Energy Reduction Goals	<u>Status</u> 	<ul style="list-style-type: none">•Reduce Consumption by 3% per year or 30% by 2015•Reduce water consumption by 2% annually•All new construction and renovations greater than \$2.5M required to reduce fossil fuel consumption by 55% in FY10 & 100% by 2030
Renewables		<ul style="list-style-type: none">•Purchase renewable elect: 3% now and 7.5% by FY13•Renewable provide 25% of electricity by 2025•Install renewable fuel pumps at all fleet fueling centers
Metering		<ul style="list-style-type: none">•Elect meters on all buildings by end of 2012•Natural gas and steam meters on all facilities (requires DoD interpretation) by 2016
Sustainable Facilities		<ul style="list-style-type: none">•Buildings to be designed 30% better than ASHRAE Stds•15% of bldg inventory to be sustainable by 2015•All lease spaces required to have earned Energy Star label•Comprehensive energy and water evaluations on all buildings on a 4-year cycle
Vehicles		<ul style="list-style-type: none">•Purchase 100% Alternative Fuel Vehicles•20% reduction in annual petroleum consumption by 2015

DOD or DON policy in blue

Two Primary Methods

- Use your own money
 - Installation Funds (Spec Proj)
 - Region Funds (eSRM)
- Use someone else's money
 - ECIP & MILCON (Congress)
 - Alternative Financing (UESC and ESPC)
 - MMRP (NWCF)

Energy Project Execution Vehicles



- **Utility Energy Services Contract (UESC)**
 - Contract with local utility
 - May finance design and construction
 - Measurement & Verification required (M&V), guarantees generally not required
- **Energy Savings Performance Contract (ESPC)**
 - Contract through pre-approved Energy Services Companies (ESCO)
 - Design and construction financed
 - M&V required
 - Savings guarantees required
- **Design/Build, Design/Bid/Build**
 - Centrally funded Energy Conservation Investment Program (ECIP)
 - Self-funded by Base, Region or Other

- **UESC & ESPC must be economical**
 - Utility prices significantly impact economics
 - Energy Incentives can help make economics better

- **ECIP must be economical**
 - In recent years only for renewable projects
 - More difficult to get renewables to pay back in some areas

- **eROI (CNIC Tool) required for eSRM, eMMRP**

- **M&V required for all**

Project Execution Process - UESC



•UESC

- Three options for scope of work development
 - Purchase from A&E
 - Obtain from gas and/or utility company at no cost to the government
 - Developed by government staff
 - Cannot do a task order for a study with UESC vehicle
- Initial Preliminary Feasibility Audit
 - Identifies a number of opportunities
 - Screening tool: Navy proceeds to next step if project is promising
- Notice of Intent
 - advertises Government’s intent to award UESC contract
 - If more than one response then competitive process is initiated
- Preliminary Feasibility Audit
 - In depth examination of chosen opportunities (technical and economic)
 - Final “Go/No Go” decision point for the project
- FECs award the projects
 - Measurement & Verification now required

Project Execution Process - ESPC



- **ESPC – New Process**

- Navy/Marines put together a Site Data Package
- Request Proposals from all ESPC Contractors
- Go through Selection Process
- Final “Go/No Go” decision point for the project
- Design/Build
 - Financed
 - M&V is included, savings are guaranteed
 - Maintenance often performed by the ESCO as part of savings guarantee
 - Contracted through Specialty Center Acquisitions, Navy (SCAN)

Project Execution Process - ECIP



- **ECIP – Centrally Funded (in full)**
 - **Funding for ECIP (Energy Conservation Investment Program) appropriated by Congress similar to MILCON**
 - **Funds for design available the FY before construction**
 - **Funds generally arrive in 2nd Qtr of year of construction**
 - **Funds and construction contracts treated same as MILCON**
 - **Executed by FECs**

Navy Energy Programs



- **Energy Conservation Investment Program (ECIP)**
 - Part of MILCON program
 - FY11 had 14 projects valued at \$18M
 - Projects between \$334K and \$5.1M
 - Solar Hot Water, Solar Electric, Ground Source Heat, Wind
 - FY12 TBD
- **Financed Energy Projects**
(Projects must pay for themselves from savings)
 - **Energy Saving Performance Contracts (ESPC)**
 - No projects in FY11
 - No projects in FY12 forecasted
 - **Utility Energy Savings Contracts (UESC)**
 - 20 projects in FY11
 - Similar projects in FY12 forecasted

