



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

OCT 31 2002

FROM: HQ AFCESA/CES
139 Barnes Drive Suite 1
Tyndall AFB FL 32403-5319

SUBJECT: **Engineering Technical Letter (ETL) 02-5: Guidance for Energy Savings Performance Contracts (ESPC)**

1. Purpose. This ETL presents guidance for implementing an ESPC.

2. Application. The main body of this ETL is divided into two parts: legislative overview and best business practices. The attachments are tools that have been developed to assist in applying the best business practices. This ETL applies to all ESPC work, including Air Force regional contracts and Air Force use of Army or Navy contracts and individual base contracts. Previously awarded ESPC contracts should be reviewed to determine if the ESPC legal intent, as stated in this ETL, is met. The MAJCOM/base can, at their option, update those contracts on a case-by-case basis.

2.1. Authority: Air Force Policy Directive (AFPD) 32-10, *Installations and Facilities*; Title 42 United States Code (USC), Section 8287, *National Energy Conservation Policy Act*; 10 USC 2865, *Energy Savings at Military Installations*; and 42 USC 8253, *Energy Policy Act of 1992*.

2.2. Effective Date: Immediately.

2.3. Ultimate Recipients: Major command (MAJCOM) civil engineers (CE), base civil engineers (BCE), base energy managers, base financial managers, and base contracting officers.

2.4. Coordination: MAJCOM CE energy managers.

3. Referenced Publications:

Note: For more information on ESPCs, visit the AFCESA energy Web site: <http://www.afcesa.af.mil/Directorate/CES/Mechanical/Energy/default.htm>

3.1. Air Force:

- AFPD 32-10, *Installations and Facilities*
- Air Force Federal Acquisition Regulation Supplement (AFFARS) 5317.108, *Special Contracting Methods - Congressional Notification*
- AFFARS 5341.201, *Acquiring Utility Services – Policy*

- *Air Force Procedures to Use AF/Army Regional ESPC Contracts*, available on the AFCESA Website at <http://www.afcesa.af.mil/Directorate/CES/Mechanical/Energy/ESPC/espctraini ng.htm>.

3.2. Executive Order:

- Executive Order (E.O.) 13123, *Greening the Government Through Efficient Energy Management*

3.3. USC:

- 10 USC 2865, *Energy Savings at Military Installations*
- 31 USC 1301, *Purpose Act*
- 31 USC 1341, *Anti-Deficiency Act*
- 42 USC 8287, *Authority to Enter into Contracts*
- 42 USC 8253, *Energy Policy Act of 1992*

3.4. Code of Federal Regulations (CFR):

- 10 CFR 436, *Federal Energy Management and Planning Programs*

3.5. National Institute of Standards and Technology (NIST):

- NIST Handbook 135, *Life-Cycle Costing Manual for the Federal Energy Management Program*
- National Institute of Standards and Technology Interagency Report (NISTIR) 85-3273-17, *Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis* (current version) - annual supplement to NIST Handbook 135

4. Acronyms and Terms:

AFFARS	- Air Force Federal Acquisition Regulation Supplement
AFCESA	- Air Force Civil Engineer Support Agency
AFCESA/CES	- Air Force Civil Engineer Support Agency, Technical Support Directorate
AFCESA/CESM	- Air Force Civil Engineer Support Agency, Mechanical/Electrical Engineering Division
AFPD	- Air Force Policy Directive
BCE	- base civil engineer
CE	- civil engineer
CO	- contracting officer
DD	- Department of Defense (form)
DP	- Personnel
ECIP	- Energy Conservation Investment Program
ECM	- energy conservation measure
ECP	- energy conservation project
EEIC	- Element of Expense Investment Code
ESCO	- energy services company

ESPC	- Energy Savings Performance Contract
ETL	- Engineering Technical Letter
HVAC	- heating, ventilation, air conditioning
IDIQ	- indefinite delivery indefinite quantity
ILE/ILEH	- Office of the Civil Engineer, Housing Division
IPMVP	- international performance measurement and verification protocol
M&V	- measurement and verification
MAJCOM	- major command
MFH	- military family housing
MILCON	- military construction
MOA	- memorandum of agreement
NAF	- non-appropriated funds
NAVFAC	- Naval Facilities Command
NAVFACCO	- Naval Facilities Command Contract Office
NIST	- National Institute of Standards and Technology
NISTIR	- National Institute of Standards and Technology Interagency Report
O&M	- operations and maintenance
OH&P	- overhead and profit
OMB	- Office of Management and Budget
Phase I	- Initial energy audit of selected facilities
Phase II	- Detailed investment-grade energy audit of selected facilities
POC	- point of contact
RCO	- regional contracting officer
SAF/AQC	- Assistant Deputy Secretary for Contracting
SPB	- simple payback
T-bill	- Treasury bill
TO	- task order
USC	- United States Code
XP	- Plans and Programs

5. Background.

5.1. The Air Force has been tasked by several Executive Orders and the Energy Policy Act of 1992 to reduce energy consumption 35 percent by 2010, based on the 1985 energy baseline. Under the Energy Policy Act of 1992 and Executive Order (E.O.) 13123, *Greening the Government Through Efficient Energy Management*, all Federal agencies must reduce their energy consumption 20 percent by fiscal year 2000 and 35 percent by fiscal year 2010, using fiscal year 1985 as a baseline. These directives require building surveys and programming of all energy projects with a ten-year or less payback.

5.2. The Air Force can use ESPC to help achieve energy-reduction goals. Under an ESPC, the energy services company (ESCO) pays all up-front costs, identifies facility/equipment energy savings potential, then acquires, installs, operates, and maintains the more energy-efficient equipment. The ESCO earns a share of resulting cost savings from the utility service account until the individual task order (TO) is paid

off. During the past several years, ESPCs have been used to improve the energy efficiency at many installations. From this effort, many lessons learned were obtained from the bases, MAJCOMs, and the Air Force Civil Engineer Support Agency (AFCESA). This ETL takes those lessons learned and provides guidance in implementing an ESPC. By using this ETL, an ESPC can be implemented with assurance that the energy savings can be realistically measured and validated for the term of the ESPC while meeting the legal intent of the ESPC. If an ESPC is used effectively, an installation can reduce energy consumption and improve the base energy-consuming infrastructure.

