



Energy Savings Performance Contracting (ESPC)

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ESPC Overview

- Definition and Need
- Program Description
- Questions and Answers





ESPC – Definition and Need

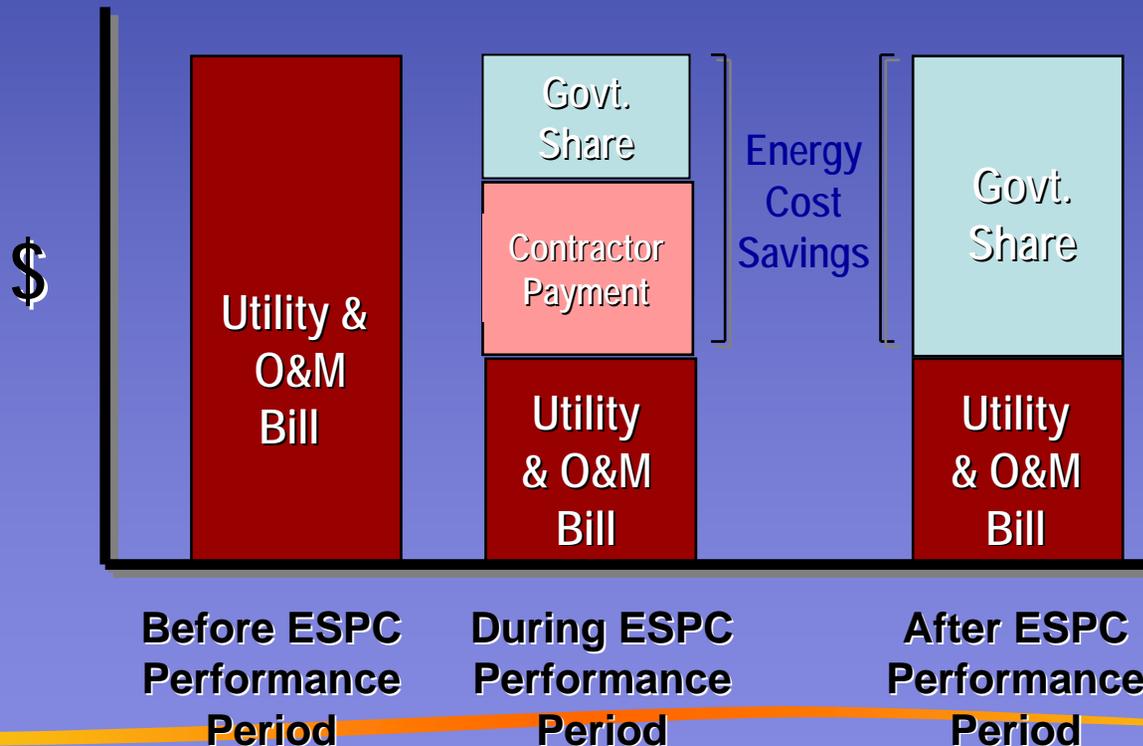
Definition: A contracting method in which the contractor provides capital to facilitate energy savings projects and maintains them in exchange for a portion of the energy savings generated





ESPC – Definition and Need

How ESPC Works:





ESPC – Definition and Need

Executive Order 13423 Jan 24, 2007

- 30% Reduction of Building BTU/Sq Ft by end of FY15 relative to FY03 Baseline.
- Section VI of Instructions for Implementing EO 13423: Agencies shall maximize use of available alternative financing mechanisms, including ESPC.



EO 13423 Jan 2007

- Reduce Building Energy Intensity (BTU/Sq Ft) 30% by end of FY15
- Reduce Water Consumption by 2% Annually thru FY15
- Renewable Power – At least 50% of current required renewable power must come from NEW renewable resources
- New renewable resources defined as in service after Jan 01, 1999



Renewable Power

EPAct05 Requirements for Renewable Power:

- 3% FY07 – FY09
- 5% FY10 – FY12
- 7.5% FY13 - each year thereafter



EO 13423 Jan 2007

Renewable Power Options include the following:

- Solar
- Wind
- Biomass
- Landfill Gas
- Ocean – 4 Categories



EO 13423 Jan 2007

Renewable **Ocean Power** Includes the following:

- Tidal
- Wave
- Current
- Thermal



EO 13423 Jan 2007

Other Renewable Power Options:

- Geothermal
- Municipal Solid Waste
- New Hydroelectric Generation Capacity
 - Increased efficiency
 - Additions of new capacity



Energy Savings Validation

- **Measurement & Verification (M&V) Process**
 1. Develop M&V Plan
 2. Determine Baseline
 3. Verify Savings
 4. Conduct Periodic Audit & Reconciliation