Navy Energy - Focus Projects



- **MILCONs**

- Part of Navy MILCON program

- FY12 has 3 projects

- P-816 Decentralize Steam System – Naval Station Great Lakes

- P-197 Steam Decentralization - Naval Station Norfolk

- P-222 Decentralized Steam System – Naval Support Facility Indian Head

- FY13 unpublished

- **Sustainment Repair & Maintenance (SRM-e)**

- Part of Navy Special Projects Program

- No projects in FY11

- Projects in FY12 forecasted

- **Major Maintenance & Repair (MMR-e)**

- Part of Major Maintenance & Repair

- funded by Navy Working Capital

- No projects in FY11

- Projects in FY12 forecasted

FY11 ECIPs (Energy Conservation Investment Program)



Project No.	FEC	INSTALLATION/ACTIVITY	STATE/COUNTRY	PROJECT DESCRIPTION	PROGRAM AMOUNT (\$1,000)	SIR
P-1203	EU	NSA Souda Bay	Crete	Solar Water Heating	\$595	1.12
P-1030	ML	NAB Little Creek	VA	Solar Ventilation Pre-Heat	\$744	1.50
P-1201	ML	NSA Norfolk	VA	GSHP and Solar Wall	\$1,253	1.36
P-1207	SW	NAS Lemoore	CA	Day Lighting and PV	\$964	1.05
P-1010	EU	NAS Sigonella	Italy	Solar Street Lighting	\$860	1.05
P-1021	EU	NAS Sigonella	Italy	Solar Pool Heating (NAS 1)	\$536	1.94
P-1026	EU	NAS Sigonella	Italy	Solar Pool Heating (NAS 2)	\$430	1.85
P-1024	SE	NSWC Andros Is.	Bahamas	1 MW Wind Turbine	\$5,045	1.72
P-1006	SW	NAWS China Lake	CA	Ground Source Heat Pumps	\$1,480	1.22
P-1023	SW	NB San Diego	CA	Solar Thermal DHW - 6 Buildings	\$1,041	1.94
P-1025	SW	NAS - Fallon	NV	Solar thermal and Daylighting Improvements	\$378	2.06

FY11 Financed (Utility Energy Savings Contracts)

List 1 of 2



Project No.	FEC	INSTALLATION/ACTIVITY	STATE/COUNTRY	PROJECT DESCRIPTION	PROGRAM AMOUNT (\$1,000)
871376	NW	NAVMAG Indian Island	MD	Facility Energy Improvements Phase 6	
871377	NW	NAS Whidbey Island	WA	Chiller Improvements & Infrared heaters	
871518	SW	NB Point Loma	CA	Metro Phase 2	
871519	SW	NB San Diego	CA	Metro Phase 2	
871520	SW	NB Coronado	CA	Metro Phase 2	
871510	SW	NAS Lemoore	CA	Facility Energy Improvements Phase 5	
1114879	SW	NB Coronado	CA	Facility Energy Improvements Phase 2-	

FY11 Financed (Utility Energy Savings Contracts)

List 2 of 2



Project No.	FEC	INSTALLATION/ACTIVITY	STATE/COUNTRY	PROJECT DESCRIPTION	PROGRAM AMOUNT (\$1,000)
871523	SE	NSA Orlando	FL	FEI Three (All) CNIC Buildings	
871515	SE	NAS Pensacola	FL	FEI 9 NASP CNIC Buildings	
1116871	SE	NSB Kings Bay	GA	TRIREFFAC Industrial Area Buildings	
1116989	NDW	NSA Joint Base	DC	Various Energy Improvements , phase 2	
1116990	NDW	NSA Annapolis	MD	Backwash Water Recycling in Waste Water Plant	
1116992	NDW	NAS Pax River	MD	NAWC MicroTherm/Steam to Hot Water Conversion	
1116993	NDW	NSA Washington	DC	Facilities Energy Improvements (FEI), Phase 1	

FY12 MILCONs - Programmed



Project No.	FEC	INSTALLATION/ACTIVITY	STATE/COUNTRY	PROJECT DESCRIPTION	PROGRAM AMOUNT (\$1,000)
P-816	MW	Naval Station Great Lakes	IL	Decentralize Steam System	\$91M
P-197	ML	Naval Station Norfolk	VA	Steam Decentralization	\$27M
P-222	NDW	Naval Support Facility Indian Head	MD	Decentralized Steam System	\$68M

- **We will work on:**

- **Building Optimization and Recommissioning**
- **DDC Energy Conservation & Control**
- **Retro Commissioning**
- **Boilers/Water Conservation**

- **Solar Panels**
- **Solar Thermal Heating**
- **Solar Water Heating**
- **Install Infrared Tube Heat**

- **Weather-Stripping Windows & Doors**
- **Install and Upgrade Building Insulation**
- **Upgrade Windows**
- **Lighting Retrofits**
- **Heat Pipe De-humidification**

