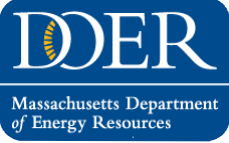


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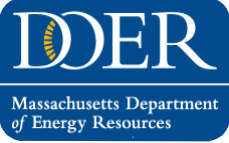
COMMONWEALTH OF MASSACHUSETTS
Deval L. Patrick, Governor
Richard K. Sullivan, Jr., Secretary
Mark Sylvia, Commissioner

Webinar
March 15, 2013
2:00pm

**Clean Energy Assessment &
Strategic Plan for Massachusetts
Military Bases
RFR-ENE-2013-022**

The webinar will start in a few minutes...

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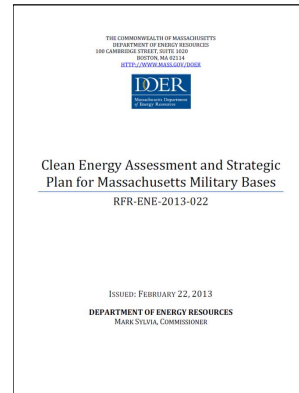
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Webinar
March 15, 2013
2:00pm

**Clean Energy Assessment &
Strategic Plan for Massachusetts
Military Bases
RFR-ENE-2013-022**

Agenda

- “ Introductions
 - Dwayne Breger, Director, Renewable Energy & Climate Change
 - Stephen White, CFO
 - Art Robert, Project Manager
- “ Context
 - DOER
 - Base Overview
- “ Scope of Work
- “ Procurement Information
- “ Questions & Answers

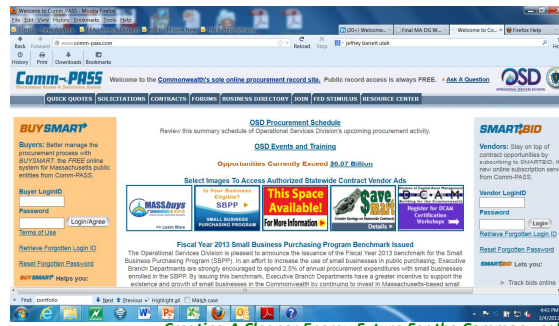


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Administration

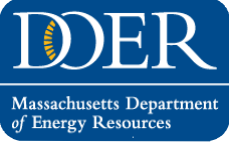
- “ Audio is in one-way mode
- “ Send us your questions via chat box
- “ Webinar recording, presentation, Q&A will be available at www.comm-pass.com



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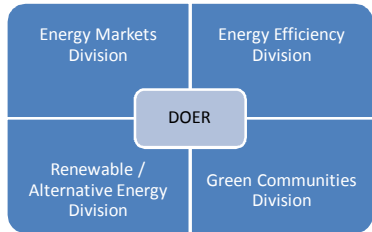



Context

DOER Mission

***Creating a Cleaner Energy
Future for the
Commonwealth***

- Ensure deployment of all cost-effective energy efficiency
- Maximize development of clean energy resources
- Create and implement energy strategies to assure reliable supplies and improve the cost of clean energy relative to fossil-fuel based generation
- Support Massachusetts' clean energy companies and spur Massachusetts' clean energy employment

