



Opportunities for Bringing about Organizational Change to Realize Agency Energy Sustainability Goals

GovEnergy 2010

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Premises

Acquisition, Technology and Logistics

- Behavioral change is a necessary part of the solution to energy security
- Military has unique institutional characteristics can be leveraged to more rapidly adopt an energy conscious culture
- Organizations and people are best motivated by
 - Purpose
 - Challenge
 - Mastery
- Methods and Opportunities



Success Requires that Energy is about Everybody

Acquisition, Technology and Logistics



- Installation design
- Building design & retrofit
- Environmental activities
 - Green Remediation
 - Solid Waste Disposal
 - Recycling
- Training operations
- Forward Operating Bases
- Procurement
- Acquisition



The Main Reasons for Energy Wastage

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• Indifference & malevolence? No!

- Scientific findings and experience show that most people use more energy than is necessary out of habit and lack of knowledge.

• Behavioral Solutions

- The development of behavior-related energy-saving involves raising awareness and changing habits.
 - Enduring user motivation requires patience and perseverance.
 - Behavior change leads to culture change.



Institutional Change

Acquisition, Technology and Logistics

- Long-term institutional change is brought about only if the organization is realigned to value the change that is desired
- DOTMLPF
 - Doctrine - Organization - **Training** - Material –
Logistics - Personnel - Facilities





Goals of Behavior Change

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- Individuals produce a large effect
- Foster an environment of innovation and adoption
 - Foster an environment of ownership & practice
 - Maximize benefits from new designs & equipment
 - Convince people of value stream





Institutional Change

Acquisition, Technology and Logistics

- Long-term institutional change is brought about only if the organization is realigned to value the change that is desired

How do you get military & civilian personnel to own and address energy sustainability?

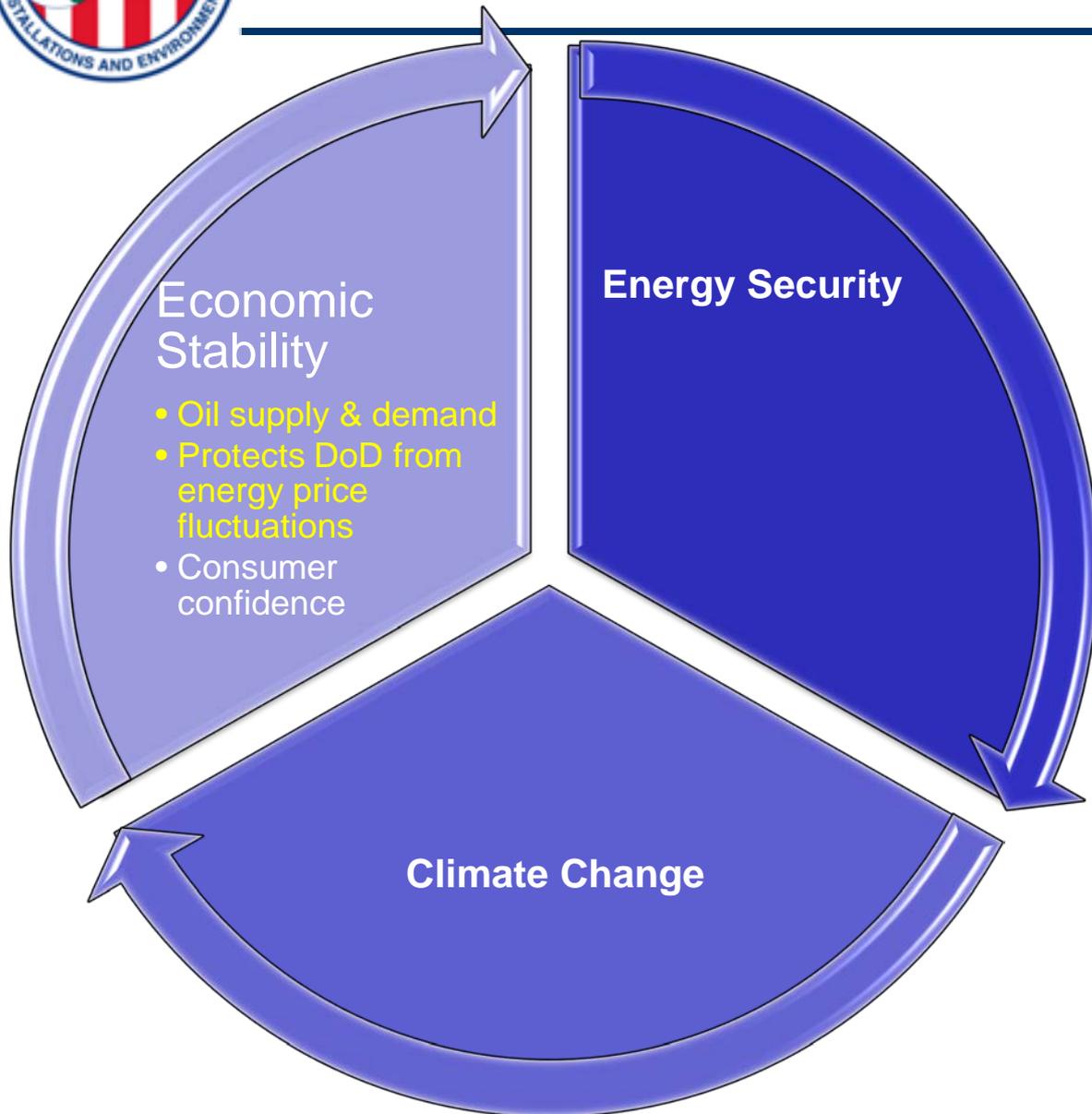
You make it about the mission!