5.3. ETL Attachments:

5.3.1. Coordination Sheet. An example coordination sheet (Attachment 1) is provided to ensure all appropriate functions have reviewed and coordinated on a TO before the award. This sheet has been provided as a recommendation and should be modified to meet the base/MAJCOM requirements. It is recommended that the base energy manager be assigned as the point of contact (POC). This coordination sheet should be used concurrently with Phase I/II reviews. The final signature should be the base contracting officer, indicating that all appropriate functions have coordinated on the TO.

5.3.2. Recommended Minimum Instructions to ESCO. Attachment 2 is a list of recommended minimum instructions for the ESPC contractor. This list can be customized to meet base requirements. Discussing this list with the ESCO at the kickoff meeting will help avoid misunderstandings and lost effort.

5.3.3. ESPC Considerations for Base Energy Manager. Attachment 3 lists items the base energy manager needs to be aware of when implementing an ESPC. Each item provides an insight to potential problems that if not addressed early in the process could impact the base's anticipated success of the proposed TO. The list is not all-inclusive and base issues should be added as needed.

5.4. The Air Force can utilize an ESPC through the following contracts:

5.4.1. Air Force Regional Contracts. There are six regional contracts in place, and each has a regional contracting officer (RCO). RCOs delegate ordering authority to base contracting officers once they have received ESPC training. Each of these contracts has a maximum contract ceiling that the Air Force Civil Engineer Support Agency, Mechanical/Electrical Engineering Division (AFCESA/CESM) tracks for the RCOs. Any Air Force base can use the regional contract awarded in their area, but each base must coordinate with their MAJCOM and AFCESA, and receive ESPC training before proceeding with this option. *Air Force Procedures to Use AF/Army Regional ESPC Contracts*, providing a step-by-step approach for implementing an ESPC, can be found on the AFCESA Website at <http://www.afcesa.af.mil/Directorate/CES/Mechanical/Energy/ESPC/espctraining.htm>.

5.4.2. Individual Base Contracts. Several installations have developed and awarded an ESPC for their installation only. Any base can do this, but the process may take up to 18 months before an award takes place.

5.4.3. Navy Contract through Interservice Memorandum of Agreement (MOA). Delivery/TOs can be negotiated, awarded, and administered by an Air Force ordering officer, utilizing Navy ESPC indefinite delivery indefinite quantity (IDIQ) contracts, after a delegation of ordering authority has been approved by Naval Facilities Command (NAVFAC) and Naval Facilities Command Contract Office (NAVFACCO). TOs are developed in accordance with the requirements of the applicable contract and conditions set forth in the MOA. These contracts are available for select overseas locations only.

5.4.4. Full-service Army Contracts. Beginning in fiscal year 2003, for new projects under the full-service Army contracts, the base must pay the Army to be trained and pay a service fee (about 1% of the base utility budget) for the Army to administer the ESPC for that base. The base will coordinate with AFCESA and the MAJCOM before proceeding with this option.

6. Responsibilities:

6.1. AFCESA:

6.1.1. Develop ESPC procedures and guidance and provide training on the use and implementation of the ESPC.

6.1.2. Support the RCOs by tracking contract ceilings, administering ordering authority, and archiving awarded TOs.

6.1.3. Have tools and expertise available to assist in implementing an ESPC, and act as a clearinghouse for ESPC lessons learned.

6.1.4. Provide oversight responsibilities for administering the Army and Navy ESPCs.

6.1.5. Submit the coordination sheet/Congressional notification letter (from base contracting) to the Deputy Assistant Secretary for Contracting (SAF/AQC) for all projects greater than \$10 million in investment costs.

6.2. MAJCOM CE:

6.2.1. Provide oversight and compliance with Air Force policies and guidance for the installation's ESPC program.

6.2.2. Coordinate on all Congressional notification packages and return to the base contracting office for final signature by the contracting officer (CO). (Base contracting

will forward the Congressional notification package and coordination sheet to HQ AFCEA.)

6.3. Base Civil Engineer (BCE) Organization:

6.3.1. Act as the single POC for implementing the ESPC program.

6.3.2. Ensure the base energy manager and the contracting officer administering the ESPC contract receive ESPC training before implementing an ESPC program, and newly assigned personnel associated with the ESPC program receive this training for the term of the ESPC. It is recommended that the CE financial manager, base financial manager, and a representative from the base legal office attend this training.

6.3.3. Ensure ESCO complies with continuing requirements for the term of the contract.

6.3.4. Verify annually that the ESCO is meeting the guaranteed savings based on the requirements of the measurement and verification (M&V) plan for the term of the contract.

6.3.5. Assist base contracting in developing Congressional notification packages; coordinate and obtain MAJCOM CE organization coordination on all projects greater than \$10 million in investment costs.

7. ESPC Legislative Overview. The following is a legal review of the applicable legislation governing the use of the ESPC:

7.1. ESPC Overview.

7.1.1. Contrary to typical acquisitions practices, specific legislative authority (42 USC 8287) allows the Air Force to enter into contracts to take on debt to acquire energy-conserving infrastructure improvements under the condition that the overall utilities costs to the installation do not increase as a result of the contract and that any Air Force-incurred debt is secured by a guarantee of savings from the contractor. The savings that are generated must be a result of the contractor's (ESCO) efforts and investment. To accomplish this, 42 USC 8287 authorizes the use of ESPCs, which are performance contracts requiring the ESCO to guarantee sufficient savings to cover all costs associated with an energy conservation measure (ECM). The use of an ESPC requires a detailed understanding of its basic principles, how costs are assessed, and how risks are managed.

