ENERGY INITIATIVES TASK FORCE

Securing Army installations with *energy* that is *clean*, *reliable* and *affordable*

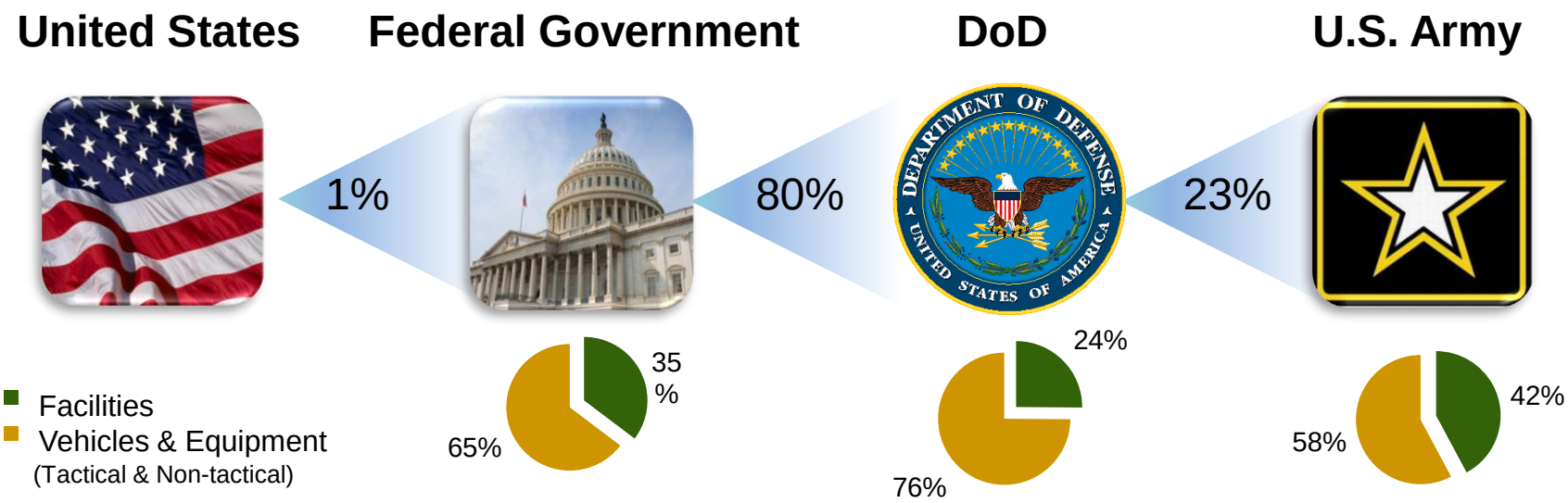
Asia Pacific Clean Energy Summit

Mr. Douglas Waters, Director of Project Execution Teams
Army Energy Initiatives Task Force
14 August 2012

Army Energy in Perspective

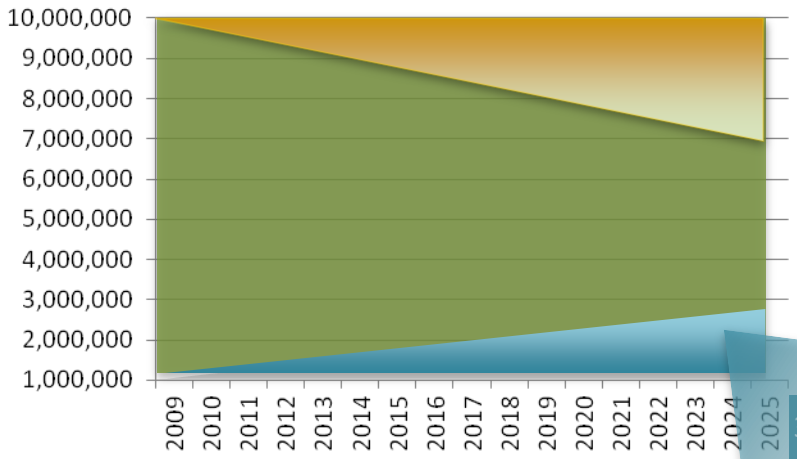
- The Army manages both Installation & Operational Energy requirements
- The Army is largest facility energy consumer in the Federal Government – $1.3B (FY11)
- The Army spent $3.7B on liquid fuel purchases in FY11, a more than $1B increase over FY10, in part due to an increase in the cost to deliver liquid fuel in Afghanistan