Energy & National Security

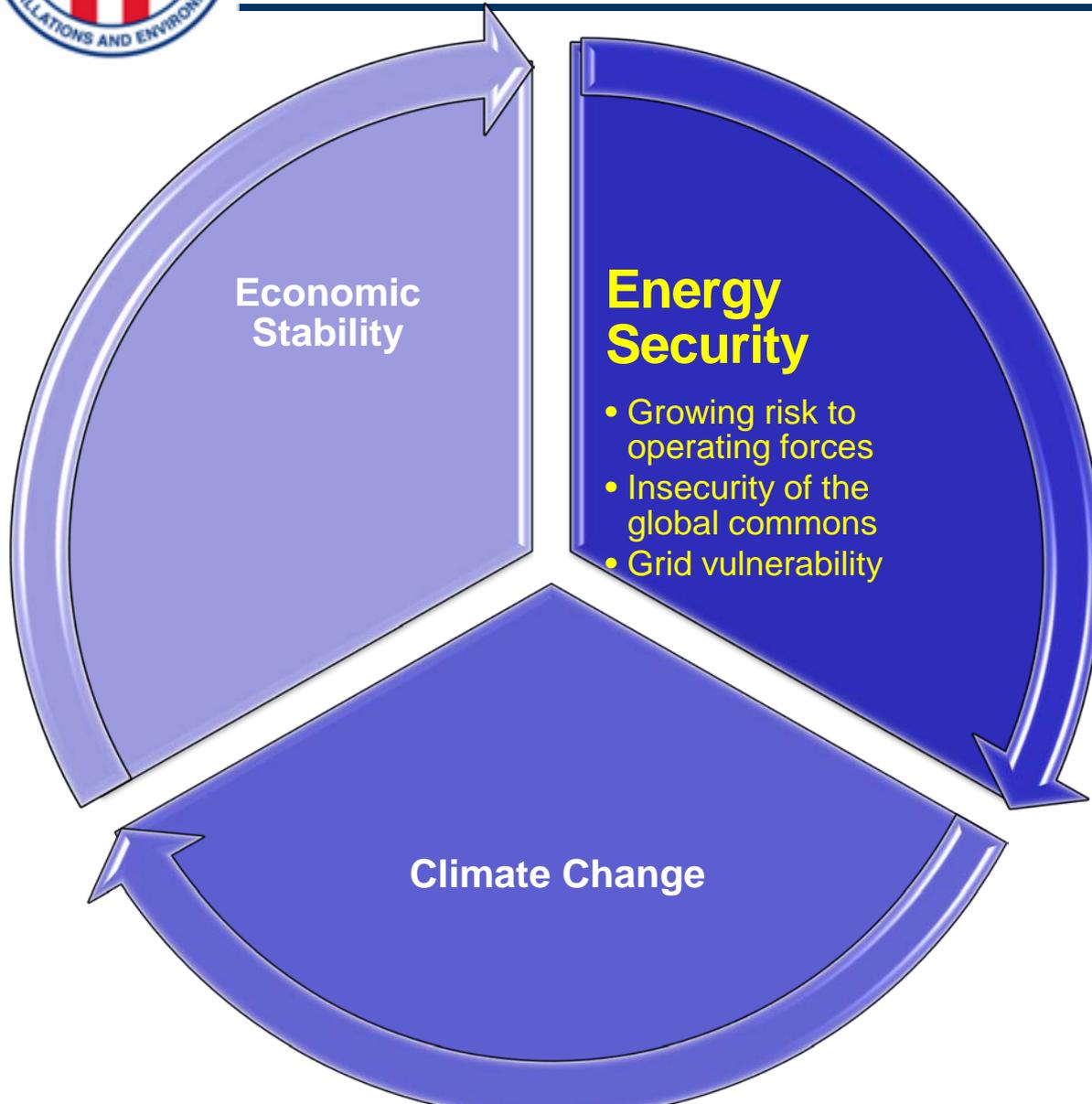
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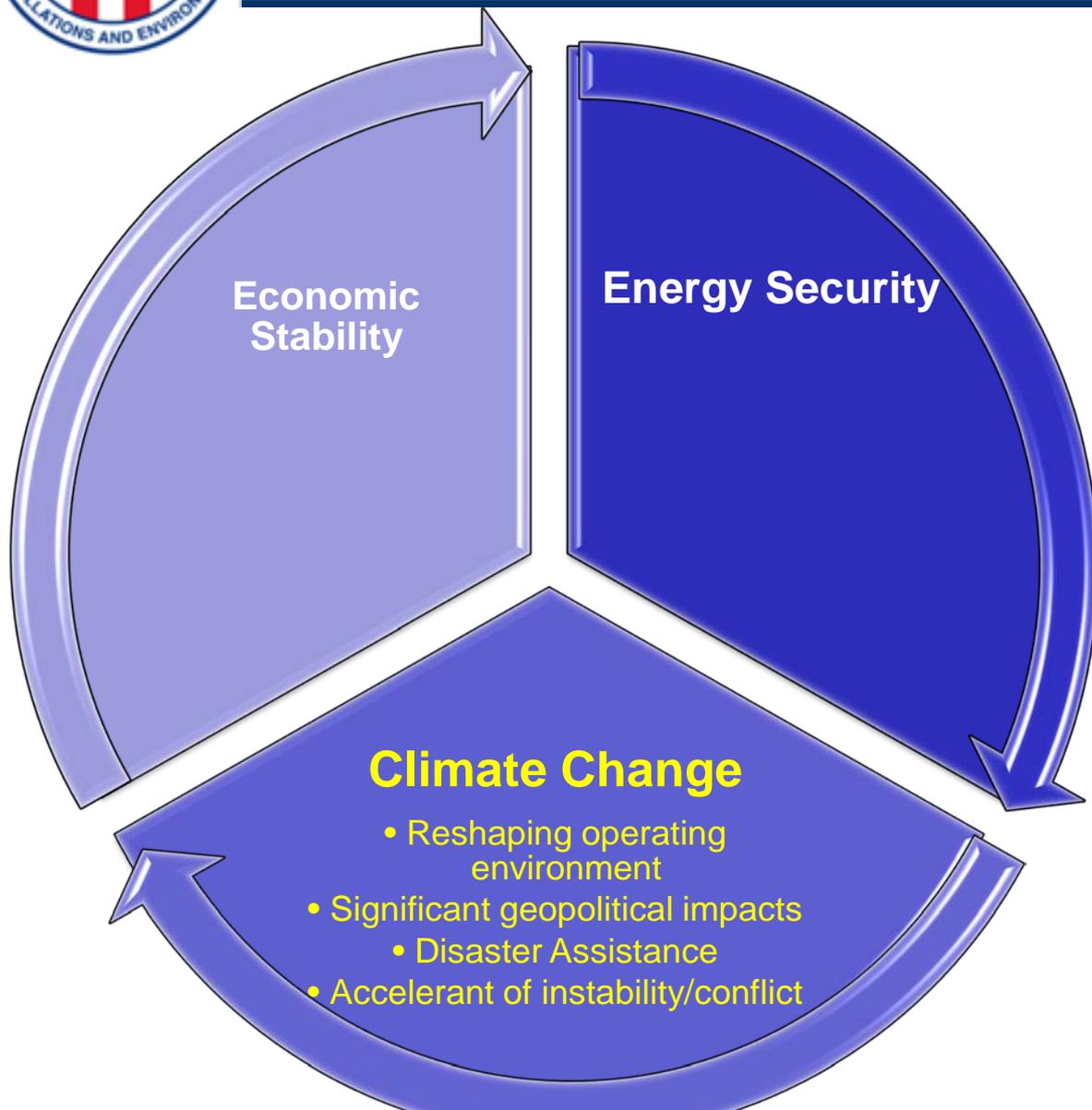
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Energy & National Security