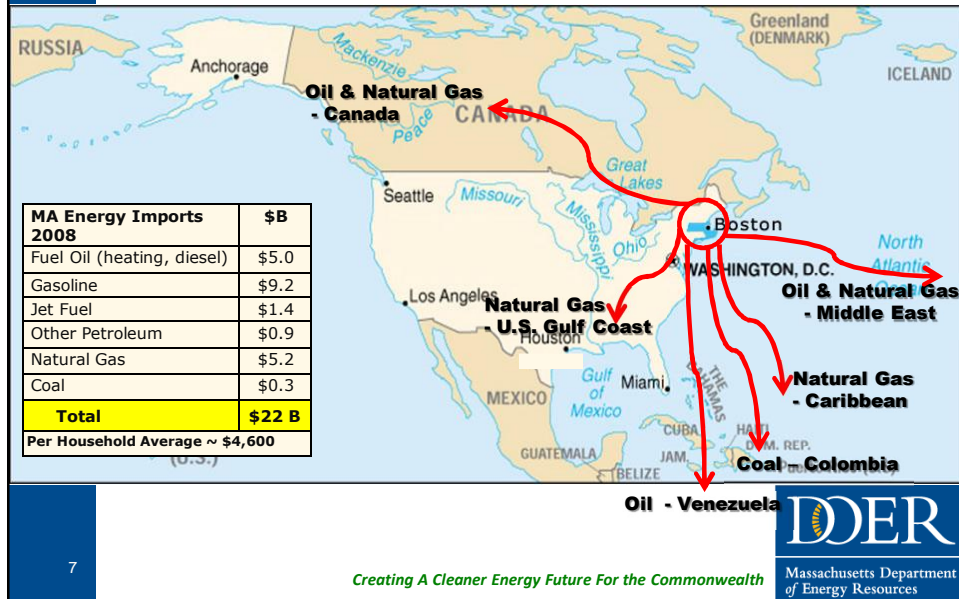




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\$18B Energy Dollars Flow Out of MA

We spend \$22B per year on energy; 80% leaves MA



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State Law Drives Investments, Creates Economic & Environmental Opportunity, National Leadership

- “ **Leading by Example Executive Order 484**
- “ **Green Communities Act (GCA)**
 - . All cost effective energy efficiency
 - . Green Communities (110/45%)
 - . Advanced building energy codes (122)
- “ **Global Warming Solutions Act (GWSA)**
 - . Clean Energy and Climate Plan set GHG emission reduction goals at 25% below 1990 Baseline Levels by 2020; 80% reduction by 2050
- “ **Governor Patrick’s Renewable Energy Goals**
 - . Install 250 megawatts of solar capacity by 2017
 - . Install 2000 megawatts of wind capacity by 2020



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Massachusetts' Clean Energy Success Story

Ambitious energy and environmental goals, combined with strong support of clean energy economy

- #1 state for energy efficiency (ACEEE): 2011, 2012
- #3 in private clean energy investment
- 2012 Massachusetts Clean Energy Industry Report
 - "Nearly 5000 clean energy firms
 - "More than 71,000 workers
 - "1.7% of total Mass. workers
 - "11.2% employment growth
- 110 Green Communities
- 122 Stretch Code Communities
- 205 MW of solar PV installed
- 100 MW of wind generation installed
- Electric vehicle charging stations: over 250 charge points; 124 public EV stations
- Nearly \$70 million in clean energy ARRA funding leveraged



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Shared Energy & Climate Goals

Objective	Department of Defense	Commonwealth of Massachusetts
Increase Energy Efficiency	37.5% reduction in energy intensity by 2020, vs. 2003 baseline <i>Source: DoD's Strategic Sustainability Performance Plan (SSPP) 2012</i>	Increase annual electric savings by 41% (GWh) in 2013-2015 period <i>Source: DPU order 1/31/13</i>
Increase use of Renewable Energy	25% of facility energy from renewables by 2025 <i>Source: NDAA 2010</i>	5% of electric power obtained by Retail Electric Suppliers sourced qualifying renewable sources in 2010; then increases 1%/year <i>Source: Green Communities Act</i>
Impact Climate Change	34% Reduction in Scope 1 & Scope 2, 14% Reduction in Scope 3 Greenhouse Gases by 2020 <i>Source: DoD's SSPP 2012</i>	25% reduction in GHG emission reduction, from 1990 baseline levels, by 2020; 80% reduction by 2050 <i>Source: Global Warming Solutions Act</i>

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Military Asset & Security Strategy Task Force



- ” Formed in February 2012, chaired by Lt. Governor
- ” Two core purposes:
 - Collaborate with & promote Mass military bases
 - Explore new mission opportunities
- ” Four committees:
 - Business, Industry, & Military Alignment
 - Education, Innovation, & Workforce Development
 - Community & Municipal Support
 - Mission, Operations, Opportunities, & Efficiencies
- ” Method:
 - Coordinate efforts across state agencies, complement federal delegation
 - Take action to remedy issues
 - Advise on impact of DoD decisions