Fort Carson Photovoltaic Array



Army Energy Outlook

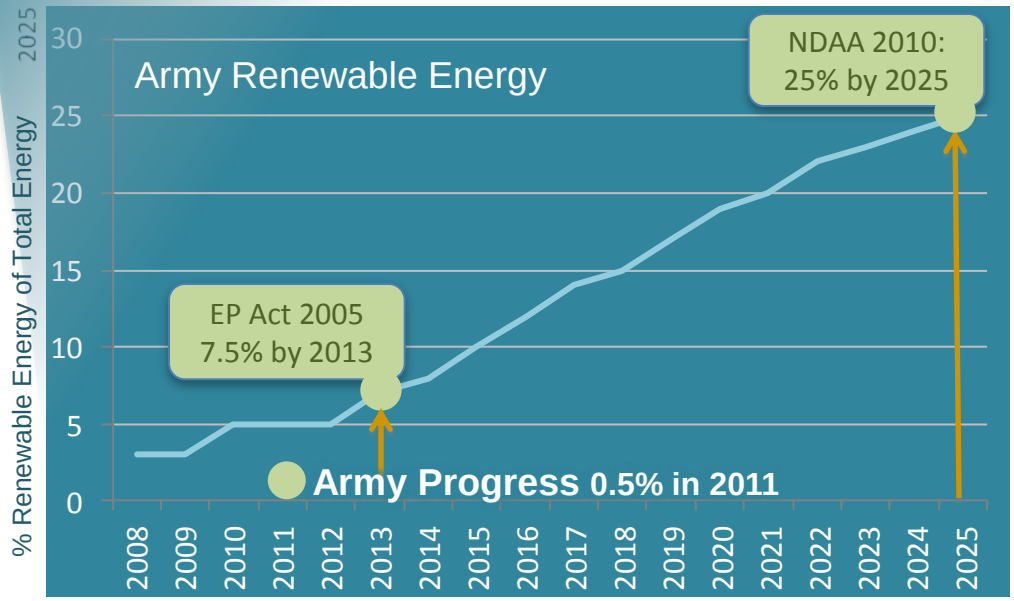
Path to 25% Renewable Energy by 2025 - *Notional*



Energy Efficiency Gains
funded by appropriated funding, ESPC, UESC

Traditional Energy

Renewable Energy
Requires leverage of private sector funding, EUL, PPA



Major Issues/Challenges

- Declining Budgets
- Need for Specialized Expertise
- Adoption of an Enterprise Strategy

*** 47,900 MWH of renewable generation in FY2011 from 168 different projects**

Office of the Deputy Assistant Secretary of the Army for Energy and Sustainability

Energy and Sustainability Mission:

Provide Strategic Leadership, Policy Guidance, Program Oversight and Outreach for Energy and Sustainability throughout the Army Enterprise to Enhance Current Installation and Operational Capabilities, Safeguard Resources and Preserve Future Options

Office Structure

The Office of the Deputy Assistant Secretary of the Army for Energy and Sustainability is broken down into four categories

- **Operational Energy**
- **Installation Energy**
- **Sustainability**
- **Energy Initiatives Task Force**

Army Energy Program

- **Change the Culture: Every Soldier a Power Manager**
  - Senior Energy and Sustainability Council (SESC)/Senior Energy Executive (SEE)
  - Energy and Sustainability must be a consideration in all Army activities
  - System wide approach for designing base camps to capture efficiencies

- **Drive Efficiency Across the Enterprise**
  - Leverage public private financing to accelerate efficiency projects
  - Implement technologies to significantly reduce energy footprint in the field and on installations
- **Build Resilience through Renewable/Alternative Energy**
  - Diversify sources of energy to allow for continued operations during energy disruptions
  - Attract private investment to develop large scale renewable energy projects
  - Provide flexibility and resiliency by developing alternatives and adaptable capabilities