7.1.2. ESPC projects must be funded solely from the savings they generate. An ESPC has limited funding authority in that all ESPC costs must be funded out of ESPC savings. An installation's post-ESPC utilities costs (i.e., energy, and operations and maintenance [O&M]) plus the cost of the ESPC project cannot exceed the utilities costs prior to the implementation of the ESPC project. Thus, the costs cannot exceed the savings (i.e., energy and O&M) generated by the projects. The payment to the ESCO is

contingent upon verification that the government realizes the guarantee of savings from the ESCO.

7.1.3. The ESCO is responsible for the design, acquisition, installation, and testing of the energy conservation project's (ECP) equipment or systems that produce the savings. An ESPC, however, is not a design-build contract; it is a performance contract that requires the ESCO to guarantee the savings and the operation of the ECP equipment installed. This performance requirement places the responsibility for all equipment, O&M, parts, and materials that affect this guarantee upon the ESCO. This guarantee must not only be satisfied and verified at the acceptance of the ECP equipment, but revalidated annually throughout the life of the TO.

7.1.4. Certain risks are always associated with implementing an ESPC. Both the ESCO and the installation assume some level of risk. The installation assumes the risk of any stipulations, including utility rates, hours of operation, and mission changes, during the life of the TO. These risks require a thorough understanding and evaluation in order to minimize any unnecessary risk to the installation. The ESCO assumes the risk for the performance of the implemented ECM through its maintenance responsibility and guarantee of savings for the entire term of the contract. Again, careful consideration must be given to ensure that the installation is not assuming any of the ESCO's risk.

7.2. Guaranteed Savings. The ESCO will provide a guarantee of savings to the agency, and establish payment schedules reflecting such guarantee, taking into account any capital costs under the contract. The annual guaranteed savings is identified in two categories: energy and O&M savings. The ESCO must provide these figures for each year of the contract. The actual payment to the ESCO is based on the guaranteed savings amounts and not the calculated savings. These awarded TOs, like utility bills, are "must-pay" requirements and must be programmed into the annual utility budget process. ESPC costs can never exceed the guaranteed savings (energy and O&M). See 42 USC 8287.

7.3. ESPC Energy Costs.

7.3.1. Aggregate annual payments by an agency under an ESPC may not exceed the amount that the agency would have paid for utilities without an ESPC during contract years. ESPC costs can never exceed the energy and O&M savings. See 42 USC 8287.

7.3.2. Energy costs are a major factor in determining project viability and actual payments to the ESCO. Energy costs will be determined by using historical data, the current local utility contract prices, and, if the utility has an approved price rate change, that figure can be used effective on the date of implementation of that rate change. Additionally, escalating energy costs can be used, but extreme caution should be exercised due to the risk of an Anti-Deficiency Act (31 USC 1341) violation occurring at some point over the life of the TO. A violation may occur when the estimated escalated

utility rates used to determine the savings exceed the actual utility rates, resulting in costs exceeding savings for the ECM. Energy costs can be escalated at a rate no greater than the rates published in the current edition of the National Institute of Standards and Technology Interagency Report (NISTIR) 85-3273-17, *Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis*, published as the annual supplement (April 2002 or latest supplement) to the National Institute of Standards and Technology (NIST) Handbook 135, *Life-Cycle Costing Manual for the Federal Energy Management Program*. See 10 CFR 436, *Federal Energy Management and Planning Programs*.

7.4. Maintenance Responsibilities. Maintenance and repair is critical to sustain an ECM's guaranteed performance throughout the life of the TO. Because the ESCO is held responsible for the performance guarantee, they are also responsible for any factors that may affect this guarantee. 42 USC 8287 specifically requires that any ESPC "...shall provide that the contractor is responsible for maintenance and repair services...." Because the ESCO is held responsible, all costs relating to the performance guarantee, including labor, supplies, parts, and materials for the term of the TO, must be included in the total ECM costs.

7.4.1. The base may physically perform the maintenance as long as the ESCO retains the ultimate responsibility for maintenance accomplishment for the length of the TO. Consequently, the language in the ECM should clearly state the ESCO is not transferring this responsibility to the base and the contractor is responsible for maintenance and repair services for any energy-related equipment, including computer software systems. The ESCO, being held responsible, is required to oversee and ensure all maintenance is performed to ECM requirements.

7.4.2. If the base agrees to perform this function for the ESCO, it must require the ESCO to provide all parts and material needed to accomplish this service. All parts and material needed to maintain and repair an ECM must be paid from either captured O&M or energy savings. Without capturing these savings, the government cannot assure the funds will be available to cover future O&M costs necessary for maintaining equipment performance.

7.5. Simple Payback (SPB). The ECM must have an SPB of 10 years or less. Estimated SPB time is the number of years required for the cumulative value of energy cost savings less future non-fuel costs to equal the investment costs of the building system without consideration of future price changes or discount rates. See 10 CFR 436.23

7.6. Capturing ESPC Savings. Only O&M funds can be applied to an ESPC. Since planned future equipment replacement is not funded until the year of replacement, these funds cannot be used to capture savings. See 42 USC 8287.

7.7. Annual Reconciliation. Each year a verification of energy savings reconciliation must be accomplished for each awarded TO. This requirement includes an approved M&V plan using at least the current international performance measurement and

verification protocol (IPMVP) at the time the TO was awarded (paragraph 9.1). During the annual reconciliation, the ESCO should confirm the adequacy of maintenance. See 42 USC 8287.

7.8. Replacement Cost. Energy savings can only be captured if the equipment is installed by the ESCO and the ESCO remains responsible for its performance. The ESCO is responsible for the cost of replacing equipment or components essential to achieving these savings over the term of the TO. See 42 USC 8287.