Energy Savings Verification

Develop M&V Plan

- Four M&V Approach Options
- A: Partially Measured Retrofit Isolation
 - Constant Load (lighting, electric motor replacements)
 - Small Projects
 - Inexpensive
 - Relies heavily on stipulation
 - Fast Track



Energy Savings Verification

- **B: Retrofit Isolation**
 - Uses metered data
 - Variable Load (Chillers, AHU's, boilers)
 - Large Projects
 - Time available for Baseline Measurement
 - Expensive
 - Accurate



Energy Savings Verification

- **C: Whole Building**

- Compares current utility metered data with historical data
- Multiple ECM's within metered bldg or group
- Fast track projects
- Fuel Switching projects
- Inexpensive
- Utility Data may not be available
- Can be skewed by diversity or independent variables such as weather



Energy Savings Verification

- **D: Calibrated Simulation**

- Computerized simulation of bldg systems or whole bldg to determine baseline and savings
- Simulation model calibrated with historic metered data or established benchmarks
- Large Projects
- Expensive
- Projects with anticipated future baseline adjustments



Energy Savings Validation

- **D: Calibrated Simulation cont.**
 - Sophisticated Stipulation
 - Challenging to Review



Energy Savings Verification

- **Determine Baseline**

- Starting Point
- Identifies how current bldg energy is used
- Must have appropriate Baseline for project to succeed
- Considers variables such as Energy Unit Cost, Weather, & Mission



Energy Savings Verification

- **Verify Savings**
 - Consistency
 - Energy Cost Measure performance
 - Verification Process
 - Verification Period



Energy Savings Verification

- **Periodic Audit & Reconciliation**

- National Energy Policy Act requires annual energy audit
- Audit typically performed by Contractor
- Contractor submits measurement and performance data in the M&V Report to Government.
- M&V Report describes any changed conditions



Energy Savings Verification

- **Periodic Audit & Reconciliation**

- Periodic audit usually done on an annual basis for entire contract term
- Audit may identify corrective action required by the Contractor and/or the Government
- Audit can include more than just energy savings
- Reconciliation may require change in parameters or recalculation of savings



Energy Savings Verification

- **Periodic Audit & Reconciliation**

- When Reconciliation may not be possible under Task Order Contract then -

1. Task Order modified if economically viable
2. Task Order Totally or Partially Terminated for Convenience by Govt



ESPC – Definition and Need

Why Energy Saving Performance Contracting ?

- Declining budget for installation of state-of-the art, energy efficient equipment and the replacement of failed and failing systems
- Fewer maintenance personnel
- Preventative Maintenance no longer cost effective





ESPC – Program Description

Eligibility Requirements (to use DOD/DOE contracts)

- You must be
 - A federal agency with government owned facilities
 - No leased facilities
 - Located within a DOE or DOD region, or international federal facility (DOE tech specific)
 - Must include an ACSIM certified Project Facilitator (PF).



ESPC – Program Description

- Over 19 years of experience in business
- ESPC team in one building - produces synergistic results for customers
- Review price and technical proposals
- Consult on all aspect of the proposals (e.g. Measurement and verification, contractual and financial issues, and specific technologies an engineering issues, payment phase)
- Ability to partner with Corps Districts national and international to leverage customer support.
- Over **\$400 Million** in ESPC awards (investment) and over **\$118 Million** in avoided costs to date