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Base Overview

Diverse Missions & Commands

Base	Location	Active Component	Reserve Component	National Guard	US Coast Guard
Barnes ANGB	Westfield			Air	
Fort Devens	Ayer		Army		
Hanscom AFB	Bedford	Air Force			
MMR	Bourne	Air Force		Army, Air	USCG
NSSC	Natick	Army			
Westover ARB	Chicopee		Air Force		

Component mix:

AC = 2

Reserve = 2

NG = 2



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Barnes Air National Guard Base

- “ Major activities:
 - 104th Fighter Wing, MAANG (F-15C)
 - Westfield/Barnes Municipal Airport
- “ Size: - 1,300 empl. (f/t & p/t), \$60MM payroll
- “ Utility service - Electricity & NG: Westfield Municipal
- “ Context
 - ASA – high priority, “must work” mission
 - Energy, maintenance-intensive generators support key missions
 - Recognize need for progress on energy goals
 - Base, airport sit atop regional aquifer
 - Interest in re-looking at utility-scale PV



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Fort Devens

- “ Major activities:
 - 94th RSC, 78th & 98th Division, USAR
 - 1st BN, 25 Marines, 4th MARDIV
 - Northeast Army Reserve Intelligence Support Center
 - 804th Medical Brigade
- “ Size – 5,156 acres, 1,900 FTEs; 380-420 trainees
- “ Utilities - Electricity & NG: MassDevelopment
- “ Context
 - Former active post, now enclave
 - RC training focus – uneven demand
 - USAR funded, IMCOM-operated, subordinate to Ft Dix, NJ
 - PM-FSS Systems Integration Lab, Base Camp Energy
 - Interest in utility-scale PV islanding



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Hanscom Air Force Base

- “ Major activities:
 - Electronic Systems Center, AFMC
 - 66th Air Base Group
 - MIT/Lincoln Laboratory (share border)
- “ Size - 846 acres, 3,628 empl. (f/t & p/t), \$589MM gross payroll
- “ Utilities
 - Utilities: Electricity / NG – NStar, NG: NGrid
- “ Context
 - USAF acquisition, focused on C4ISR
 - Recently lost AFRL activities, due to BRAC
 - Amid major AFMC restructuring
 - MIT/LL abuts property, w/ planned expansion
 - \$5MM+ in energy-related investments deferred
 - Aging steam plant, potential utility-scale PV



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Massachusetts Military Reservation

- “ Major activities:
 - 102nd Intelligence Wing, MAANG
 - Air Station Cape Cod, USCG
 - 6th Space Warning Squadron, USAF
 - Camp Edwards, MAARNG
 - Non-military tenants: County Jail, VA Cemetery, USDA
- “ Size: 22,000+ acres, 2,262 empl. (f/t & p/t), \$118MM payroll
- “ Utilities - Electricity / NG: NStar / NGrid
- “ Context
 - RC training focus, not a joint base, active Energy Team
 - AFCEC-IRP (Air Force Civil Engineer Center)
 - Army / AF joint funding – three 1.5MW wind turbines
 - 102 IW: partnering w/ DLA to build 6 MW Solar farm
 - 6SWS - 2 x 1.6MW turbines under construction
 - USCG using geothermal for hangars, 3 EVs, considering ESPC in FY14
 - ARNG beginning efficiency study



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Natick Soldier Systems Center

- “ Major activities:
 - NSRDEC, US Army
 - USARIEM, US Army
- “ Size:
 - 68 acres, 1,612 empl. (f/t & p/t), \$168MM gross payroll
- “ Utility service - electricity / NG: NSTAR / NGrid
- “ Context
 - Army research center for soldier-focused technology:
 - NSRDEC – “skin out”
 - USARIEM – “skin in”
 - Two recent energy audits, ESPC underway
 - Groundwater remediation – potential GSHP
 - Focus on employee attraction / retention
 - Closed steam plant, infrastructure re-use?