7.9. Buydown. ESPC costs can also be funded with installation funds used to buydown part of the existing TO; for example, end-of-year fallout funds. Ensure the TO contains no penalties for buydowns.

7.10. Buyout Issues. When government actions (e.g., removal or demolition of installed ESCO equipment, or mission changes) result in a decline in annual guaranteed savings falling below the annual payments to the ESCO, and the TO term cannot be extended, the buyout provision will be exercised. Ensure the TO contains no penalties for buyouts.

8. Funding Requirements.

8.1. Encumbrances. Facilities that are encumbered with an ESPC may require a "buyout" of such encumbrances before work is performed. When government actions on a facility (e.g., demolition, upgrades, construction, or privatization) will impact the ESPC contractor's materials/equipment installed under an ESPC, or otherwise alter the conditions of the contract, making the affected portion of the contract no longer valid, programming for the encumbered facility should consider funds to "buyout" the applicable portions of the contract. If possible, "buyout" funds should be programmed with the same fund source as the project itself; however, this may not be possible with all project categories.

8.2. MILCON funds cannot be applied to an ESPC.

8.3. Non-appropriated fund (NAF) functions may or may not be authorized to use appropriated O&M funds. NAF category C activities must not use savings from other than NAF to subsidize ESPCs. All actions affecting funding must be coordinated with the NAF funds manager.

8.4. Military family housing (MFH) funds are appropriated separately and used specifically for MFH purposes. MFH ECPs must use savings only from other MFH ECPs to avoid subsidizing or being subsidized by other than MFH-funded sources. Use of MFH funds for a purpose outside their appropriated use would result in a violation of the Purpose Act (31 USC 1301).

8.5. Reimbursable customers require separate accounting procedures to ensure adequate payments are being applied to their accounts.

8.6. Contract Cost. The base must provide the total contract cost for each phase of an ESPC and a final signed copy of the TO to AFCESA/CESM for tracking the contract ceiling: for a Phase I report, include the estimated investment cost provided by the ESCO; for a Phase II report, include the final negotiated contract amount encompassing the total cost over the life of the contract.

8.7. Congressional Notification. When a TO contains a cancellation ceiling in excess of \$10 million, Congressional notification is required. See Air Force Federal Regulation Acquisition Supplement (AFFARS) 5317.108, *Special Contracting Methods - Congressional Notification*, and AFFARS 5341.201, *Acquiring Utility Services - Policy*. Congressional notification is submitted to AFCESA/CESM and must be accompanied by a MAJCOM-approved coordination sheet (see Attachment 1 for an example).

9. Best Practices. The following best business practices are provided as recommendations to help the installation implement an ESPC. These suggestions will help in translating the requirements and applying the lessons learned toward achieving a successful ECM.

9.1. M&V Plan. The M&V plan is the cornerstone of an ESPC, ensuring the installation's ability to confirm that actual energy savings are occurring and verified in a reasonable, cost-effective manner. Using this plan annually guarantees to the base that the equipment installed is performing as predicted. Using a good M&V plan will help mitigate risk to the base, eliminate conflicts when systems fail to meet their expected savings, and ensures that the ESCO remains engaged with the base over the full term of the contract. All M&V plans should use the most current IPMVP.

9.1.1. Baseline Development. An energy baseline is a prediction of the amount of energy that would have been used if there had been no energy conservation equipment installed.

9.1.1.1. It is recommended that actual metering and data collection be performed by the ESCO but verified by the base to ensure the baseline reflects realistic energy consumption upon which the savings calculations will be based. Data collection requirements vary by ECP but a minimum of three months' data is recommended.

9.1.1.2. All assumptions made in the Phase I report should be validated in Phase II by the ESCO. Validation includes all pertinent data and formulas used to compute the energy savings and be documented so the base energy manager can easily explain these savings now or in the future.

9.1.1.3. It is recommended that baseline development and data collection begin immediately after the initial kickoff meeting. The longer the data collection period, the lower the risk to the base and ESCO (lower risks result in lower overall costs).

9.1.1.4. Review of the baseline by an independent party is recommended. The MAJCOM/base will pay the cost of these reviews.

9.1.2. Performance Tests.

9.1.2.1. A performance test is a process for achieving, verifying, and documenting the performance of equipment installed or modified as part of an ECP. The process begins in Phase II with the development and approval of a performance test plan and implemented after the TO award. Implementation is accomplished during construction to certify that all equipment is functioning and operating properly and the results approved before conducting the energy savings verification tests.

9.1.2.2. The performance test plan developed as part of Phase II is prepared for each ECP which describes all aspects of the test process, including schedules, responsibilities, documentation requirements, and functional performance test requirements. The functional performance tests should describe at what conditions or loads the tests are to be performed, location of test sensors, frequency of measurements, type of test equipment, test methods, and the acceptable range of results. The level of detail depends on the complexity of the ECP.

9.1.2.3. After the performance test is performed, a final report should be submitted for approval in writing to the base contracting officer and base energy manager. The final report is submitted after all functional performance tests are completed. It is recommended that it include the executive summary, ECP description, and the performance plan, including all test results.

9.1.3. Energy Savings Validation.

9.1.3.1. It is recommended that a formal set of test procedures with the acceptable range of results be developed to validate energy savings. These energy savings validation test procedures should be submitted by the ESCO at Phase II and approved before awarding the TO. The tests should describe at what conditions or loads the tests are to be performed, location of test sensors, frequency of measurements, type of test equipment, test methods, and the acceptable range of results. The test procedures should verify all energy savings that are guaranteed under the ECP/ECM.

9.1.3.2. It is recommended that after approving the performance test results for each ECP, the ESCO perform the approved energy savings test procedures to validate the energy savings for each ECP.

9.1.3.3. Once the validated energy savings have been approved for all ECPs, payment will begin the first full month after acceptance of the ECM.