- **Science and Technology**
  - Army's future efforts depend on Science and Technology investments

Army Power and Energy

BASING

Installation

Contingency

Energy Initiatives Task Force

SOLDIER

VEHICLES

OPERATIONAL ENERGY

NET ZERO STRATEGY

"Grand Challenges"

- Give soldiers and leaders capability to manage energy status, resources, performance
- Significantly reduce energy footprint
- Provide flexibility and resiliency by developing alternatives and adaptable capabilities

Power and Energy Strategy White Paper, Army Capabilities Integration Center/Research, Development and Engineering Command /Deputy Chief of Staff, G-4, US Army, 1 April 2010

Facilities Energy

Energy Reductions

- Army Facilities Energy investments are producing results
- Since FY03 the Army has reduced its energy consumption by 13.1% while total population on its installations has increased 20%

High Performance Building Standards

- Implemented the highest building standards in the Federal Government, ASHRAE 189.1
- Building Energy Audits

LEED Gold Brigade Combat Team headquarters, Fort Carson, CO

Third Party Financing

- Army has most robust Energy Savings Performance Contract (ESPC) program in entire Federal government.
- Expects to execute $800 million ESPC/UESCs in 2012 and 2013.

ENERGY INITIATIVES TASK FORCE

Non-Tactical Vehicle Fleet

- Actively managing fleet to Reduce size and improve efficiency
- 8% reduction in fuel use in FY11

Energy Initiatives Task Force and Net Zero Initiative

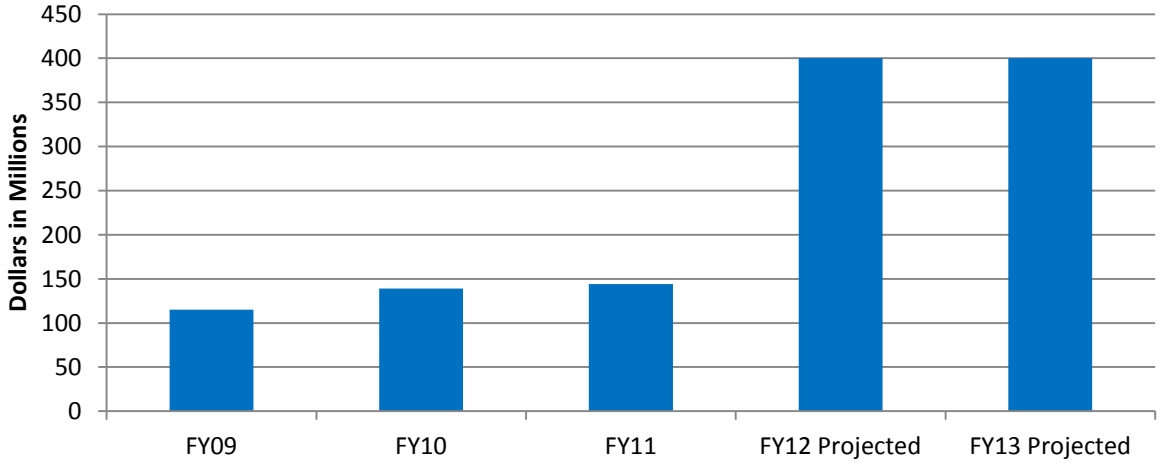
- EITF – Renewable Energy Projects >10MW
- Net Zero – Identified 17 pilot installations

Third Party Financing Strategies

Energy Savings Performance Contracts (ESPC) and Utilities Energy Services Contracts (UESC)

- Army has most robust ESPC program in entire Federal government and has reduced process time to 14 months.
- The Army has secured more than $1.5B in ESPC and UESC investment = cost avoidance to the Army of $148 million and energy savings of 7.986 trillion British thermal units (Btu).
- More ESPC's were awarded in Q1 of FY12 ($93M) than in all of FY11 ($74M).
- Expects to execute $800 million ESPC/UESCs in 2012 and 2013.

