Model Investment Grade Audit Agreement

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INSTRUCTIONS FOR USE OF

MODEL INVESTMENT GRADE AUDIT AGREEMENT

FOR COMPREHENSIVE PROJECT

UNDER BOTH

225 CMR 10.00 AND 225 CMR 19.00

Disclaimer

This document is a model Investment Grade Audit Agreement (IGA) with provisions to use in procuring Energy Management Services (EMS) for comprehensive projects under 225 CMR 10.00 or 225 CMR 19.00. The information contained within is general and subject to change. The document is not intended to provide legal advice; it is intended to serve as an introduction to the elements pertaining to the development of an EMS project and should not be used as a substitute for a thorough analysis of facts and the law. When procuring for EMS, it is the sole responsibility of each governing body to consult with legal counsel in preparing any documents and to ensure compliance with all applicable federal, state, and local laws, rules, regulations, and procurement procedures.

The users of this document are strongly encouraged to search actively for the most recent updates of governmental regulations. Readers may check for recent updates to Energy Management Services at www.mass.gov/doer or by calling (617) 626-7305.

**ACKNOWLEDGEMENTS**

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This document is a model Investment Grade Audit Agreement (IGA) with provisions to use in procuring Energy Management Services under 225 CMR 10.00 and 225 CMR 19.00. It is a stand-alone contract for design and engineering services to identify a package of measures for implementation through an EMS contract in which efficiency savings pay for the cost of the project.

Typically, the cost of the audit is based on the square footage to be audited as well as the type of facility and the complexity of the energy-using systems. The cost of the audit contract can be rolled-into the energy performance contract and paid through the guaranteed efficiency savings just like other measures. If the ESCO cannot identify projects that meet the client’s pre-established financial guidelines, typically, there will be no cost for the audit (need to review negotiated terms)

The audit contract further establishes guidelines for the project created in the RFP or RFQ: maximum financing term, eligible revenue streams, guarantee requirements, etc. A baseline of energy use is established as a benchmark for determining savings after the retrofits, the maximum markups (provided in the proposal) and fees to be charged by the ESCO are itemized.

Measurement and verification standards are detailed, along with the required measurement and verification plan. A commissioning plan is also laid out. The ESCO will identify potential projects based on opportunities to achieve efficiency and cost savings that meet the client’s needs – an iterative process between the ESCO and the client is critical to establishing the potential projects. A package of retrofit measures will be presented in terms of projected annual guaranteed efficiency savings that meet or exceed annual financing payments.

When procuring for EMS, it is the sole responsibility of each governing body to consult with legal counsel in preparing any documents and to ensure compliance with all applicable federal, state, and local laws, rules, regulations, and procurement procedures.

1. Use this model IGA as a foundation for the contract. The document is intended as guidance to ensure compliance with the statute and the regulation.
2. File the signed agreement electronically with DOER fifteen days after contract is executed. To file competitive solicitation documents, contracts, and annual reports with the DOER, email one complete electronic copy to: [EMS.DOER@state.ma.us](mailto:EMS.DOER@state.ma.us) and mail one complete copy to:

Massachusetts Department of Energy Resources  
Attn: **NOTIFICATION OF EMS PROCUREMENT**  
100 Cambridge St., Suite 1020  
Boston, MA 02114

The Model IGA begins on the next page.

This Energy Audit Agreement(“Agreement”) is made and entered into this \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (“ESCO”) and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (“Awarding Authority”) for the purpose of an Investment Grade Energy Audit (IGA) and project development services to identify economically feasible energy and water conservation measures to improve thermal efficiency, conserve energy and water, reduce waste water (“ECM”), and, when specified, generate electrical power at Awarding Authority properties.

This Agreement is entered pursuant to a [Request for Proposal or Request for Qualifications (“RFP/RFQ”)] issued by the Awarding Authority dated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 20\_\_, and any changes thereto, and ESCO’s response to said RFP/RFQ and any revisions thereto (“Response”). A product of this Agreement shall be an energy audit and report, which, together with all related drawings, plans and revisions shall become the specifications for work to be performed by the ESCO under a separate energy management services contract (“Contract”) to be executed *after* the acceptance by the Awarding Authority of the final Energy Audit Report.