FY12 MMRP (Major Maintenance & Repair Program)



FEC	INSTALLATION/ ACTIVITY	STATE/ COUNTRY	PROJECT DESCRIPTION	PROGRA M AMOUNT (\$1,000)	SIR
EU	NAVSTA Rota	Spain	Static frequency converters	\$5500	11.6
ML	NSA Norfolk Navy Shipyard	VA	Replace Stevens St/B163 air line-Phase 2	\$478	6.2
ML	NSA Norfolk Navy Shipyard	VA	Replace Stevens St/B163 air line-Phase 3	\$537	6.9
ML	NS Newport	RI	Replace Steam Lines NUWC Phase 2	\$826	8.2
ML	NS Newport	RI	Replace Steam Lines 293 to NH2-37	\$885	12.0
ML	NAB Little Creek	VA	Replace Steam Line Quay Wall	\$2124	13.4
ML	NMC Portsmouth	VA	Replace Steam Line Bldg 271 South	\$767	14.5
ML	NSA Norfolk Navy Shipyard	VA	M-130 Steam Line Reroute	\$1003	9.8
ML	NSS Portsmouth NSY, Maine	ME	Infiltration Repairs	\$590	23.0
ML	NWS Yorktown	VA	Repair/Replace Gravity Sewer Lines YT	\$1817	28.2
MW	NSA Crane	IN	Replace Multiple Boilers	\$1124	17.0
MW	NSA Crane	IN	Upgrade HV SCADA System	\$603	21.3
MW	NSA Crane	IN	Replace Secondary Transformers	\$2688	10.2
SE	NSB Kings Bay	GA	Thermal piping insulation	\$1288	1.4
SE	NAVSTA Guantanamo Bay	Cuba	Replace 14MW of Prime Power Generation Capacity	\$10101	4.3
SW	NBC-SCI	CA	SCI REWS PV System-Connect to Grid	\$325	12.0



Environmental Supporting Services for the DON's Energy Projects

**Khoi T. Nguyen, Ph.D., P.E.
NAVFAC Atlantic Environmental
June 2011 Industry Forum – Virginia Beach, VA**

Overview



- Environmental areas of interest:
 - Environmental planning
 - Cultural resources management
 - Pollution prevention
 - Natural resources conservation
 - Environmental quality
 - Environmental restoration

- DON is committed to reducing greenhouse gas emissions and other environmental impacts associated with Naval energy consumption by
 - Adopting conservation practices
 - Incorporating sustainability into facility design, construction, operations and maintenance
 - Actively managing fuel use in tactical and expeditionary operations

Typical Environmental Services



- Studies (A/E)
 - Energy and water conservation planning
- Environmental Assessment for specific projects (A/E)
 - **Wind farms**
 - **Geothermal technology**
 - **Waste-to-energy (WTE) plants**
- Environmental compliance before and during construction (A/E, construction contractors)
 - **Construction and operating permits**
 - **Storm water general construction permit for site disturbance 1 ac or more (storm water sampling, inspection, reporting)**
- Facility environmental compliance (A/E)
 - **Air emission inventory (criteria pollutants, GHG)**
 - **Sampling and testing (storm water, wastewater, air emissions)**
- Environmental restoration (A/E, construction contractors)
 - **Contaminated soil testing and remediation (retro-commissioning projects)**
 - **Asbestos and lead-based paint removal (retro-commissioning projects)**
 - **Underground storage tank/contaminated soil removal (retro-commissioning projects)**

EV Services for Major Renewable Energy Technologies



Typical EV Services (A/E, Contractors)	WTE	Wind Turbines	Solar Photo- voltaic	Geo- thermal	Biomass Pwr. Gen.
Site Assessment / Selection	✓	✓		✓	
Environmental Assessment	✓	✓	✓	✓	✓
EV Construction Permitting	✓	✓		✓	✓
EV Operating Permitting	✓	✓		✓	✓
EV Monitoring & Testing	✓			✓	✓
Emission Assessment	✓				

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Back up Slide

Relevant Regulatory/Policy Background and Environmental Implications



- Energy Policy Act of 2005
- Energy Independence and Security Act of 2007 (EISA 07)
- EO 13423 – Strengthening Fed. Envir., Energy, and Transportation Mgmt. (2007)
- EO 13415 – Fed. Leadership in Envir., Energy, and Econ. Performance (2009)
- Greenhouse Gas Regulations; Construction General Permit
- DON Policies
 - **DON's Energy Program for Security and Independence (Oct. 2010)**
 - OPNAVINST 4100.5E – Shore Energy Management (currently in draft)

DON's specific energy and environmental-related goals have been established.