Value of ESPCs and UESCs Awarded

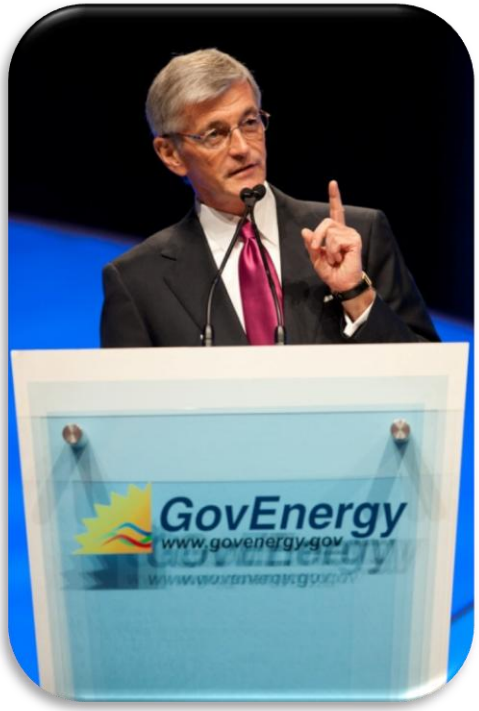


High Efficient Boilers
Picatinny Arsenal, NJ

Energy Initiatives Task Force

Energy Initiatives Task Force (EITF) established by the Secretary of the Army on September 15, 2011.

EITF serves as the central management office to implement **cost-effective, large-scale,** renewable energy projects on Army installations, leveraging private sector financing.



Features:
Large-scale renewable energy projects

- Greater than 10MW
- Will coordinate with installations for 1-10MW opportunities
- Will use land-use and third-party financing authorities: EUL, easement, ESPC, PPA and UESC