This Agreement is coterminous with the Contract.

**Section 1: Services**

The ESCO agrees to provide an “IGA” for the projects at the facility in accordance with Exhibit A: Scope of Audit. The services shall include a detailed energy audit presenting the optimized project including long-term sustainable energy efficiency and infrastructure upgrades commercially acceptable to the Awarding Authority. In the determination of ECMs, the ESCO agrees to assume full responsibility to identify all requirements to execute such ECMs.

The Awarding Authority agrees to assist the ESCO in its performance of the IGA services and provide full and accurate information. The ESCO will assess the validity of the information provided and confirm or correct the information as needed

**Section 2: Provisions**

2.1 Price

Within one hundred and twenty (120) days after submission of the Final Energy Audit Report, the Awarding Authority will compensate the ESCO, as payment for the Energy Audit, the sum of \_\_\_\_\_\_ dollars ($), subject to the following conditions:

1. The Energy Audit is accepted by the Awarding Authority, and
2. A Contract is not executed between the ESCO and the Awarding Authority.

The compensation provided by this Agreement is subject to the continued availability of the Agreed Price and annual appropriations.

The Awarding Authority reserves the right to reject the Energy Audit Report, 1) if the energy or water savings cannot be attained or do not meet the Awarding Authority’s terms in the solicitation; 2) if the project does not contain a package of ECMs which, if implemented, will be able to provide the Awarding Authority with cash savings sufficient to fund payments of all annual costs and fees associated with the contract, including any annual fees to the ESCOs (less any third-party rebates or incentives or cash payment the Awarding Authority may choose to contribute); or, 3) the Awarding Authority, upon review of the Energy Audit, finds it deficient or unacceptable, provided ESCO shall have fifteen (15) business days to revise the Energy Audit to the satisfaction of the Awarding Authority.  
  
Analysis will be based on ESCO or other third-party proposed financing terms over a period not to exceed twenty years or less, with a fixed rate of interest actually available to the Awarding Authority.

2.2 Terms

1. All recommended conservation measures shall meet all current codes including the State Sanitary Code, Plumbing and Fuel Gas Codes, Fire Prevention Regulations, Massachusetts Electrical Code, State Building Code and any other applicable requirements of federal, state, and local government. The ESCO will not be expected to resolve any existing code violations but shall make a best effort to report to the Authority if any such violations are found.
2. The ESCO and its subcontractors, employees, and agents shall secure and maintain in force any permits and licenses required by law in furnishing the audit services.
3. The ESCO shall furnish competent personnel consistent with ESCO’s Response to the RFP/RFQ to assure professional and technical accuracy and to obviate a detailed review by the Authority.
4. The ESCO shall not specify equipment that will require additional personnel to be hired by the Authority for operation or maintenance. ESCO, to the maximum extent feasible and consistent with the optimization of conservation measures, shall specify similar or comparable equipment of the same manufacturer at each building and property in order to achieve as much standardization of equipment as possible throughout the Authority.
5. The ESCO shall explore and report alternative utility rate options such as peak or master metering, commodity purchases or other more favorable rate possibilities and ascertain any needed capital improvements and costs and determine the economic and operating feasibility.
6. The Awarding Authority may retain an energy consultant to assist in the technical, financial and commercial management of the audit service. The ESCO will work collaboratively with the energy consultant as directed and shall provide all necessary documentation, in a form satisfactory to the consultant (such as MS Excel) in support of the review of the services.
7. The ESCO agrees that it will not engage in unlawful discrimination in employment of persons because of race, color, religious creed, national origin, ancestry, handicap, marital status, veteran status, age, sexual orientation, or sex.
8. The laws of the Commonwealth of Massachusetts shall govern the terms and conditions of this Agreement. If any term, condition, or provision of the Agreement is held invalid, void, or unenforceable, the remaining provisions will continue in full force and effect.