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Westover Air Reserve Base

- “ Major activities:
 - 439th Airlift Wing (C-5), USAFR
 - 302nd Maneuver Enhancement Brigade, USAR
 - 655th Regional Support Group, USAR
- “ Size – 2,500 acres, 3,931 empl. (f/t & p/t), \$140MM payroll
- “ Utility service: Chicopee Electric Light, Columbia Gas
- “ Context
 - RC mission, uneven energy demand
 - Strategic mobility asset w/ maint. facilities
 - RE study showed no opportunities w/ payback, but did not consider state incentives
 - Potential space for PV on bldgs, open areas
 - Interest in CHP



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Base Energy Recap

Divergent 2011 energy use

Base	GSF 2011	BTU/SF 2011	BTU/SF – Chg Over 2010	Chg Consumption	Chg GSF
Barnes ANGB	465K	106K	-8%	+3%	12%
Fort Devens	1,284K	83K	-4%	+7%	+11%
Hanscom AFB	2,555K	208K	+36%	+13%	-17%
MMR*	695K	111K	+7%	+9%	+2%
NSSC	978K	129K	-10%	-10%	0%
Westover ARB	1,432K	131K	+5%	+5%	0%

Source: Department of Defense Annual Energy Management report: FY 2011
 * Data for Otis ANG Base only



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Base Energy Recap

Varied estimates of RE abundance, regulatory & incentives

Base	Solar	Wind	Biomass	Gthm	GSHP
Fort Devens					N/A
Hanscom AFB					N/A
MMR*	N/A	N/A	N/A	N/A	N/A
NSSC					N/A
Westover ARB					N/A

Source: Department of Defense Annual Energy Management report: FY 2011
 * Data for Cape Cod AFS only

Key:
 Green = Compatible
 Amber = Limited Compatibility
 Red = Not Compatible
 N/A = Not Evaluated



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Base Energy Recap

Varied estimates of RE mission compatibility

Base	Solar	Wind	Biomass	Gthm	GSHP
Fort Devens	N/A	N/A	N/A	N/A	N/A
Hanscom AFB					
MMR*	N/A		N/A	N/A	N/A
NSSC					
Westover ARB	N/A	N/A	N/A	N/A	N/A

Source: Department of Defense Annual Energy Management report: FY 2011
 * Data for Cape Cod AFS only

Key:
 Green = Favorable
 Amber = Limited
 Red = Not Favorable
 N/A = Not Evaluated



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Scope of Work

Purpose: Identify & Develop Projects that ...

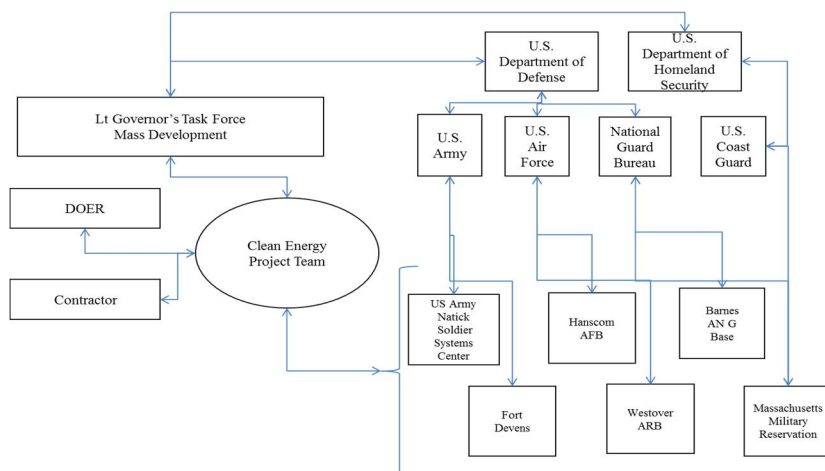
- " Promote opportunities for clean & strategic energy development
- " Reduce base operating costs & enhance energy security
- " In doing so ...
 - Account for different missions, commands, & local conditions
 - Best meet goals and objectives of bases and state