EITF Organization

Executive Director

John Lushetsky

Heidi Hansen
Office of General Counsel

Planning Division

Kathleen Ahsing, Director
Ned Shepherd
LTC Kevin Lovell

Execution Division

Alan King, Director
Douglas Waters
Erich Kurre

Outreach Division

Alan King, Interim Director

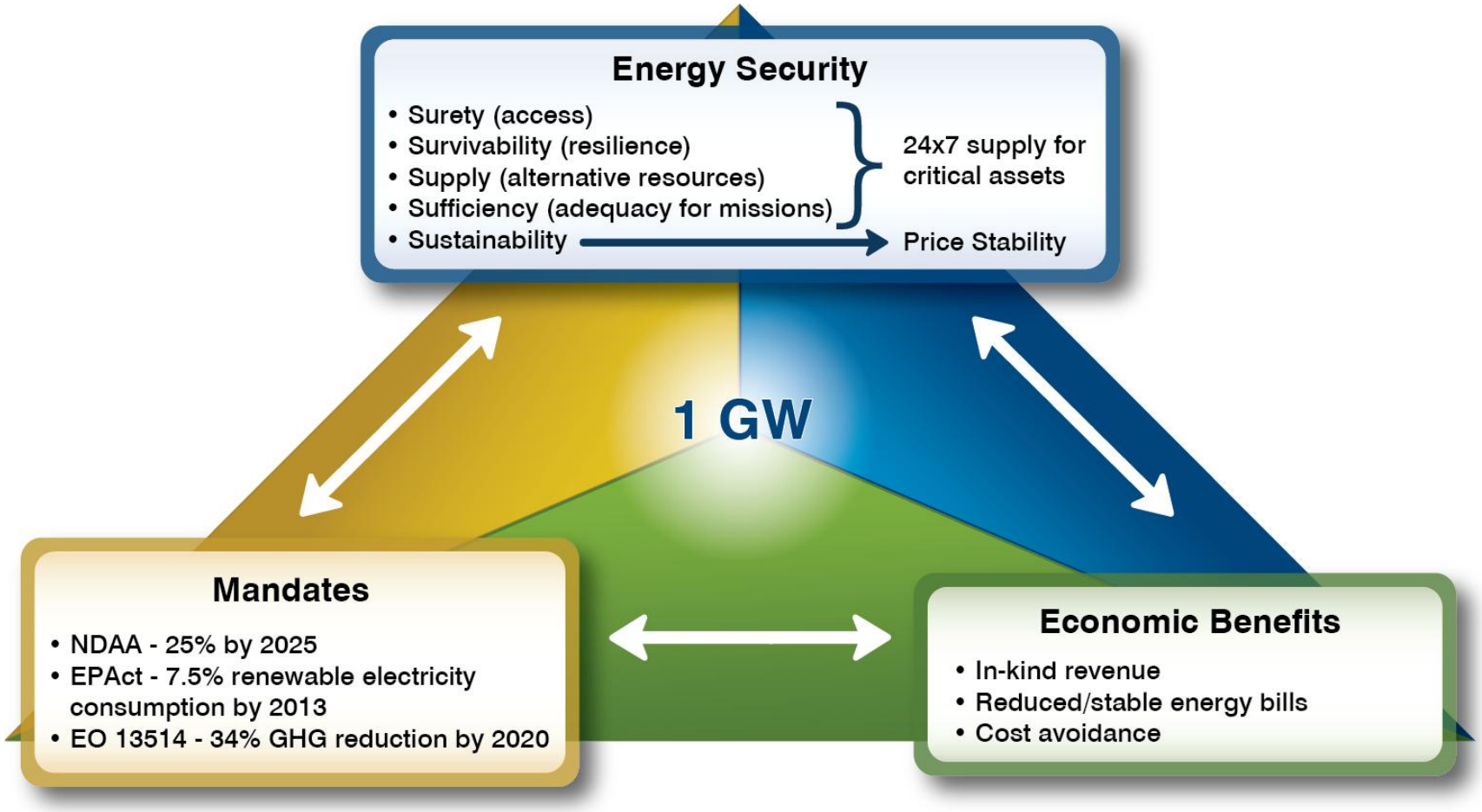
Partnerships

National Renewable Energy Lab
U.S. Army Corp of Engineers
Defense Logistical Command
Department of Energy
Pacific Northwest National Lab
Savannah River National Laboratory
Department of Air Force
Department of Interior
Department of Navy

Assistant Secretary of the Army (Installations, Energy & Environment)