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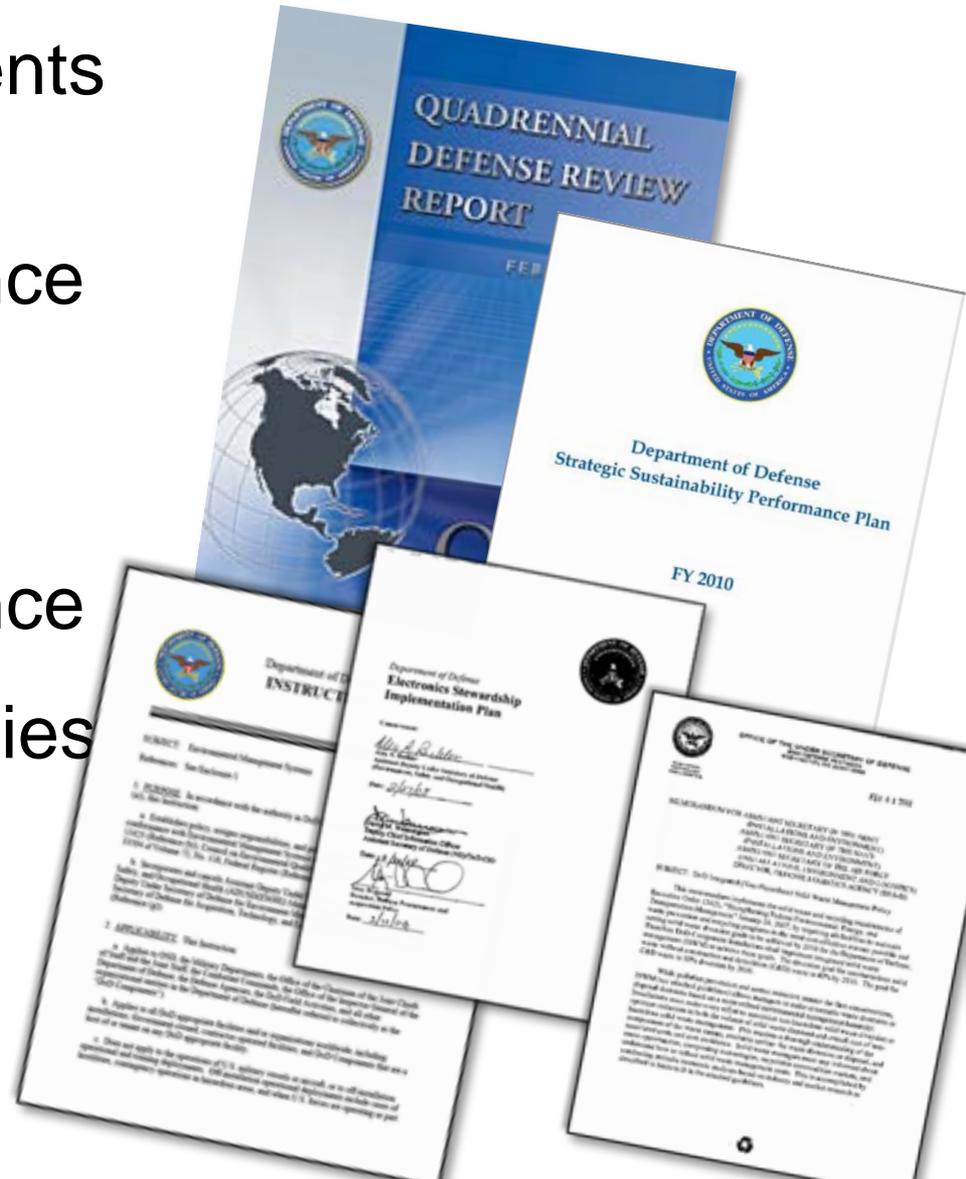




