

Headquarters U.S. Air Force

Integrity - Service - Excellence

AF Measurement and Verification



Energy 2003
20 Aug 03
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Back to our Roots

- Our Problems
 - Replace aging infrastructure
 - Reliability – able to meet the needs of the mission
 - Energy Savings
- Our Need
 - Long Term Solution
 - Solve the problem
 - Keep it Solved

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Why ESPC?

- Direct Appropriation only replaces equipment
 - Doesn't ensure reliability
 - Doesn't ensure efficiency
- Lack manpower, technical skills and resources
- ESPC provides for the LONG TERM Solution
 - SUSTAINED PERFORMANCE
 - SUSTAINED SAVINGS

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ESPC

- How do we get SUSTAINED performance and savings
- Performance based contracting
 - Energy Savings PERFORMANCE Contracting
 - Performance is:
 - GUARANTEED

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ESPC Recap

- Need Long Term Solution
 - Sustained Performance
 - Sustained Savings
- ESPC
 - Guaranteed Performance
 - Guaranteed Savings
- How do we ensure the promise of LONG TERM performance and savings is delivered?
 - M&V
 - Today
 - Tomorrow
 - For the next 20+years

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Effective M&V Provides for:

- Verification of Performance
- Verification of Savings
- Verification of O&M

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Essential Elements of M&V

- Establishment of Baseline (Pre ECP)
- Determining Performance Requirements
- Determining Guaranteed Savings
- Acceptance Verification Tests
 - Performance Verification Tests
 - Savings Verification Methodology
- Annual Reconciliation
 - Performance Verification
 - Savings Verification/Determination/Reconciliation
 - O&M Verification
- Stand Alone Document



AF Approach to M&V

- Common Sense Approach
 - Identify modes of failure
 - Focus on highest risks
 - Isolate/minimize variables
 - Measure only the essentials
 - Boil down the results



AF M&V

- Develop Templates
 - By ECP/ECM
 - Provides Guidance and Direction
 - Define expectations
 - Starting point
 - The 80% solution
 - Applied by experts (ESCO and AF working together)
 - Living Document



M&V Advisory Subcommittee

- Bi-annual meetings
- Open forum with presentations, facilitated discussions, and working group break-out sessions
- Participation is open
- Recommendations made to DoD/DOE Steering committee
 - Recommendations are voluntarily applied



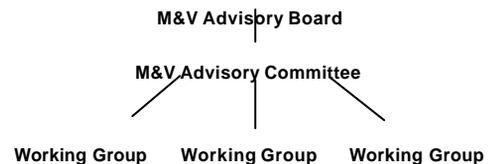
Goals

- To Serve the DOD/DoE ESPC Steering Committee by:
 - Providing M&V guidance and recommendations
 - Helping preserve federal ESPC program integrity through effective M&V
- Foster partnership between government and industry in advancing M&V practices
- Foster M&V uniformity across DOD/DoE and other federal agencies



Organization

- DOD/DoE ESPC Steering Committee





Completed Working Groups & Deliverables

- M&V Planning Tool
 - Overview of process for selecting M&V approach
- Training
 - ½ Day M&V training session for DOE ESPC DO workshop
- Annual Reporting
 - Outline format for Annual Report



Active Working Groups & Goals

- Commissioning
 - Develop commissioning procedures for ESPC implemented ECMs
- Retro-Commissioning
 - Develop re-commissioning of facilities as an ECM in ESPC projects



Proposed Working Groups & Goals

- Project Continuity
 - Documentation and life cycle project management (up to 25 year contract life)
- M&V Plan Template
 - Develop uniform template for M&V plans
- ECM Specific plans
 - Example M&V plans for common ECMs



M&V Advisory Subcommittee

- Next M&V Summit Nov timeframe
- All invited to attend