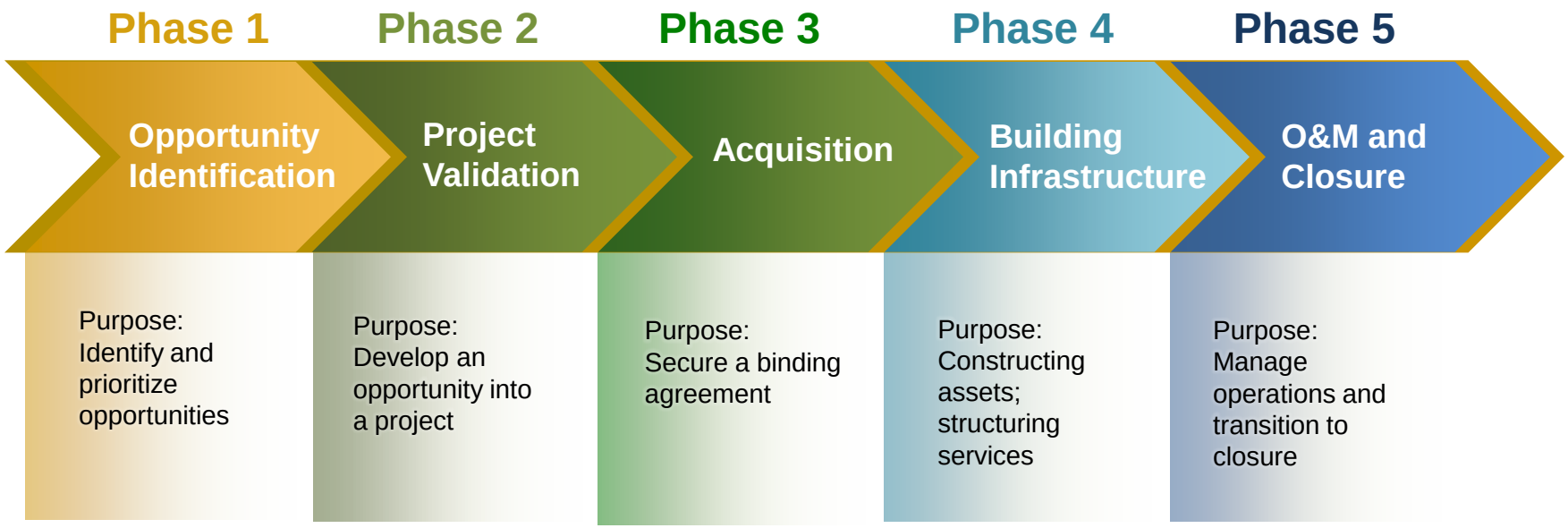
Balanced Enterprise Approach

EITF seeks to create a balanced pipeline of opportunities that will serve three driving principles



EITF Business Process

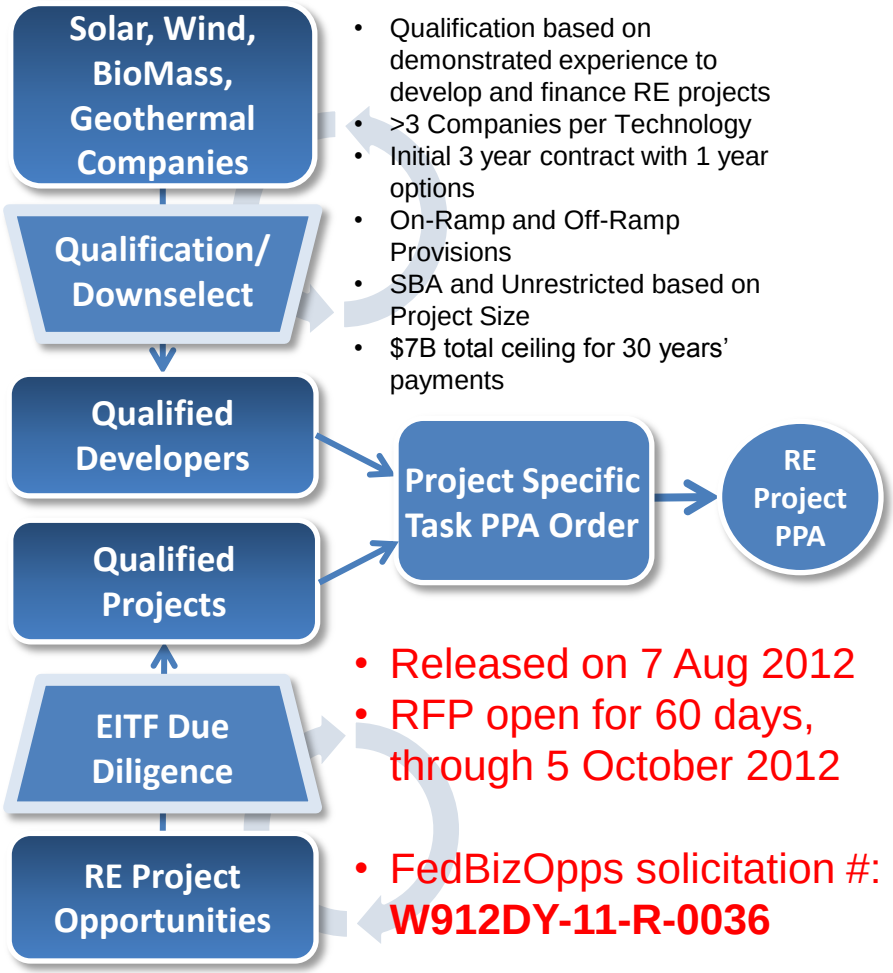
The EITF is producing a process for developing large-scale renewable energy projects that is clear, consistent and transparent. This process will be described in a ***Renewable Energy Project Development Guide*** that will detail the five phases of project development.