Doctrine: Set Clear Priorities

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- Policy/Planning Documents
- Agency Strategic Sustainability Performance Plan
 - Service specific plans
- Budget Planning Guidance
- Review & Reframe Policies



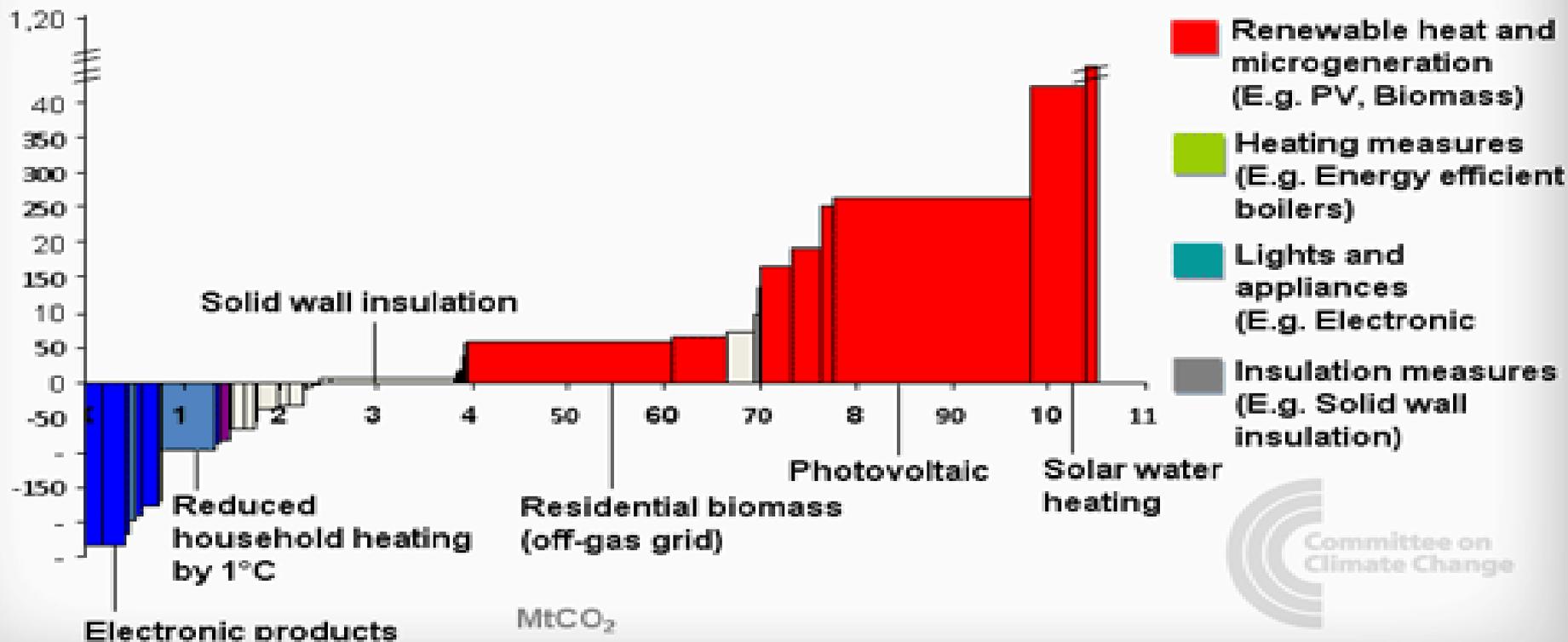


Set Clear Priorities

Acquisition, Technology and Logistics

- Target highest benefits with lowest costs
 - Conduct Marginal Analysis of Cost

Marginal Abatement Cost curve for the domestic sector

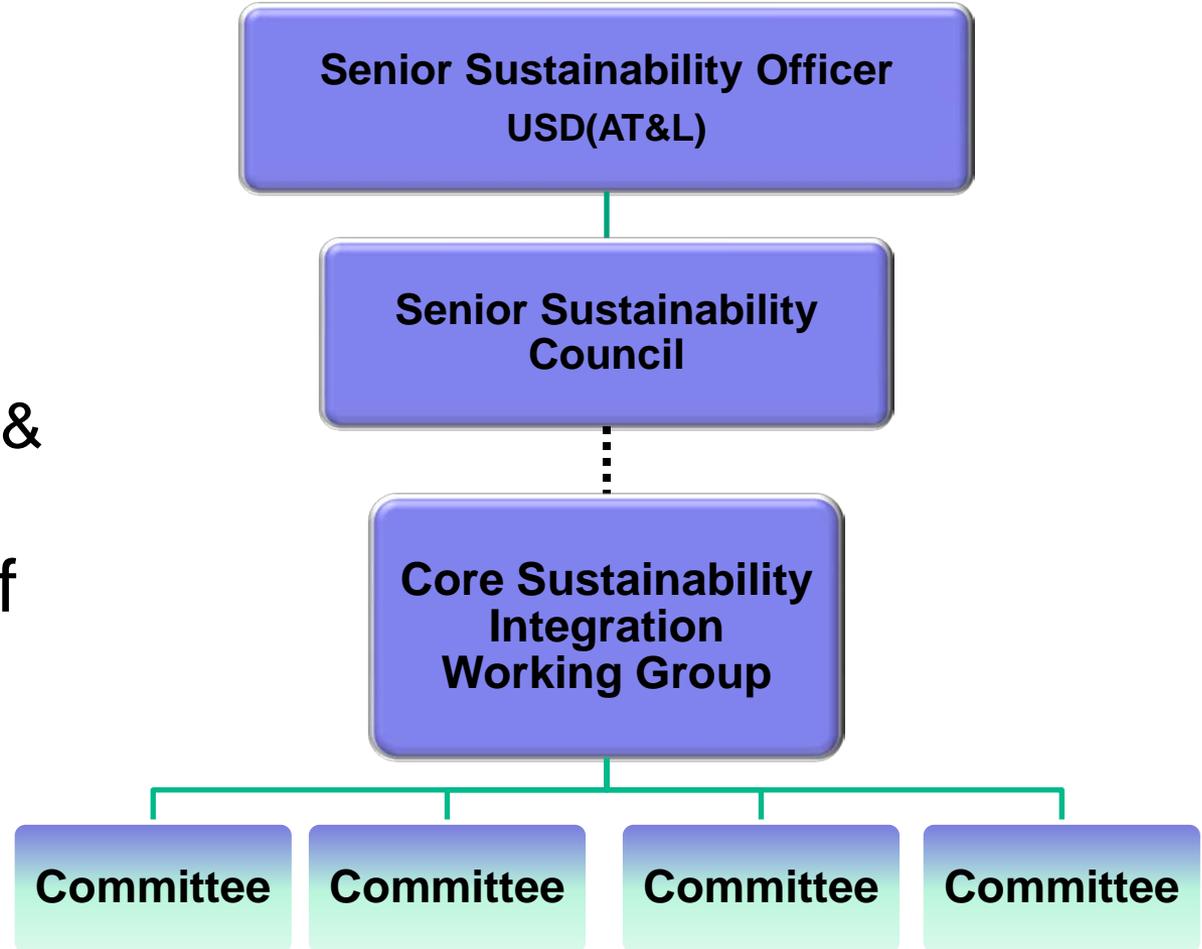




Organization

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- Create Governance Structures
 - Leadership accountability & cooperation
- Create Lines of Accountability
 - Performance accountability procedures





Show that Leadership is Serious

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- Provide incentives (create disincentives)
- Remove obstacles
- Consistency of leadership messages and actions





WDDD?

*What Did DoD Do?

Consistent Messages

By the year 2015, **we're going to cut in half fossil fuel use in our commercial fleet...** We're going to change the type of vehicles we buy and it's not that hard.... By 2016, **we're going to field a Carrier Strike Group that is all powered by alternative fuels. ... the planes taking off from the deck and the surface ships are all going to be burning alternate fuel.** And we're going to call it the Great Green Fleet; a hundred years after Teddy Roosevelt had the Great White Fleet.

*Secretary Mabus
Santa Barbara Navy League
October 22, 2009*



U.S. Marine Corps Maj. Gen. Richard Zilmer, Al-Anbar Commander noted the vulnerability of American supply lines to insurgent attack. He said **“Without...[renewable energy systems], personnel loss rates are likely to continue** at their current rate. Continued casualty accumulation exhibits potential to jeopardize mission success...”