9.1.4. Annual Reconciliation Plan (Audit of Savings).

9.1.4.1. Each ECP in the TO should have a detailed annual (at a minimum) reconciliation plan approved before the TO award. The plan should describe a formal set of test procedures, acceptable range of results, schedule of how reconciliation payments will be assessed if savings fall below the guarantee, and a certification by the ESCO that all O&M requirements and conditions have been met for each ECP in the TO.

9.1.4.2. The test procedures should be similar to those developed to validate energy savings. The purpose is to test, validate, and document the energy savings.

9.1.4.3. The contracting officer must approve the annual reconciliation of savings after coordination by the base energy manager.

9.1.4.4. It is recommended that an independent audit of the ECP's savings be performed every five years, and a report sent to the base contracting officer, base energy manager, and MAJCOM energy manager. The MAJCOM/base will pay the cost of these reviews.

9.2. Maintenance Related to TO.

9.2.1. All maintenance is an ESCO responsibility and should be performed by the ESCO; however, in some cases the installation may have the capability to perform such maintenance. If maintenance is performed by the installation, the responsibility remains with the ESCO. Having the ESCO perform the maintenance eliminates the risk to the installation that a reduction of energy savings is the result of improper routine maintenance by the installation.

9.2.2. If the base agrees to perform the maintenance, it should carefully consider the consequences should it become unable to perform in accordance with the maintenance schedule. Since the ESCO is ultimately responsible, they will determine if the government is meeting TO requirements. If the base fails to perform proper maintenance, the ESCO will take over the maintenance and charge the base for performance. This will require modifying the TO to capture savings that were not applied, reworking the TO's financial provisions, and possibly extending the TO's term length. When the base assumes maintenance, the ESCO must provide a detailed maintenance schedule reflecting by whom, when, and how often the maintenance is to be performed as detailed in the Phase II report. Since all costs must be accounted for, the estimated cost of the ESCO performing the maintenance should be included in the proposal and reflected in the cost analysis. This will avoid any conflict/violation of the Anti-Deficiency Act in the event the ESCO must assume performing the maintenance by ensuring these costs are included in the overall cost of the ECM.

9.2.3. If the installation chooses to continue to have the building occupant replace fluorescent tubes, the ESCO remains responsible for all parts and material. It is recommended that the ESCO provide replacement tubes directly to each building or to

a central location to be disbursed to the building managers to avoid incorrect tube replacement by the occupant.

9.3. Pricing of TO Work.

9.3.1. The installation has the option to request from the ESCO any degree of detail needed to determine a reasonable price.

9.3.2. It is recommended that the estimates for each ECP identify all major costs (e.g., equipment, labor, design, maintenance, repair, parts, overhead and profit [OH&P], travel, M&V).

9.3.3. Contingencies should be clearly identified and negotiated for each ECP in the Phase II reports.

9.3.4. Ancillary savings are those that are not directly attributable to energy savings, such as manpower reduction or elimination of contract-operated functions. To capture these savings, the following approach is recommended:

9.3.4.1. Eliminating Government Civilian Positions. Elimination of government civilian positions is a lengthy process and requires close coordination of all appropriate functions. This process can take up to two years and therefore the decision to proceed needs to be made very early in the ESPC process.

9.3.4.1.1. Recommend obtaining XP (Plans and Programs) and DP (Personnel) approval for all manpower actions (coordinated through the MAJCOM and Air Staff).

9.3.4.1.2. Position numbers from eliminated positions should be identified and the amount of funding for reprogramming agreed upon.

9.3.4.1.3. Government civilian positions must be abolished/deleted from the official manpower rosters before related savings can be added to the ESPC proposal.

9.3.4.2. Reducing Contract-operated Functions. Since only the final negotiated savings can be applied to the ESPC contract, it is recommended that all negotiated cost reductions due to the reduction or elimination of contract-operated functions be completed before those savings are accepted in the proposed TO.

9.4. Equipment Ownership. It is recommended that the ESCO retain ownership of all installed equipment for the term of the contract.

9.5. Infrastructure Privatization. It is recommended that any utility system or family housing being considered for privatization not be included in any ESPC efforts. Any utility system is defined as infrastructure outside the 1.5-meter (5-foot) line of the using facility, and includes production and distribution assets.

10. POC. Recommendations for improvements to this ETL are encouraged and should be furnished to: HQ AFCESA/CESM, 139 Barnes Drive, Suite 1, Tyndall AFB, 32403-5319, Attention: Mr. K Quinn Hart, DSN 523-6361, commercial (850) 283-6361, FAX DSN 523-6219, Internet quinn.hart@tyndall.af.mil.

MICHAEL J. COOK, Colonel, USAF
Director of Technical Support

- 4 Atchs
1. Example Coordination Sheet
 2. Recommended Instructions to ESCO
 3. Recommended ESPC Considerations for Base Energy Manager
 4. Distribution List

EXAMPLE COORDINATION SHEET

Title of Project: _____
 Location: _____
 POC: _____
 Suspense Date: _____

TO	Action	Signature (Surname),	Grade,	Date	Suspense Date
BCE					
Funds Mgr	COORD				
Energy Mgr	COORD				
Design Chief	COORD				
Environ Mgr	COORD				
Ops Chief	COORD				
Planner	COORD				
MFH	COORD				
Real Estate	COORD				
BASE					
Comptroller	COORD				
Legal	COORD				
MAJCOM CE					
CEO/CEC	COORD				
Funds Mgr	COORD				
Energy Mgr	COORD				

Base Contracting Officer: _____

For Congressional Notifications: Send copy of completed coordination sheet to AFCESA/CES
 Send copy of signed task order to AFCESA/CESM

Comments: _____

RECOMMENDED INSTRUCTIONS TO ESCO

A2.1. These instructions are provided as an aid to help communicate the basic ESPC requirements to the ESCO. It is recommended that they be discussed early in the process, such as at the kickoff meeting. When the ESCO's proposal complies with these requirements, misunderstandings and lost effort that delay the process can be avoided. The purpose of this list is to advise the contractor of the government's concerns and position so it can perform its audits and prepare its proposal accordingly. Additions to these instructions are encouraged; see paragraph 10 for POC information.