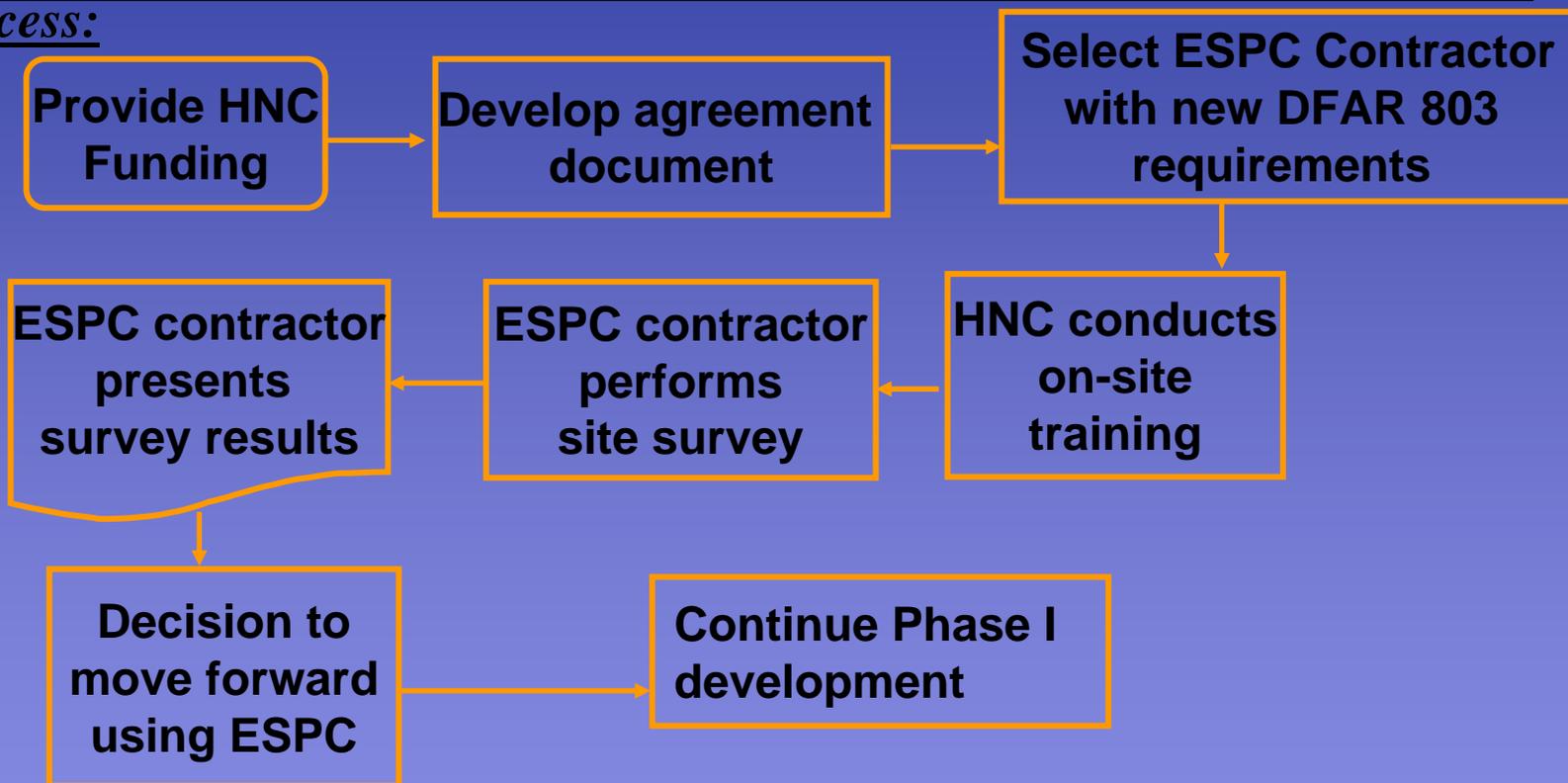
ESPC – Program Description

- **Corps of Engineer’s cost structure:**
 - In-House costs are 100% cost reimbursable
 - In-House funds required are based on the complexity of the project
 - Full “turn key” support (technical, legal, contracting, project management)
 - Contractors provide an estimate of their investment by project



ESPC – Program Description

Startup Process:





ESPC – Program Description

Contractor Selection - DFAR 803

- **Customer submits customer survey with request for HNC's services**
- **ESCOs will compete to implement ECSMs**
- **Contractors provided the following info:**
 - **Utility Rates for the site**
 - **Types of projects site is interested in**
 - **General Installation Data**
 - **Building types and locations**



ESPC – Program Description

Contractor Selection - DFAR 803

- **Contractors develop an oral/written presentation on potential ECSMs.**
- **Evaluation factors**
 - **Cost**
 - **Experience**
 - **Past Performance**
- **Contractor selection is based on “Best Value”.**



ESPC – Program Description

You Can Choose

- 1) Current Utility Bill & Old Equipment**
- 2) Current Utility Bill & New Equipment**
- 3) Current Utility Bill & New Equipment & Contractor Provided Maintenance**



ESPC – Program Description

Resource Efficiency Managers (REM):

- REM is typically full-time on site independent contract professional who identifies various functions to reduce utility costs by improving the efficiency of available resources.
- ACSIM-FDF pays first year's salary
- Position based on ability to reduce utility cost at least equal to salary after first year
- A nominal annual cost range is \$100K - \$200K, depending on the qualification & experience of the on-site REM, plus the level of additional technical support desire.
- Currently, have REM contracts at MOTSU and Fort Wainwright & are developing ID/IQ.



EEAP – Program Description

Energy Engineering Analysis Program

- Identify critical energy inefficiencies at Army installations through surveys using subject matter experts.
- Develop installation-wide energy model using DOE's Facility Energy Decision System.
- Identify projects with the potential to reduce an installation's energy usage and operational costs.
- Provide cost effective best fit energy solutions.
- Streamline fielding of promising energy efficient technologies.
- Develop a strategic Army-wide partnership to use multiple centralized and local Army assets and third party financing to reach Army energy goals.



ESPC – Questions and Answers

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