*Defense News
August 2006*



The way we manage energy at our permanent installations is important for two key reasons. First, facilities energy represents a significant cost... This represents about 28% of the Department's total energy... Second, **installation energy management is key to mission assurance.** ...it is time for us to **adapt our approach to installation energy management from ...to one that is focused on long-term cost avoidance and mission assurance.**

*DUSD (I&E) Dorothy Robyn Testimony to HASC/Readiness
March 18, 2010*



Tactics

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- Develop & launch communication plan for internal “outreach”
 - Target key audiences
 - Installation Commanders
 - Trainers
 - Opinion leaders
- Walk your talk





Training and Mentoring

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- Create Communities of Expertise
 - Establish Tiger Teams
 - Experts for friendly audits
 - ID opportunities
 - Share best practices and new technologies
 - To reduce perceived risk
 - Nurture Networks of Energy Champions
 - Experts charged with capturing and sharing info
 - Could be called upon for specific trouble shooting
- Empower



Training & Mentoring & Accountability

Acquisition, Technology and Logistics

- Win their hearts & minds to gain support for new responsibilities
 - Purpose....challenge....mastery begets performance
- Establish performance expectations
 - Leaders
 - Commanders/Decisionmakers
 - Opinion Leaders
 - Trade & Specialties
 - Construction Designers
 - Operators
 - Maintenance Engineers
 - Procurement specialists
 - All Employees



Tactics: Use IT

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- To Ease Change: Provide info, tools, grow understanding and knowledge
 - Interactive websites
 - Informing & Mentoring
 - Gaming
- To Gauge Success: Goals posted, rate of progress demonstrated
 - Portals to ease info gathering & sharing
 - Preset taxonomy & templates
 - Ratings by users
 - Competition for positive recognition



Use Information Technology to Ease the Change & Gauge Success

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- Greening DoD webpage
- Defense Environmental Information Exchange
- Sustainability Portal (under development)



Visually Dull



Better...



Better Examples - DOE

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U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy

Energy Savers

Search Search Help More Search Options



Save Money and Energy at Home

Learn ways to save energy and use clean, renewable technologies at home, while driving, and at work.

Start with an energy assessment. Learn:

- Where you are losing energy
- How to conduct your own assessment
- How to hire a professional



Rebates for ENERGY STAR® Appliances

Save Money and Energy with a Home Energy Assessment

- Find out where your home is losing energy
- Receive an itemized list of potential upgrades
- Save hundreds of dollars per year on energy



1 2 3 4

Appliances & Electronics

- Buying Efficient Products
- Estimating Energy Use
- Turning Off Computers



Designing & Remodeling

- Passive Solar
- Whole-House Design
- Zero-Energy Homes
- Log Homes
- Manufactured Homes
- Earth-Sheltered Homes
- Financing an Efficient Home



Electricity

- Reducing Electricity Use
- Buying Clean Electricity
- Making Clean Electricity
- Reading Electric Meters



Heating & Cooling

- Selecting & Replacing Your System
- Cooling Systems
- Heating Systems
- Heat Pumps
- Thermostats, Ducts, & Meters



Insulation & Air Sealing

Landscaping

Join the Conversation on the Energy Savers Blog

How Do You Save Energy in the Summer?

June 17, 2010

Summertime Energy Savings

June 15, 2010

Energy Challenge Two: The WeatherizeDC Campaign

June 14, 2010

[Read more entries](#) [Subscribe to RSS feed](#)



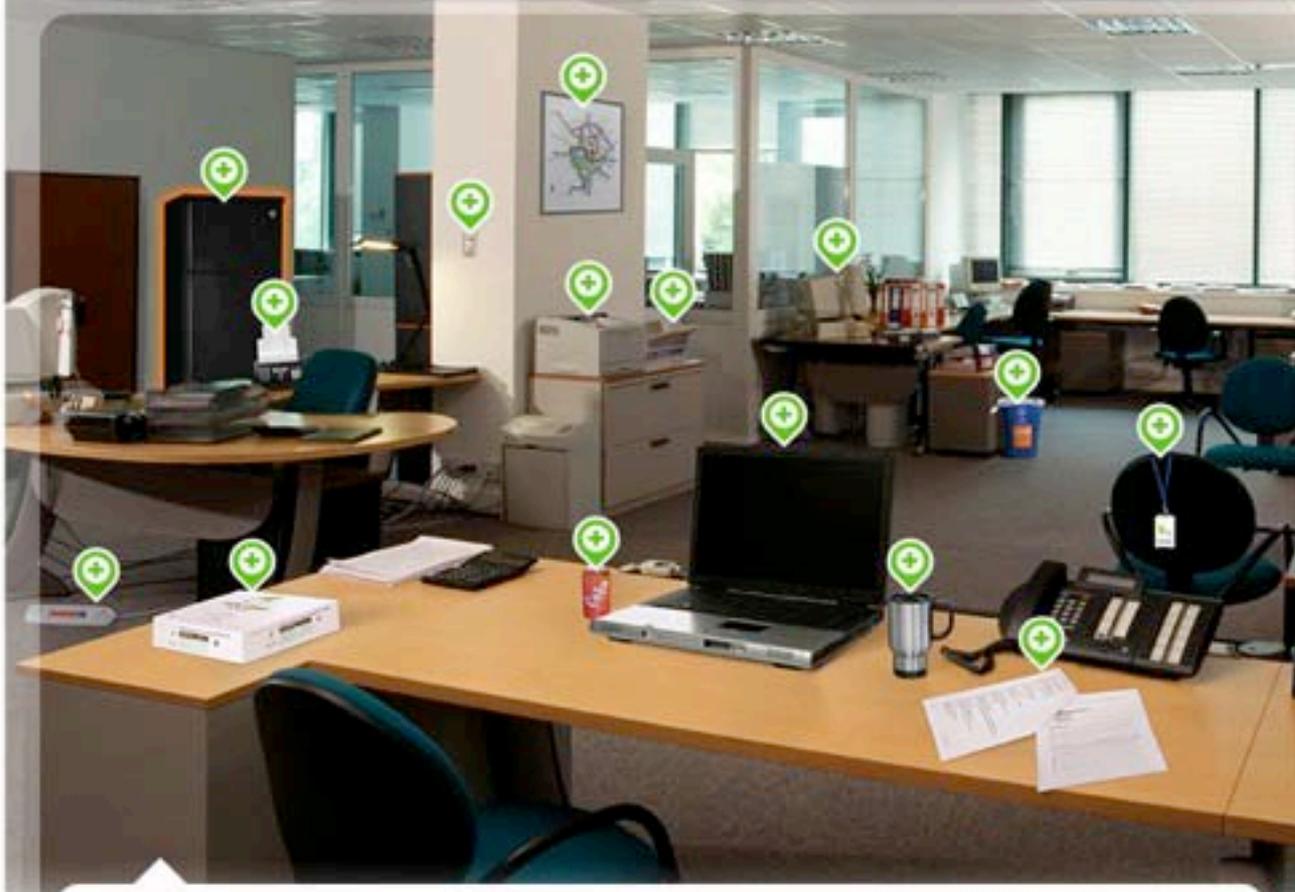
U.S. House of Representatives
My Green Office

