



DoD Executive Agent

Office of the
Assistant Secretary
of the Army for
Installations, Energy and
Environment

Task 0722: DASA(E&S) Renewable Energy

Alan King
Director, Energy Partnerships
DASA(E&S)

Caroline Harrover,
NDCEE/CTC

The NDCEE is operated by:



Concurrent Technologies Corporation

Technology Transition – Supporting DoD Readiness, Sustainability, and the Warfighter

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE MAY 2011		2. REPORT TYPE		3. DATES COVERED 00-00-2011 to 00-00-2011	
4. TITLE AND SUBTITLE Task 0722: DASA(E&S) Renewable Energy				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National Defense Center for Energy and Environment (NDCEE), Concurrent Technologies Corporation, 100 CTC Drive, Johnstown, PA, 15904				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES Presented at the NDIA Environment, Energy Security & Sustainability (E2S2) Symposium & Exhibition held 9-12 May 2011 in New Orleans, LA. U.S. Government or Federal Rights License					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 17	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Presentation Outline

- **Background**
 - Energy Performance
 - Mandates

- **Army Energy Priorities**
 - Net Zero
 - Public/Private Authorities
 - Operational Energy

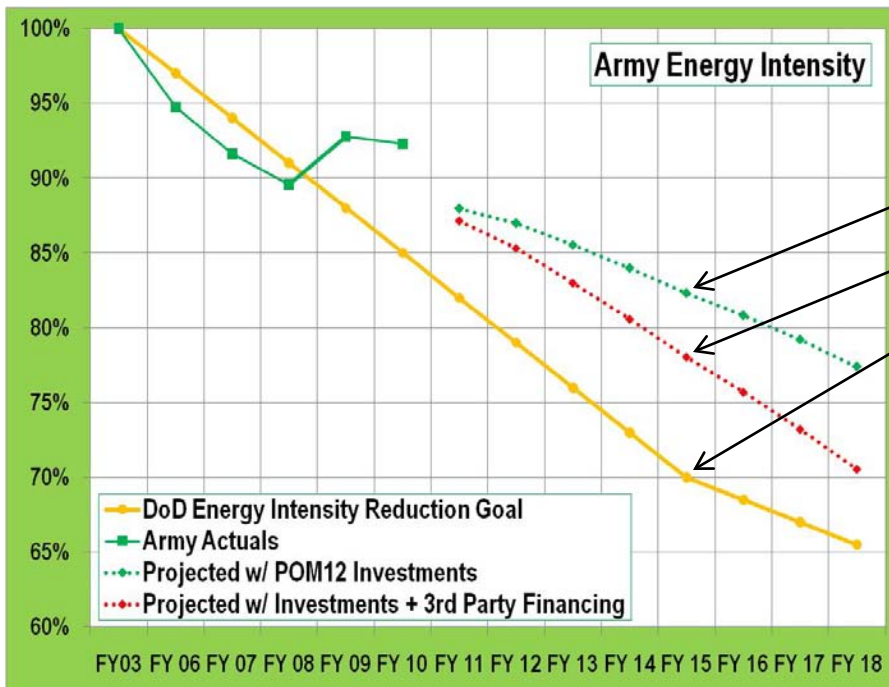
- **Attracting Investment**

- **OMB Scoring**

- **Path Forward**

Army Energy Performance

- FY 10 Energy Intensity -8% vs. -15% goal
- FY 10 Renewable Energy 2% vs. 5% goal
- Army is 21% of Federal total – drives overall score



Army FY 15 Performance vs. -30% goal

• W/O Private Sector 18% reduction

• With Private Sector 23% reduction

• With Private Sector >7.1B ??