Acquisition Strategies

- EITF is utilizing a multi-pronged acquisition strategy that can provide required flexibility beyond the Task Force term
- We expect to utilize multiple contracting offices, potentially including the Army Corps of Engineers and Defense Logistics Agency, as well as DOE power marketing authorities (WAPA, BPA, TVA).
- EITF will leverage a Multi-Award Task Award Contract (MATOC) for PPAs that was released through USACE-Huntsville on 7 Aug 12

Multi-Award Task Order Contract (MATOC)



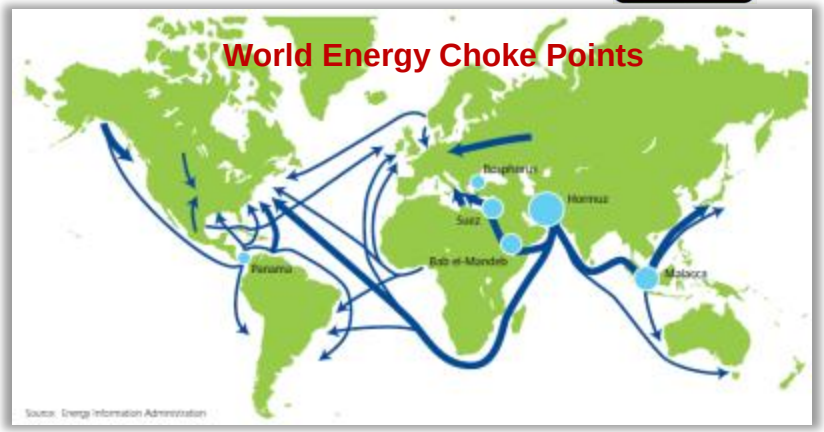
Net Zero Hierarchy

- **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 solid waste to landfill.
- **A Net ZERO INSTALLATION** 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.

Operational Energy Hierarchy

1. Strategic:

- Petroleum resources increasingly concentrated outside US sphere of influence
- Energy logistics limitations constrain National Defense options



2. Operational:

- 70-80% of resupply volume is fuel and water, limits sustainment alternatives
- Fully Burdened Cost of Fuel ranges from $3.95 to as high as $56/gal in Afghanistan.

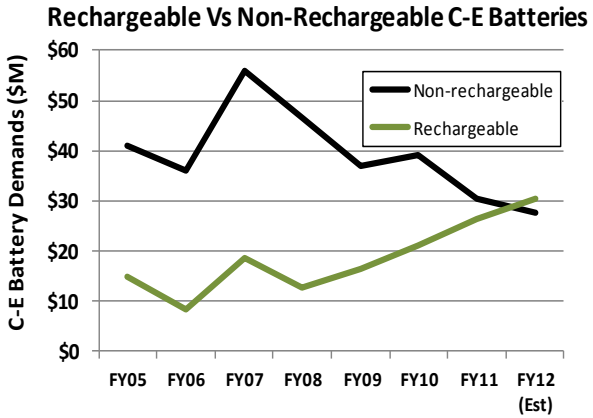
3. Tactical:

- Energy drives key operational capabilities such as maneuver, awareness, communication, etc.
- One Soldier 72 hours: 7 types, 70 batteries, 16 lb
- Dismounted platoon for 72 hours: >400 lbs of batteries

Soldier Power: Extend Range, Reduce Load

The 1/82nd & 173rd Brigade Combat Teams deploying with energy technologies to extend dismounted Soldiers endurance & range

- Equipped with advanced power capabilities including power management devices, fuel cells, & renewable energy alternatives to reduce load the volume & weight
- Builds on previous deployment of the 1-16th Infantry Battalion



- **Rechargeable Batteries:**
  - One Soldier 72 hours: 70 batteries, 7 types, 16 lbs
  - Dismounted platoon for 72 hours: >400 lbs of batteries
  - Army shifting from non-rechargeable to rechargeable batteries
  - FY12: estimate 52% of spending for Communications-Electronics rechargeables compared to 26% in FY05

Innovation:
The Key to our Energy Security

The Army is all about Soldiers. It's not about equipment or things; we are about people. America's Army is in a huge transition which calls for us to think and lead in new ways.

– Army Chief of Staff GEN Odierno

First and Foremost Army Leaders are Innovators.

The Strength of our Nation is our Army.

The Strength of our Army is our Soldiers.

The Strength of our Soldiers is their Families.

ARMY STRONG!


ARMY STRONG