2.3 Schedule

Within one (1) week of the date of execution of this Agreement, the ESCO shall submit an audit project schedule with the following milestones:

1. Pre-audit review kickoff meeting date;
2. Site visit dates;
3. Preliminary recommendations and optimization presentation; and,
4. Final audit submittal date.

**Section 3: Patent and copyright responsibility**

The ESCO agrees that any material or design specified by the ESCO or supplied by the ESCO pursuant to this Agreement shall not knowingly infringe any patent or copyright, and the ESCO shall be solely responsible for securing any necessary licenses required for patented or copyrighted material utilized by the ESCO in the performance of the Energy Audit and preparation of the Report

**Section 4: Ownership and reuse of documents**

The original of all documents, drawings, calculations, test results, recommendations, technical specifications, renderings, exhibits, models, prints, photographs, or other materials prepared by the ESCO shall be and remain the property of the customer, provided the ESCO is compensated under this agreement (the cost of the audit is paid or an EMS contract is reached).

To the extent that use of Intellectual Property is required for the Awarding Authority to receive the benefits of the audit services, the ESCO will grant a perpetual, royalty-free and fully paid, irrevocable license to use such property. Any use by the Awarding Authority or its energy consultant without the ESCO’s involvement is prohibited.

**Section 5: Termination**

The Awarding Authority may terminate this Agreement with or without cause upon 10 days written notice. In the event of such termination without cause the Awarding Authority shall pay the ESCO, within 30 days, the full reasonable value of its services (including direct and indirect cost, expenses, overhead, and profit) not to exceed $\_\_\_\_\_\_. Upon receipt of the notice, the ESCO shall stop all work.

The ESCO may terminate this Agreement with or without cause upon 30 days written notice. The Awarding Authority will not compensate the ESCO for any services and the ESCO is not obligated to provide the Awarding Authority with any audit services.

If the ESCO refuses or fails to perform any of the provisions of this Agreement in a timely manner and with such diligence as will ensure its completion within the time specified in this contract, the Awarding Authority shall notify the ESCO in writing of the non-performance, and if not promptly corrected within 15 days, the Agreement will terminate.

If after notice of termination of the ESCO’s right to proceed under the provisions of this clause, it is determined for any reason that the ESCO was not in default under the provisions of this clause, or that the delay was excusable, the rights and obligations of the parties shall be the same as if the notice of termination had not been issued.

**Section 6: Liability and Indemnification**

The ESCO hereby assumes the entire responsibility and liability for injury to or death of any person and for property damage caused by neglect on the part of the ESCO or any of the ESCO’s subcontractors, consultants, agents or anyone directly or indirectly employed by any one of them whose acts may be answerable. Such liability shall not extend to injuries or death caused by neglect on the part of the Awarding Authority. The ESCO is responsible for any property damage resulting from neglect, misconduct, non-execution of the work, defective work, or materials in the execution of the audit.

The ESCO agrees to indemnify and hold harmless the Awarding Authority, including its agents, employees, and representatives against claims, damages, losses, and expenses (including attorney fees) caused by performance of the work. The indemnification shall not be limited on the amount or type of damages, compensation, or benefits payable by or for ESCO or subcontractor under the Worker’s Compensation Acts, disability benefit acts or other employee benefit acts.

The ESCO shall, at all times during the agreement, maintain in full force and effect adequate commercial general liability insurance and property damage insurance, as well as workmen’s compensation and employer’s liability insurance pursuant to the State insurance requirements as defined below. Before commencing any work under this agreement, the ESCO shall file with the Awarding Authority certificates of insurance evidencing the coverage’s as specified below. The certificates shall contain the following express obligation:

COVERAGE LIMITS OF LIABILITY

Standard Workers’ Compensation: Statutory

Employers’ Liability: $500,000

Bodily Injury: $2,000,000 each occurrence (except automobile)

$4,000,000 aggregate

Property Damage: $2,000,000 each occurrence (except automobile)