Even Better!



Welcome, MGO Visitor | Office of: Albert Jackson | 2 Congress Street, Milford

Logout



[STRETCH ACTIONS LIST](#) [MY SCORECARD](#)

THINGS TO DO

Explore the office scene to find actions...

- Designate a District Office "Green Office" [SHOW](#)
- Recycle Paper (0) [SHOW](#)
- Recycle Plastic, Aluminum, and Glass (0) [SHOW](#)
- Light Switches & Occupancy Sensors (0) [SHOW](#)
- Computer Power Management Settings (0) [SHOW](#)
- Energy-Efficient Power Strips (0) [SHOW](#)
- EPEAT Desktop Computers (0) [SHOW](#)
- ENERGY STAR Printers and Copiers (0) [SHOW](#)
- Double-Sided Printing (0) [SHOW](#)
- Electronic Faxing [SHOW](#)
- ENERGY STAR Refrigerator (0) [SHOW](#)
- Coffee Mugs & Reusable Water Bottles (0) [SHOW](#)
- Recycled-Content Paper (0) [SHOW](#)
- Recycle Toner Cartridges [SHOW](#)
- Transportation Benefits [SHOW](#)

...AND 23 STRETCH ACTIONS

THINGS IN PROGRESS



THINGS WE'VE DONE

Totals for actions that have been taken...

- MA02 - Capitol-
- 2 Congress Street, Milford-
- 300 State Street, Springfield-

OUR OFFICE(S) IMPACT: TOTALS AND TARGETS...

A new level is reached when you save the target amount of electricity, landfill waste, carbon or money.

How much electricity have we saved?

Level One Savings: 00.00 kWh

00.00 kWh

... of 1,000 kWh



How much landfill waste have we saved?

Level One Savings: 00.00 Pounds

00.00 Pounds

... of 1,000 Pounds



How much carbon (CO2E) have we reduced?

Level One Savings: 00.00 Pounds

00.00 Pounds

... of 1,000 Pounds



How much money have we saved?

Level One Savings: 00.00 Dollars

00.00 Dollars

... of 100 Dollars

Calculates impacts

Bragging rights!

SHARE YOUR RESULTS

Recognition for high levels!

Scorecard Legend

- 1 Level = 1000 kWh of Electricity
- 1 Level = 1000 Pounds of Landfill Waste
- 1 Level = 1000 Pounds of Carbon (CO2E)
- 1 Level = 100 Dollars

Note: Scorecard information is for your office use only and is not publicly viewable



Marines' Green Gaming

Acquisition, Technology and Logistics

- Assessment games
- Awareness/skill building games
 - Haz waste classifier
- Simulations to understand mission impact
 - Player had to ensure compliance didn't drop below a certain level
 - To win, had to walk thru all facilities, check and know when and how to correct
- Lessons Learned
 - Players earned points and medals
 - Leaderboard created competition
 - Independent play occurred
 - Learners/Trainers reported higher competencies



German MoD: Behavior Mod Tactics

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- **mission^E**
 - Concept developed by the Energy Agency of North Rhine-Westphalia
 - For US audience

- **E** stands for **E**nergy, **E**fficiency, **E**missions, **E**nvironment, **E**very **E**mployee, **E**conomy

- Energy Aware User Behavior Modification
 - Clarification and insight
 - **No loss of convenience!**
 - Intrinsic and extrinsic motivation





Germany's "mission E"

Acquisition, Technology and Logistics

- Since October 2006, the campaign team of the "mission E" has carried out activities in seven different fields:
 - Intranet
 - Advertising
 - Local events on-site
 - Contests/competitions
 - Basic and sustainment training
 - Internal communication
 - External PR