A2.1.1. Survey reports and audits should be well organized, clearly presented, logical, thorough, and complete, and should consider all ECPs that are or may be applicable. The Air Force encourages contractors to be innovative with regard to energy savings and cost-saving measures. The Air Force expects the energy service providers to go beyond those areas in which the ESCO has a strength or particular interest. While the Air Force expects to see traditional ECMs such as lighting retrofit and water conservation, the Air Force is also very interested in proposals that include: co-generation; use of waste heat; distributed generation; gas turbines; micro-turbines; fuel cells; geothermal heat pumps; steam turbines; backpressure steam turbines; energy-efficient (premium) motors; variable-speed and variable-frequency drives and fans; energy-efficient elevators; improved building envelopes and roofing systems; reflective or heat-reflective coatings; intelligent or photochromatic glass; solar screens; solar, wind and other forms of renewable energy; peak shaving; thermal storage; real-time metering and pricing; fuel switching; continuous commissioning; geothermal ground source heat pumps or pipes; and other forms of viable energy conservation and energy cost reduction that meet the requirements of E.O. 13123 authorizing alternative financing of energy conservation projects. If such possibilities are rejected, the grounds should be economic or some other basis agreed to between the installation and the ESCO.

A2.1.2. Each ECP should be presented independently and include assumptions, calculations, and savings. This is necessary for the installation to make intelligent business choices as to what to include and exclude from a project. ECPs that are logically part of one ECP should not be broken out as separate ECPs unless each ECP could stand on its own as an ECM.

A2.1.3. While innovative ECPs are encouraged, do not propose ECPs that do not meet the requirements of E.O. 13123 (i.e., savings can be verified based on sound engineering and accounting practices, interest rates are within Office of Management and Budget [OMB] guidelines, term of years for payout is appropriate, guarantee and M&V is appropriate).

A2.1.4. Be conservative and realistic about the savings that will be realized from a proposed ECM. Include the information used in arriving at the projected savings and detail the assumptions that this level of savings is predicated upon. Remember that the ESCO will have to guarantee that the savings represented are actually produced by the work performed.

A2.1.5. Only savings that result from the direct action of the ESCO in implementing an ECP can be captured. For example, a proposal by an agency to move its computer room to another location or reduce its staffing levels will save energy at the building, but it was not brought about by the ESCO-installed ECP and cannot be counted as savings resulting from the contractor's project.

A2.1.6. Provide the information regarding the interest rate that will be charged on the funds the ESCO will be providing so the Air Force can check and confirm the appropriate rate is being applied. We recognize the rate is dependent on numerous factors, including, but not limited to, the Treasury rate (20-year swap T-bill), credit worthiness, and term of the loan. We expect, however, that the most favorable interest rate will be obtained and we recommend the ESCO explain the factors behind the proposed rate.

A2.1.7. Provide information regarding the contractor's overhead rates and burdens to the contracting officer.

A2.1.8. The ESCO should indicate how the proposal addresses the M&V requirements of the contract.

A2.1.9. Indicate the performance time of the project work, when work will commence, and when it will be completed. Include any deadlines for rebates and a schedule. All rebates will become the property of the Air Force or will be contractually obligated to the project so as to reduce the length of payout of the project. Provide sufficient information so that the government can determine how many rebate dollars are being applied to the contract and how much this reduces the length of the contract term. This information is required prior to the issue of a TO.

A2.1.10. The ESCO should explain all ECPs, including those that have been considered by the ESCO but rejected as not feasible. Explain why the ECP that has been rejected is uneconomical or not practical; do not just state that the ECP is not economical, but also provide the reasoning behind this decision. Do not omit any government buildings in the assigned area from audit and evaluation.

A2.1.11. Provide a life cycle cost analysis for each ECP that is proposed. The Air Force needs to be able to weigh the alternatives to various types or kinds of equipment that will be installed against its life cycle cost to the government. All equipment proposed for use must be as energy-efficient as practical and, if possible, should be Energy Star[®] certified.

A2.1.12. In addition to the individual ECP-by-ECP breakout, include the total cost of the project to the government.

A2.1.13. The termination schedule can never exceed the contract cost. The termination fee should be reduced as the contract continues.

A2.1.14. Include information about any equipment manufacturer's warranty and any ESCO-provided warranty to the government.

A2.1.15. Identify any value-added features that are being provided to the government, such as the ability to operate with partial loads during weekend or overtime hours of operation, or rebates that will be available as a result of the work performed. Do not count the economics of any rebate towards the project unless you have confirmed that the rebate funds are available, will be received by the government, and that the project qualified for the rebate. Any shortfalls will be the liability and responsibility of the ESCO.

A2.1.16. Present the energy efficiency of each project on an ECP-by-ECP basis and include the payout term for each ECP. These payouts should be in line with other Air Force contracts for similar ECPs, or in its own operations installing this type of equipment.

A2.1.17. Do not propose M&V by a total building or utility bill-monitoring basis. It is too difficult to isolate the cause of problems with an ECP and it also permits the total result to be influenced by things that have nothing to do with the particular ECP, its operation, or function. Thoroughly explain the M&V you are proposing and why.

A2.1.18. If necessary, ask questions so the Air Force can provide answers.

A2.1.19. It is recommended that the proposal be evaluated to determine how the project will be conducted around normal business hours. Installation or construction work that can be done after business hours will avoid some disruption to the tenants.

A2.1.20. Present a plan for how the building will be kept operating while switching out equipment, and how utilities will be provided during cutover operations if necessary (any associated cost should be included in the project's economic provisions).