$4,000,000 aggregate

Automobile Bodily Injury: $2,000,000 each person

$4,000,000 each occurrence

Automobile Property Damage $2,000,000 each occurrence

Excess Umbrella $2,000,000 each occurrence

The Awarding Authority shall be named as an additional insured under the liability and automobile insurance. The general liability insurance policy should contain a broad form general liability endorsement. The insurance shall include provisions preventing cancellation without 30 calendar day prior written notice, by certified mail to the Principal Representative

The ESCO shall be responsible for all claims, damages, losses or expenses, including attorney’s fees, arising out of or resulting from the performance of the services contemplated in this agreement, provided that any such claim, damage, loss or expense is caused by any negligent act, error or omission of the ESCO, any ESCO or associate thereof, or anyone directly or indirectly employed by the ESCO.

**Section 7: CORI Clearance Requirements**

In accordance with M.G.L. c.71, §38R, the Awarding Authority may request and obtain all available criminal offender information (“CORI”) from the Criminal History Systems Board of any contractor, subcontractor, agent, employee, or consultant who may have direct contact with children. The ESCO shall require all individuals involved in the provision of audit services to complete and sign a Request Form to obtain CORI.

**Section 8: Entire Agreement**

This Agreement, the ESCO proposal, and the exhibits listed below constitute the entire agreement among the parties and may be amended only by a written amendment executed by both parties. In the event of any conflict between this Agreement and any attachments or referenced documents, this Agreement shall control.

**[List all exhibits and attachments]**

Exhibit A: Scope of Work

Exhibit B: Pricing and Cost

THIS AGREEMENT IS ENTERED INTO THIS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ESCO] [MUNICIPALITY]

By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[MUNICIPAL AGENCY]

By \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Approved as to Form:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Office of General Counsel

**Exhibit A: Scope of Work**

The purpose of the IGA is to provide an investment-grade audit that quantifies the size, scope, payback, and firm cost for each ECM that may be financed through the Contract. Execution and approval by the Awarding Authority of this Agreement shall serve as a Notice to Proceed.

The approved Investment Grade Audit Report will be used as Attachment X: *Scope of Work*. The Project Proposal is the basis for the Proforma, which will be used in Schedule ­­­­­ : *Final Project Cost and Project Cash Flow Analysis of the EMS Contract.*

The ESCO shall commence preparation of the Energy Audit in sufficient time to meet the following schedule:

|  |  |
| --- | --- |
| Site visits | As needed and scheduled with Awarding Authority |
| Draft Energy Audit submitted |  |
| Authority review draft |  |
| Energy Audit submitted |  |
| Energy Audit accepted or rejected |  |

The deadline for an acceptable Energy Audit shall be no later than **4:00 PM**, on **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 20\_\_**. After this date, the Awarding Authority may terminate this Agreement upon written notice to ESCO, and all drafts, plans, materials, calculations, specifications, and draft Energy Audits may be retained by the Authority as liquidated damages.

1. General Scope

The ESCO will:

1. Conduct and report on detailed site surveys of all property listed in RFP/RFQ Facility Profile, including all utilities identified for conservation measures and all energy and water systems and identify the size, scope, and payback of energy conservation measures by a documented analysis of various conservation opportunities.
2. Inspect a random sampling of items (e.g. toilets, lamps, or other equipment) in sufficient detail to ensure a statistical level of confidence to guarantee the capital cost and performance of the work. ESCO shall utilize all available resources such as construction documents, equipment manuals, maintenance records, and interviews of persons familiar with each property and its operations.
3. Examine all utility data to check for accuracy against actual bills and data printouts in order to confirm that baseline data is accurate & complete; document baseline and projected utility data for use in the performance guarantee of the Contract. The accuracy of the baseline consumption, savings projections, and capital budget are of the essence of this Agreement and the subsequent Contract.
4. Present a thorough description of each recommended conservation measure including, but not limited to, conceptual summary, equipment and material specifications, plans, schematics or detail sketches as appropriate, cost, useful life, savings in utility consumption and expense, maintenance and operating expenses, assurances that the original design performance shall be maintained throughout the useful life of the equipment and systems installed, monitoring requirements, impact, if any, of each measure on the buildings, other building systems and occupants, and payback. This information shall be prepared consistent with the RFP/RFQ and with Facility Profile.
5. Summarize any conservation measures that are rejected and state the reasons for rejection. The ESCO shall be prepared to provide backup data, calculations, and other information as requested by the Authority but need not include this detail in the Energy Audit.
6. Prepare a detailed operational plan showing the sequence of operations for the work to be performed.
7. Prepare sufficient design, plans, equipment, material and other detail suitable as specifications for work to be performed under the subsequent Contract, and,
8. Guaranteed Savings Calculations
9. Annual guaranteed energy and cost savings is required for the entire financing term. The guarantee is based on cost savings attributable to all energy saving measures, and must equal or exceed all project costs each year during the contract period. Annual project costs include debt service, ESCO fees, maintenance services, monitoring services, and other services.
10. Excess savings or annual cost savings beyond the guaranteed minimum savings will be retained by Awarding Authority, and will not be allocated to shortfalls in other years.
11. The annual savings for all measures must be estimated for each year during the contract period.
12. Allowable Cost and Savings Factors
13. Allowable payment sources:
14. Energy and water cost savings.
15. Material/commodity savings, including scheduled replacement of parts.
16. Outside labor cost savings, including maintenance contracts. Any savings related to maintenance and operation of the facilities will be limited to those that can be thoroughly documented.
17. Negotiable payment sources:
18. Offset of Awarding Authority future capital cost
19. Outside incentive funds (utility incentives, grants, etc.)
20. Escalation rates for natural gas, electricity, water, and material/commodity cost savings. These are rates used in cash flow projections for project development purposes. *NOTE: Use historical data and/or federal government guidelines on utility escalation rates to ensure reasonableness.*
21. Interest rates (municipal tax-exempt rates for public institutions)
22. Awarding Authority cash outlay (at Awarding Authority’s sole discretion)

The markup costs presented in Exhibit B will be used in the Technical Energy Audit and subsequent Contract.

1. Existing Conditions

The ESCO will document the existing conditions of the facilities, including the following information itemized for each building included in the project:

1. Building physical condition;
2. Hours of use or occupancy;
3. Square footage by facility including area of conditioned space; area of unconditioned space;
4. Inventory of energy consuming equipment or systems;
5. Energy consuming equipment operating conditions and loads;
6. Standards of service and comfort observed (e.g. light levels, ventilation, and temperatures);
7. Utility company invoices;
8. Current practices that unnecessarily increase energy use or impact baseline;
9. Drawings, as available (may include mechanical, plumbing, electrical, building automation and temperature controls, structural, architectural, modifications and remodels);
10. Operating engineer logs, maintenance work orders, etc., as available;
11. Records of maintenance expenditures on energy-using equipment, including service contracts;
12. Description of energy management procedures utilized on the premises;
13. Description of any energy-related improvements made or currently being implemented;
14. Description of any changes in the structure of the facility or energy-using or water-using equipment;
15. Description of future plans regarding building modifications or equipment modifications and replacements;
16. Original construction submittals and factory data (specifications, pump curves, etc.), as available;

The Awarding Authority agrees to work diligently to furnish the ESCO accurate and complete data and information as available. Where information is not available, the ESCO will make a diligent effort to collect such information through the facility inspection, staff interviews, and utility companies.

The ESCO agrees to work diligently to assess validity of information provided and to confirm or correct the information as needed.