German MoD Approach: Targetting Basic and Sustainment Training

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- **Developed “mission E” seminar modules for particular target groups**
 - Impulse-workshops
 - Annual meetings on decentralized user motivation activities
 - Multiplier instruction
 - Project-related and specialist energy-oriented instruction of project leaders for the campaign weeks
 - Basic training
 - Obligatory teaching module for basic service conscripts
 - Advanced training
 - One-day seminar on motivation-related topics for public administrators to become property managers



Contests Call Up the Competitive Spirit – and Get Everyone Thinking

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“mission E”



- 2007: Search for the oldest refrigerator
 - Prize: new energy efficient fridge
- 2008: Intranet energy quiz
 - Prize: one-week holiday for two
- 2009: Search for volunteers for the series of posters with testimonials
 - Prize: participation in a professional photo shoot and award of a \$600 voucher



Does User Motivation for Behavioral Change Work?

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Contribution of “mission E” to the total savings of 2.54 billion kWh achieved by the German Armed Forces from 2007-2009:

914 million kWh

\$ 85 million

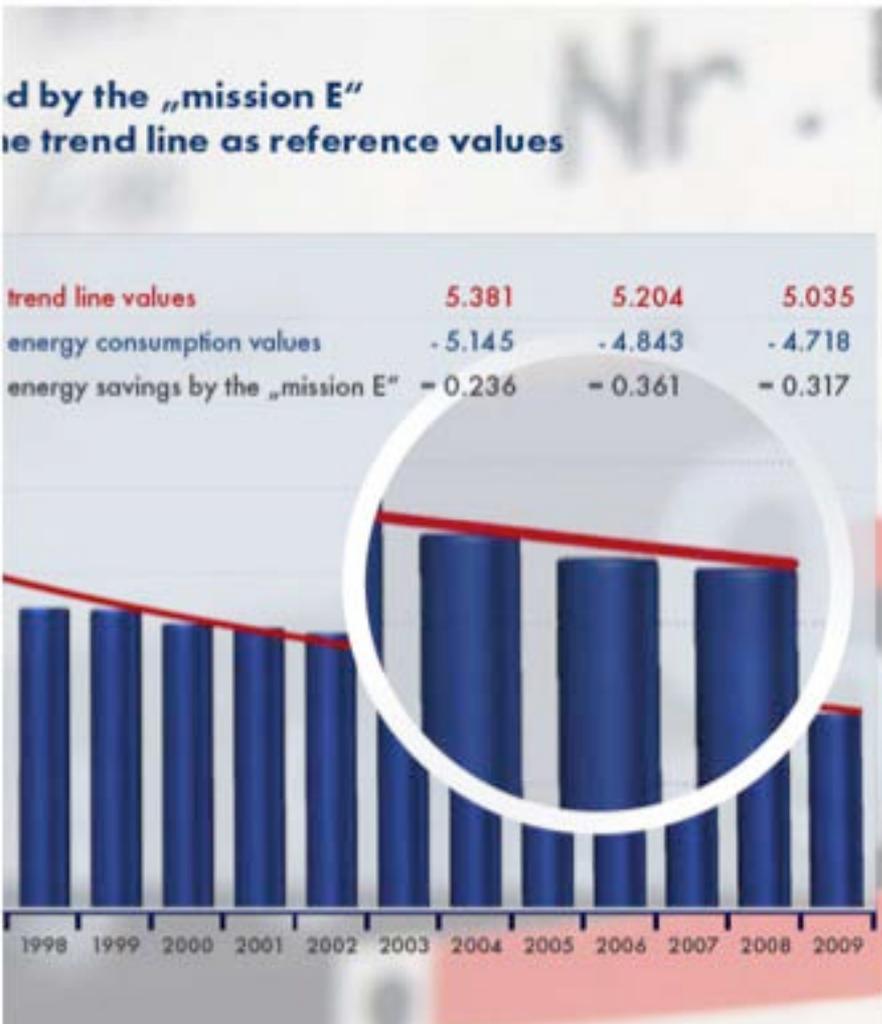
216,000 t CO₂

Input: \$ 540,000

(campaign budget plus invested labor of the campaign team)

Input-Output Relation: ~1:158

Resulting energy avoidance costs: (defining the relation between the financial input and the energy savings achieved) 0.05 Cent/kWh





Conclusion

Acquisition, Technology and Logistics

- ✓ Behavioral change is a necessary part of the solution to energy security
- ✓ Military has unique institutional characteristics can be leveraged to more rapidly adopt an energy conscious culture
- ✓ Purpose...challenge...mastery drive motivation
- ✓ Many methods and opportunities





Backup Slides



DoD – Master's of Training

Acquisition, Technology and Logistics

Military Training Opportunities

- Basic, Trade & other NCO training
- Officer Training (usually center of excellence based)
- Command & General Staff College
- Pre-Command Courses & Center of Excellence Training
- War College

Civilian Training Opportunities

- OPM training
- External Sources
- Trade training
- Career Path Development
 - Army Civilian Education System
 - Army Civilian University
 - Army Management Staff College
 - Army War College
 - Defense Acquisition University