A2.1.21. Present a plan on how you intend to coordinate with the local building manager and tenant agencies.

A2.1.22. Do not propose ECPs that, while energy-efficient in the short run, will impose increased or additional expenses on the installation in the long run. Do not propose less expensive (but also less efficient) equipment that will cost the government more in higher electricity bills than will be saved by the incremental price advantage of the less-expensive equipment.

A2.1.23. Consult with the installation's engineering and technical staff regarding equipment selection.

A2.1.24. The ESCO must include the cost of bonds or insurance with the proposal. These projects, like other government construction projects, require bonds and

insurance acceptable to the government for those performing work on government property.

A2.1.25. Remember that this is a performance contract—if the contracted results are not obtained the ESCO has to pay the government the shortfall under the guarantee, so include everything in the proposal that is necessary to accomplish the task.

A2.1.26. Submit a detailed plan and schedule for the conduct of the energy audits and surveys of the building. Indicate when audits will commence and conclude, and when reports will be submitted.

A2.1.27. The government has other government agencies or tenant agencies located in its buildings and facilities. These building tenants do not have authority to make changes to the ESPC work or to alter the contract. Only the Air Force contracting officer has the authority to issue modifications or request changes to the scope of work. The ESCO should refer all such requests by a tenant agency to the Air Force.

A2.1.28. Where possible and feasible it is recommended that M&V be conducted by remote monitoring of data loggers or other metering equipment over the Internet in order to reduce M&V costs.

A2.1.29. The contract must provide that the Air Force is entitled to and will receive copies of all data produced for the project, or any audits, studies, or evaluations leading up to the project, including copies of utility bills, economic analyses, plans, information from data loggers, and M&V reports and results. The Air Force gets free access to all data produced, regardless of who produced the data or for whom it was produced.

A2.1.30. It is recommended that the ESCO place a sign in the lobby of the building (or other highly visible location) where an ECP is being performed to publicize the project and its benefits.

A2.1.31. Any chillers or other major items of equipment that are to be removed from the project and sold or scrapped will have their age, material characteristics of a technical nature, and condition noted, and will have a value assigned in the ESCO's cost and price proposal. This salvage value is provided by the ESCO to the government as a credit against the contract value for taking possession of this equipment. The government retains the option that if it does not agree that the price indicated by the contractor is a fair value for the item that it may arrange for the disposal or disposition of the item for its own account and may direct the credit of the funds obtained for the items against the contract amount.

A2.1.32. After the TO has been negotiated, agreed upon, and issued, amendments or changes to the TO cannot be made without the express written consent of the government. Further, because of the great difficulty of issuing modifications to the TO, modifications due to extraordinary circumstances require determination by the contracting officer. Because this is a performance contract, any undisclosed costs or

item or material or labor, cost overrun, delay, or omitted item, or incorrectly understated number of items required for this contract, of any nature whatsoever, will be the sole cost and liability of the contractor.

A2.1.33. All equipment that is installed must include all the necessary controls, preparation work, wiring, piping, or other associated work needed to install the ECP. For example, but not by way of limitation, if lights are retrofitted the wiring must be replaced at least back to the junction box or further if its condition indicates that such action is appropriate, and “tombstone” on lighting fixtures will be replaced. If there is any dispute, disagreement, or argument whether such action is required or not, it must be resolved by the parties in a manner acceptable to the government before issuing a TO. It is the intent that the government not be placed in a position where it has installed new energy-efficient lights but has had left in place an outdated and outmoded system of wiring to service those new lights. Each ECP is considered as a complete system, including all components and related items and materials required to function effectively.

A2.1.34. All equipment and labor for this project and equipment that is removed will include in its costs and expense the removal and disposal of any unused wires, pipe, equipment, conduits or associated parts, controls, or materials that are no longer necessary for the operation of the equipment or the physical plant of the building or to Air Force operations, and the surrounding areas will be restored to a satisfactory condition acceptable to the government’s inspectors. Old or unused material and equipment must not be abandoned in place (unless agreed to by the government in writing), but will be demolished and/or removed from the property with any necessary repairs to patch holes or make the premises safe as part of the work performed by the contractor.

A2.1.35. It is recommended that the ESCO bring their financial backers/lenders to the negotiations. If there are contract provisions that cause the transaction to be more expensive, sometimes these can be negotiated or eliminated. The Air Force will be able to educate the financial backers on the terms of the contract. These are government contracts backed by the full faith and credit of the United States.

A2.1.36. If the ESCO has ideas to reduce the cost, risk, or expense of a proposed project to all parties, do not hesitate to discuss them with the Air Force. The government will give them due consideration, and, if feasible, they may be adopted for use in the transaction.

A2.1.37. Problems often come up in negotiations about who will be liable for and responsible for the equipment after the installation period. Typically, the performance of maintenance will be negotiated and agreed upon as part of the contract. In all cases the government requires that the ESCO provide their cost of performing the maintenance as part of the proposal, even if it has been decided that the base will perform the maintenance. Regardless of how the maintenance is addressed, the equipment is the ESCO’s responsibility for the entire term of the contract, including

installation and the performance period. This is a performance contract and the equipment installed must be cost-effective over the life cycle. If the contractor needs to obtain insurance or extended warranties to cover the risk of a piece of equipment malfunctioning after it is installed, but before the end of the contract term, this should be included as part of the contractor's proposal. It is often cheaper and easier to obtain insurance to cover this than it is to obtain extended manufacturer's warranties for the life of the contract term. The government expects that the most cost-effective means of addressing the problem that is mutually acceptable to the parties will be utilized.

A2.1.38. The government expects that when financial spreadsheets are run for a project, rebate money, buydown amounts, or government payments to the contractor will not be included in the project financing as amounts that incur interest for the entire term of the contract. If rebates are distributed to the project over a number of years, the project financing and economics of the project need to reflect this situation accurately and in accordance with generally accepted accounting practices for the government sector.