1. **Facility Inspections**
2. Interview the facility manager, maintenance staff, and occupants of each building regarding:
3. Facility operation, including energy management procedures;
4. Equipment maintenance problems;
5. Comfort problems and requirements;
6. Equipment reliability;
7. Projected equipment needs;
8. Occupancy and use schedules for the facility and specific equipment; and,
9. Facility improvements past and planned.
10. Survey major energy-using equipment, including;
11. Lighting (indoor and outdoor);
12. Heating and heat distribution systems;
13. Cooling systems and related equipment;
14. Automatic temperature control systems and equipment;
15. Air distribution systems and equipment;
16. Outdoor ventilation systems and equipment;
17. Exhaust systems and equipment;
18. Hot water systems;
19. Electric motors, transmission and drive systems, special systems (kitchen/dining equipment, etc.);
20. Renewable energy systems;
21. Other energy using systems; and,
22. Water consuming systems (restroom fixtures, water fountains, irrigation systems, etc.).
23. Perform "late-night" surveys outside of normal business hours or on weekends to confirm building system and occupancy schedules, if deemed necessary.
24. Develop a preliminary list of potential energy and water saving measures, with consideration of the following for each system:
25. Comfort and maintenance problems;
26. Energy use, loads, proper sizing, efficiencies and hours of operation;
27. Current operating condition;
28. Remaining useful life;
29. Feasibility of system replacement;
30. Hazardous materials and other environmental concerns;
31. Awarding Authority’s future plans for equipment replacement or building renovations;
32. Facility operation and maintenance procedures that could be affected; and,

The Awarding Authority will allow the ESCO reasonable access to facility staff to ensure understanding of existing systems and opportunities. The ESCO will work diligently to assess validity of information provided and confirm or correct the information as needed.

1. **Establish Baseline Consumption**
2. The ESCO will establish base year consumption by examining utility bills for the past three years for electricity, gas, steam, water, etc. Present base year consumption in terms of energy units (kWh, kW, CCF, Therms, gallons, or other units used in bills), in terms of dollars, and in terms of dollars per square foot. Describe the process used to determine the base year (averaging, selecting most representative contiguous 12 months, etc.). Consult with facility personnel to account for any anomalous schedule or operating conditions on billings that could skew the base year representation. The ESCO will account for periods of time when equipment was broken or malfunctioning in calculating the base year.

1. The ESCO will estimate loading, usage and/or hours of operation for all major end uses of total facility consumption including, but not limited to:
2. Lighting
3. Heating
4. Cooling
5. Motors (fans and pumps)
6. Plug loads
7. Kitchen equipment
8. Other major energy and water using equipment.

Where loading or usage are highly uncertain (including variable loads such as cooling), the ESCO will use its best judgment, spot measurements or short-term monitoring. The ESCO should not assume that equipment run hours equal the operating hours of the building(s) or facility staff estimates.

1. The ESCO will reconcile annual end-use estimated consumption with the annual base year consumption. This reconciliation will place reasonable “real-world” limits on potential savings.
2. The ESCO will propose adjustments to the baseline for energy and water saving measures that will be implemented in the future.
3. **Develop Preliminary Audit Analysis**

1. List all potential opportunities, whether cost-effective or not;
2. Identify measures that seem likely to be cost effective and therefore warrant detailed analysis. Present ECMs in the order that interactions are considered;
3. For each measure, prepare a preliminary estimate of energy or water cost savings including description of analysis methodology, supporting calculations and assumptions used to estimate savings.

Present preliminary findings prior to thorough analysis. Describe how the projected project economics meet the Awarding Authority’s terms for completing the Technical Energy Audit and Contract. Discuss assessment of energy use, savings potential, project opportunities, and potential for developing an energy performance contract. Develop a list of recommended measures for further analysis. The Awarding Authority shall have the option to reject calculations of savings, potential savings allowed, or project recommendations.

1. **Conduct comprehensive detailed enerGy audit analysis**

In analyzing the savings and costs for each energy and water measure, the ESCO will:

1. Follow the engineering principle(s) and methodologies to calculate energy and water savings consistent with ASHRAE or other nationally-recognized authority;
2. Consider technologies in a comprehensive approach including, but not limited to: lighting systems, heating/ventilating/air conditioning equipment and distribution systems, controls systems, building envelope, motors, kitchen equipment, pools, renewable energy systems, other special equipment, irrigation systems, and water saving devices as requested by the Awarding Authority;
3. Utilize assumptions, projections, and baselines that best represent the true value of future energy or operational savings, including: accurate marginal costs for each unit of savings at the time the audit is performed; documentation of material and labor cost savings; adjustments to the baseline to reflect current conditions at the facility; and, calculations that account for the interactive effects of the recommended measures;
4. Use best judgment regarding the employment of instrumentation and recording durations so as to achieve an accurate and faithful characterization of energy use; and,
5. Develop a preliminary measurement and verification plan for each measure based on the Awarding Authority’s preference.
6. **Prepare a draft Technical Energy Audit Report.**