Army Performance pulls down Federal Average

This will be noticed by WH, Congress, the Press and the Public

OSD Chart provided to OVP Jan 13

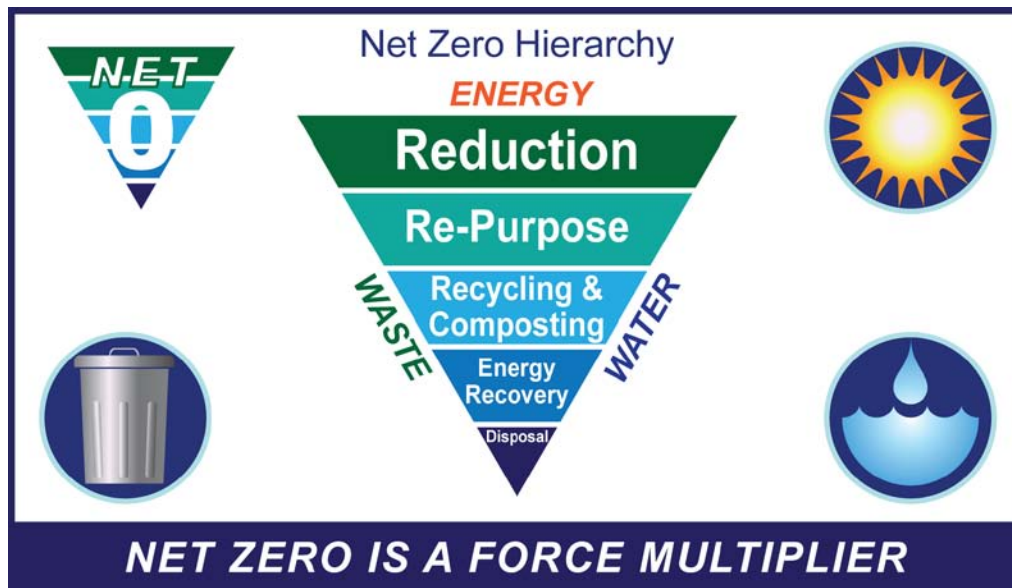
Aggressive Energy Mandates...

- Administration and Federal focus on energy reduction, efficiency and production
 - Energy Policy Act (EPAAct) of 2005
 - National Defense Authorization Act (NDAA)
- Mandates require \$13+B FY12-16 Army energy investment
 - 11 times the current Army annual requirement; more than any federal Agency
 - Primarily unfunded -- \$7.1B from private sector financing

Army Energy & Sustainability Priorities

- **Net Zero Installations - The Army goal is to manage our resources in a sustainable manner**
 - Our goal is to move toward energy security and sustainability with Net Zero Energy, Waste, and Water.
- **Leveraging Public/Private Authorities - The Army must become a better business partner to increase private sector investment and increase savings**
- **Reduce our Operational Energy in base camps through increased efficiency, demand management, and diversifying supply.**
 - Fuel and water comprise 70-80% of our resupply into the combat zone and there is 1 casualty for every 24 convoys.
 - Deploying solutions on our installations will help increased efficiency, demand management, and diversified supply to not only save money, but possibly save lives in theater.

Net Zero Hierarchy



- **A Net Zero ENERGY Installation** is an installation that produces as much energy on site as it uses, over the course of a year.
- **A Net Zero WATER Installation** limits the consumption of freshwater resources and returns water back to the same watershed so not to deplete the groundwater and surface water resources of that region in quantity or quality.
- **A Net Zero WASTE Installation** is an installation that reduces, reuses, and recovers waste streams, converting them to resource values with zero landfill.
- **A Net ZERO Installation** is one which applies an integrated approach to management of energy, water, and waste to capture and commercialize the resource value and/or enhance the ecological productivity of land, water, and air.

Leveraging Public/Private Authorities

Leveraging private sector investments in an era of constrained resources.

Authorities:

- Energy Savings Performance Contracts (ESPC) – Implementation and financing of energy efficiency projects out of energy cost savings
- Enhanced Use Lease (EUL) – Use of non-excess Army land exchanged for in-kind SRM projects
- Power Purchase Agreement (PPA) – Projects installed on Army installations at no cost, in exchange for long-term agreements to purchase renewable energy
- Utility Energy Service Contracts (UESC) – Service contract with utility provider

Other Authorities:

- Residential Community Initiative (RCI)
- Privatized Army Lodging (PAL)
- Utility Privatization (UP)

Army Operational Energy

Challenges

Fuel & water comprise
70-80% of ground
resupply by weight...