A2.1.39. Annual M&V costs cannot be capitalized as project costs and financed. Annual M&V costs are considered part of the service portion of the contract and should be clearly identified and presented as an annual cost on the cost analysis spreadsheet used to determine the annual payments to the ESCO.

RECOMMENDED ESPC CONSIDERATIONS FOR BASE ENERGY MANAGER

A3.1. The following is a list of items the base energy manager should consider before proceeding with an ESPC. They represent ideas and suggestions that can assist in implementing a successful ESPC project.

A3.1.1. While the ESCO brings technical energy expertise to the base energy program, the base energy manager should also have a definite plan to improve the energy efficiency of the buildings. Determine how to most efficiently plan and schedule the work to be accomplished. Ask local facility managers and operations staff for ideas to improve the building's operational characteristics; local staff often know what equipment is failing or not operating in a proper manner due to design defects, age, or other reasons. Keep in mind your overall goals. This is not a wish list for your building managers and it is not an opportunity for an ESPC contractor to "cherry pick" the most profitable projects, leaving the less economical work for others to accomplish. If that happens, the other work will never be completed, and you will be saddled with these undesirable systems in their present condition. Keep in mind that an ESCO's costs and overhead will be greater for widely scattered buildings than it will be for facilities that are clustered together. Structure your packages of buildings so as to take maximum advantage of project economics. Include the less desirable projects with the more attractive projects, and ensure the ESCO takes them as a package. Use the attractive savings from rapid payback projects like lighting retrofits to help support and subsidize the less economical work such as chiller and cooling tower replacement.

A3.1.2. The ESCO was awarded the contract based on their technical ability to address a wide variety of sound energy technologies. Do not accept a preliminary report that only addresses technology that the ESCO elected to look at and consider. If the base energy manager is interested in the viability of a specific technology and the ESPC contractor states that the proposed technology is not economical, have them explain why in writing.

A3.1.3. Use a multi-disciplinary team to evaluate proposals. Make certain to consider the cost of maintenance and repairs after work is installed, as well as items such as the equipment's noise level. Each ECP should be evaluated on a life-cycle cost basis, and energy-efficient or Energy Star[®] equipment should be used in the project where possible.

A3.1.4. Future energy commodity pricing is very difficult to predict. Where practicable, you may want to have building energy management or advance pulse interval metering and load profile data recording devices installed as part of the contract. It is often difficult to assign energy savings value to such equipment, so be prepared for these issues. The importance of having this advanced metering technology available for obtaining the best energy procurement prices after deregulation cannot be overstated.

A3.1.5. Ensure a clear understanding with the ESPC contractor on desired goals.

A3.1.6. Keep the terms and provisions of the ESPC TO as straightforward and clean as possible, without, for example, all sorts of added O&M savings or escalators for cost of fuel and services. Look at each individual ECP and determine how it contributes to the overall project. Look at its length of payoff and the impact of its removal or inclusion on the overall project economics. Make the appropriate business trade-offs and establish an optimal scope of work for the project. A project may be modified later if you want to include some O&M savings to accomplish a desired goal; however, if you do this make sure the O&M savings are real and can be demonstrated to be obtainable.

A3.1.7. One of the greatest areas of contention may be the terms of the guarantee and the terms of M&V to confirm that energy savings have been achieved. Some common assumptions regarding matters such as the occupancy level of the building, comfort level setback points for the heating, ventilating, air conditioning (HVAC) systems, what the baseline level of energy use is, and how future changes to the building or its systems will be addressed, must be considered and an agreement reached. The installation cannot expect to escape its obligations under the guarantee by minor or insignificant events (e.g., filters not changed as often as the ESCO thinks they should be). Agreement up front will allow disputes to be avoided over these matters later on. As energy prices are generally rising, by holding to the line on these matters and insisting that they fund based on present-day valued energy savings, we are only providing additional upside and value to the government when energy prices do indeed increase.

A3.1.8. Either obtain load profiles or have the ESCO obtain load profiles and then go to the building during the peak energy use period. Tour the building and make observations about the energy-using equipment being operated. Determine if any equipment use or power loads could be shifted to a non-peak period of energy use. If not, explore ways to peak shavings, thermal load shifting, and other means of saving energy and costs that could be used to cut expenses. Consider the use of automated building management systems and timed-out electronic locks on non-essential equipment so it cannot be operated during periods of peak demand.

A3.1.9. The importance of coordination cannot be overstated. Pay attention to detail and follow up on everything. Make sure to involve the MAJCOM, and base engineering, construction, contracting, finance, and legal functions before awarding the TO.

A3.1.10. Coordinate with the local utility service providers. If you are considering a project that would allow you to go from a firm natural gas service rate to an interruptible service rate, check first to make sure there is an interruptible service rate that is available or that one can be obtained from another service provider.

A3.1.11. Determine if there are rebates available from the utility or from the ESPC contactor to help finance the cost of ECPs.

A3.1.12. Another common area of contention is the contract language addressing M&V issues. Make sure that there is clear understanding and clear contract language

addressing how much M&V is to be performed. Become familiar with the latest version of the IPMVP and make use of them in your contract. M&V must comply with the requirements of the Energy Policy Act of 1992.

A3.1.13. All MFH ECPs should be thoroughly evaluated against future MFH renovations or new housing initiatives for possible reduction or elimination of projected ESPC savings. When ECP savings are eliminated or greatly reduced, a buyout may be required. It is recommended that the base programming function include the cost of the ECP buyout on the Department of Defense form (DD) 1391, **Military Construction Project Data**. Before proceeding with any ESPC project in MFH, coordinate with the MAJCOM housing office and the Office of the Civil Engineer, Housing Division (ILE/ILEH) to identify and eliminate any potential conflict with current or planned MFH projects.

A3.2. Additions to this list are encouraged; see paragraph 10 for POC information.

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