Energy Savings Performance Contracting
Guidelines for State Agencies

Part 4
For The Contractor: Technical, Cost, and Savings Criteria

This document provides guidance and requirements for preparing energy and water and financial calculations. The Utility Assessment Report (UAR) must be reviewed by an independent third party engineer licensed in Texas before the Contract can be finalized. The Measurement & Verification Plan (M&V Plan) and Sample Periodic Utility Project Savings Report and the Contract must also be reviewed by an independent third party before execution.

Energy Services Company (ESCO) project reports should include an UAR, and may include an M&V Plan and a Sample Periodic Utility Savings Report. Project descriptions and calculations should be presented in the UAR following the prescribed format in this document.

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Utility Assessment Report (UAR)

Technical Analyst Qualifications and Responsibilities

Reports identifying and analyzing prospective utility cost reduction projects must be clear, concise, objective, and technically sound. The UAR identifies and documents project costs and savings. This report becomes a part of the Contract and must be reviewed by an independent third party engineer licensed in Texas before the Contract can be approved.

The technical analyst who prepares the UAR must:

- have extensive knowledge of energy and water-using systems found in institutional and commercial buildings, a working knowledge of energy efficient retrofits utilizing state-of-the-art technologies, and a specific understanding of building operation and maintenance procedures;
- be experienced in conducting energy and water analyses identifying energy and water efficient retrofit projects in institutional or commercial buildings and in preparing comprehensive reports on the findings;
- be involved in on-site work to gather project data; have a working knowledge of the building(s) and its energy and water-using systems; direct or perform all aspects of the data collection, project selection, analysis, cost estimation; and provide final recommendations for the project; and
- be knowledgeable in M&V techniques and protocols.

Costs of Utilities

Existing rate schedules applicable to each facility must be used, unless it is known that a significant change in rates will take effect within six months after the date of the UAR. The performance contractors must include a copy of the current or pending rate schedule in an appendix. One should use actual demand, fuel costs, and power factor penalties, where applicable, in savings calculations. A rate reduction may be considered as a valid energy and water cost savings[1] and allowable if and only if it is directly tied to some component of the project and does not include other nonrelated restrictions. To qualify, a rate reduction must be a direct result of new equipment or some other system modification.

Utility Cost Reduction Measure (UCRM) Related Operation and Maintenance Recommendations

Operation and Maintenance (O&M) cost savings associated with a UCRM may be included as part of a utility retrofit project, provided that these savings indicate a direct reduction within an Owner's maintenance and operating budget (i.e., savings based on reduced labor requirements must show an accompanying reduction in the Owner's labor budget). Any savings used to justify a project under the Texas Government Code must be guaranteed. Factors affecting those savings must be contractually fixed.

[1] Because the Texas Legislature now requires water conservation, for the purposes of this document, the term "utility" refers to: electricity, gas, thermal or other energy resources, water, and wastewater.

A fairly simple two-part test can be applied to determine if O&M savings can be used to offset the costs of a project under the Government Code §2166.406: Can the actual annual savings be verified? If the answer is "yes," the follow-up question is: If the O&M savings do not occur, will the Contractor reimburse the customer for the savings shortfall (considering O&M baseline analysis)? If the answer to *both* questions is "yes," then it is appropriate to use these savings to justify the project. If the answer to *either* question is "no," then the savings are not appropriate.

Utility Cost Reduction Measure Implementation Costs

A budget for the installation of each UCRM must be included in the UAR. Implementation cost estimates should be as detailed as practical and conform to the documentation outline discussed below. The cost estimate shall be provided for each individual UCRM and must state a total cost which includes equipment, materials, labor, subcontracts, design/engineering, administration/ project management, monitoring and any contingency funds included in the project budget. Known planned repairs or maintenance, other than routine operations and maintenance, must be included in the costs of the Contract, if such interim repairs, rebuilds, or maintenance must be accomplished in order for the UCRM to achieve the savings credited to the Contract.

The implementation costs must also include the removal and proper disposal of materials and equipment to be replaced under this Contract in accordance with the Owner's direction. These materials would include, but not be limited to, items such as lamps, ballasts, switches, controls, heating, ventilating and air-conditioning equipment (HVAC), pumps, fans, blowers, piping, valves, conduit, wiring, and boilers. Asbestos abatement, if necessary, is also included.

Use of Computer Programs for Energy and Water Savings Calculations

The technical analyst may use a computer program to analyze a UCRM, but the program should not be substituted for the procedure itself. The analyst must be able to submit computer programs utilizing clearly identified energy and water calculation procedures for review. The following energy use simulation programs are suggested by SECO: Carrier E20, Trane Trace, ASEAM, Blast, DOE-2, and Visual DOE.

To summarize, analysts are encouraged to calculate energy and water savings manually, using simplified energy and water calculation methods based upon accepted engineering procedures, such as those recommended by the American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ASHRAE) and Illuminating Engineering Society of North America (IES). These basic calculations should be presented in a concise, logical sequence. If the analyst elects to use a computer program or spreadsheet to calculate energy and water savings, simplified energy and water calculation methods must be identified, and the printouts and solutions should be clearly marked and self-explanatory.

Compliance With All Relevant Federal, State, and Local Codes and Regulations

The Contractor must meet all relevant Federal, State, and local codes or regulations in effect at the time of contract execution and shall be held responsible for knowing and meeting such requirements. This will be a contractual requirement.

Minimum Equipment Efficiency

All equipment purchased under an ESPC must meet or exceed all applicable state and local codes, at the time of contract execution, and must meet or exceed the equipment efficiency standards as embodied within the current ASHRAE/IES Standard.

Calculation Procedures

Calculation methodologies are expected to be consistent with ASHRAE standards.

Documentation of Project Assumptions

It is also the responsibility of the analyst to document any and all assumptions made with regard to estimated implementation cost and cost savings. These assumptions must be clearly identified to assist the reviewer in determining the validity of the individual UCRM. For example, if the retrofit work requires disruption to an occupied space, the analyst should state that the cost estimate is based on the work performed after hours or on weekends at a premium rate. If the analyst assumes that the Owner will vacate a given area for the retrofit work to be done, this should be clearly noted. The same is true for assumptions made with regard to equipment run time when calculating potential energy and water savings. All of the assumed run times, setbacks, 24-hour operations, etc. should be summarized under this section, to call attention to the fact that important decisions are based upon the validity of these assumptions.