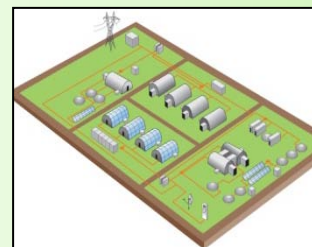
...and 1 casualty
occurs for 24 ground
resupply convoys in
OEF

Piloting Solutions in Permanent Installations

Increase Efficiency
Demand Management
Diversifying Supply

Potential Solutions

Smart and Green Energy (SAGE) for Base
Camps



- Smart Micro-grids
- Renewable Energy
- Purpose-built Shelters
- Efficient Generators
- Onsite Water

Portable
Solar
Power



Tactical Fuels
Manger
Defense



Portable Power
Capabilities



Army Energy & Sustainability Priorities

- **Increasing renewable energy on Army installations is a top priority**
 - Success dependent on large-scale renewable energy projects
- **Army has *valuable land assets* in prime renewable energy markets**
 - Fast-track the right projects to take advantage of the current, hot renewable energy market
- **Reduce our Operational Energy in base camps through increased efficiency, demand management, and diversifying supply**
- **Private financing for Army renewable energy projects is critical**
- **Must partner for success**

The Army Is COMPETING for Investment

Private investors have a choice. They will go where profits are highest and transaction costs lowest. The Army must use its size and scale to be a reliable partner, attract investment, and reduce capital costs.

To Do this the Army must:

- Be accountable for all 3rd party financing
- Conduct outreach to State governments, local communities
- Be empowered to approve acquisition approaches and initiate RFP's
- Streamline contract and award approval process
- Conduct independent economic and financial analysis
- Retain pre-award due diligence reviews
- Have project negotiation skills on par with private counterparts
- Provide centralized funding to support project development and facilitation

A Paradigm Shift for the Army

- Must be a reliable partner, attract investment, and reduce capital costs
 - Utilize existing public-private authorities
 - Must operate at market speed and scale
- Expediting development of a comprehensive Army-wide Renewable Energy plan, published by August 2011
 - Aggressive focus on large scale renewable projects
 - Leveraging best practices from similar programs
 - Single point-of-entry for private sector
 - Savings/returns for energy efficiency and security



Platform for Renewable Energy Investment

- Better, faster, more viable deals
 - Regulatory, market, land and mission compatibility analysis upfront
 - Streamlined, communicated process through Army
 - Existing projects – market ready enhancements
 - New pipeline of opportunities
- Outreach to industry and local communities
- Seek innovative solutions to optimize projects
- Investment to soften development risk
- Proactive policy, regulatory and legislative advocacy

Gold on the Horizon...

- Mutually beneficial deals
 - Government land and stability for industry financing
 - Participation in deals: shared risk – higher returns
 - Returns/savings applied to energy projects
 - Economic growth in the industry and local communities
- Aggressive schedule to meet mandates, \$7.1B in development projects by 2022
- Increased national energy security
- Three Army goals

What is Scoring?

- Measuring changes in government spending or receipts
- Measuring spending actions taken by:
 - Legislative Branch
 - Keeping track of legislation that affects spending or receipts
 - Holding Congress accountable for its power of the purse
 - Executive Branch
 - Measuring execution of Congressional appropriations (apportionment and accounting)
 - Holding Agencies accountable for spending actions
- What governs scoring?
 - OMB Circular A-11
 - Budget Enforcement Act (1990)
 - Gramm-Rudman-Hollings (1985)

Army Energy Scoring Do's and Don'ts

Allowable under OMB A-11	Not Allowable under OMB A-11
 Can provide ground lease underutilized real property / assets to developer (can be 50 years)	 Cannot link land agreement to PPA or ESC
 Must transfer ownership risks and costs to developer	 Cannot provide federal guarantee of financing of developer
 Ground lease “in-kind rent” can include provision of services or power	 Variable/contingent rent on ground lease could trigger capital lease on lease back
 Power must be secured through competition under “operating lease” guidelines	 Cannot have link between decision-making on acquisition agreement and contingent power purchase

The Way Ahead

Long Term Implementation Plan (10 years)

- Enterprise-wide approach
- Project prioritization
- Specific 10 year pipeline of projects
- Execution and closeout of projects
- Portfolio management
- Reinvestment strategy
- Program measurement & reporting
- On-going program refinement



DoD Executive Agent

Office of the
Assistant Secretary
of the Army
Installations, Energy and
Environment

www.ndcee.ctc.com

Points of Contact

- **NDCEE Technical Monitor**
Mr. Alan King
Director, Energy Partnerships, DASA(E&S)
Phone: 703-693-5124
Email: alan.king2@us.army.mil
- **CTC Project Manager**
Ms. Caroline Harrover
Phone: 703-310-5676
Email: harrovec@ctc.com

This work was funded through the Office of the Assistant Secretary of the Army Installations, Energy and Environment and conducted under contract W91ZLK-10-D-0005 Task 0722. The views, opinions, and/or findings contained in this paper are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision unless so designated by other official documentation.