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Organization

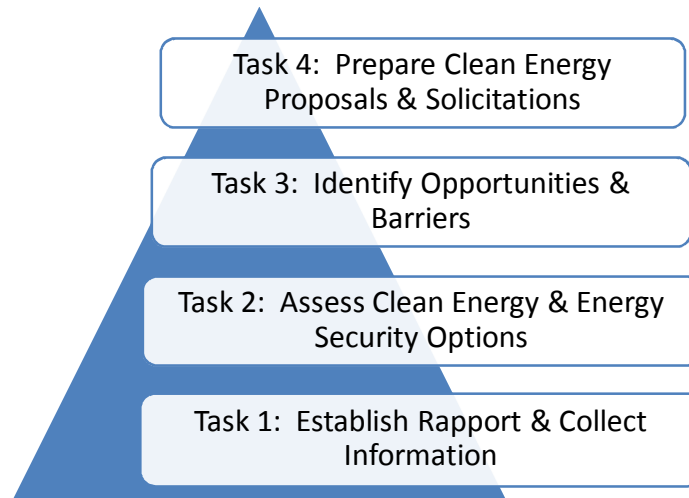


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Scope Overview



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Scope - Task 1

Establish rapport & collect information: JUN – AUG 2013

- “ Listen, learn, build teams, establish baseline information
 - Efficiency, Renewables, Security
 - Current energy use & procurement methods
- “ Address critical baseline knowledge gaps
- “ Deliverables
 - Project management plan (at outset)
 - For each base, a technical report & analysis of existing conditions: energy consumption, load, and metering; for military & affiliated civilian operations

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Scope - Task 2

Assess clean energy and energy security technology options:
JUL – OCT 2013

- “ Consider all options:
 - Energy use / distribution / procurement
 - Efficiency / renewables / Storage
 - CHP / microgrids / green remediation
 - Technology piloting
- “ Consider surrounding communities
- “ Deliverables: For each base, assessment reports identifying & analyzing current energy challenges and clean energy and energy security technology opportunities

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Scope - Task 3

Identify opportunities & barriers: SEP – NOV 2013

- “ For prioritized Task 2 opportunities:
 - Schematic design
 - Benefit/Cost estimates (DoD, state) & funding sources
 - Feasibility – economic, technical, regulatory
 - Identify environmental, ecological sensitivities
- “ Iterate with DOER to reach “short list” of highest priority projects
- “ Deliverables:
 - Report prioritizing clean energy opportunities across the bases
 - Technical reports on each priority project

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Scope - Task 4

Prepare clean energy proposals & solicitations: NOV 2013 – JAN 2014

“ For top priority projects:

- Prepare pre-engineering project plans
- Coordinate project planning (utilities, federal, state)
- Prepare proposal solicitation documents

“ Deliverables:

- Pre-engineering project plans for each approved project
- Proposal and solicitation documents for each approved project

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Procurement

Information

- “ Project value: not to exceed \$1.5MM
- “ Term: 1 year, option to extend additional year
- “ Commitment to:
 - Required Qualifications
 - Evaluation Criteria
 - Supplier Diversity Plan
- “ Key dates:
 - April 11 – Responses due
 - May 10 – Preference announced
 - May 29 – Negotiations complete

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Limitations

- “ Information management
 - State owns all RFR-produced information & products
 - Services may impose other requirements
- “ Prohibition on contact with Massachusetts military base staff
- “ DOER seeks the services of a Respondent who will not have a financial interest in deliverables developed under this RFR
- “ Security & background checks

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Uncertainty

- “ Limited available information on current base conditions
- “ Background check process
- “ Impact of FY13 continuing resolution & sequestration
- “ Task 4: Number of priority projects for pre-engineering & procurement
- “ Unforeseen opportunities

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Pricing

- “ Bottom-up budgeting
- “ Include travel expenses
- “ Factor in knowledge of current conditions
- “ Task 4:
 - 3 major projects
 - 8 smaller responses
 - Separate line for pricing, on amended Appendix C

APPENDIX C PRICE PROPOSAL
The table below should be used to estimate price per site.

Site	Overall Price per Site	Staff	Hours per Site	Average Hourly Rate
Barnes Air National Guard Base, Westfield, MA				
Hanscom Air Force Base, Bedford, MA				
Westover Air Reserve Base, Chicopee, MA				
Natick Soldier Systems Center, Natick, MA				
Massachusetts Military Reservation, Cape Cod				
Fort Devens, Devens, MA				
Overall Grand Totals				

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Q & A

- ~ This webinar is being recorded
- ~ Webinar recording, presentation, and Q&A will be available at www.comm-pass.com