To provide an engineering and economic basis for negotiating a Contract between the Awarding Authority and the ESCO, the report shall include:

1. **Overview**
2. Summary table of recommended energy and water saving measures, with itemization for each measure of total design and construction cost, annual maintenance costs, the first year cost avoidance (in dollars and energy units), simple payback and equipment service life;
3. Summary of annual energy and water use by fuel type and costs of existing or base year condition;
4. Calculation of cost savings expected if all recommended measures are implemented, and total percentage savings of total facility energy cost;
5. Description of the existing facility, mechanical and electrical systems;
6. Summary description of measures, including estimated costs and savings for each;
7. Discussion of measures considered but not investigated in detail;
8. Discussion of utility rebates, school building aid, or other rebate and incentive options; and,
9. Conclusions and recommendations
10. **Facility Profile**
11. Description of facilities;
12. Size of each facility;
13. Facility use;
14. Occupancy schedule;
15. Original construction date;
16. HVAC system
17. Controls; and,
18. Other major equipment.
19. **Base year energy use**

1. Description and itemization of current billing rates, including;
2. Schedules;
3. Energy type;
4. Native units (kWh, gals, etc.);
5. Average price per unit;
6. Marginal price per unit, if applicable;
7. Effective date of prices; and,
8. Monthly listing for rates that vary.
9. Summary of all utility bills for all fuel types and water;
10. Base year consumption and description of how established;
11. Reconciliation of estimated end use consumption (i.e. lighting, cooling, heating, fans, plug loads, etc) with base year (include discussion of any unusual findings);
12. **Full description of each energy and water saving measure including**:
13. Existing conditions;
14. Recommended equipment and how it will function;
15. Operation and maintenance procedures affected by installation/implementation;
16. The plan for installing or implementing the recommendation;
17. Savings calculations
18. Base year energy use and cost;
19. Post-retrofit energy use and cost;
20. Savings estimates including analysis methodology, supporting calculations and assumptions used;
21. Annual savings estimates (the cost savings for all energy saving measures must be estimated for each year during the contract period and savings must be achieved each year, not reported as average annual savings over the term of the contract);
22. Percent cost-avoidance projected;
23. Description and calculations for any proposed rate changes
24. Explanation of how savings interactions between ECMs is calculated;
25. Operation and maintenance savings, including detailed calculations and description;
26. If using computer simulation, include a short description and state key input data. The Awarding Authority will require a hardcopy of printouts and electronic documentation of the analysis conducted; and,
27. If using manual calculations, formulas, assumptions and key data shall be stated. The Awarding Authority will require a hardcopy of printouts and electronic documentation of the analysis conducted.
28. Cost estimates and avoided costs

The ESCO will provide a detailed scope of the construction work needed, suitable for cost estimating. Include all anticipated costs associated with installation and implementation. Provide specifications for major mechanical components as well as detailed lighting and water fixture counts.

1. Engineering/design costs;
2. Contractor/vendor estimates for labor, materials, and equipment; include special provisions, overtime, etc., as needed to accomplish the work with minimum disruption to the operations of the facilities;
3. Permit costs;
4. Construction management fees;
5. Environmental costs or benefits (disposal, avoided emissions, handling of hazardous materials, etc.);
6. Financing costs; and,
7. Avoided costs including utility or other rebates, subsidies, and or third-party aid.
8. Other
9. Estimate of average useful service life of equipment
10. Preliminary commissioning plan
11. Impacts that the facility would incur after contract ends. Consider operation and maintenance impacts, staffing impacts, budget impacts, etc.; and,
12. Compatibility with existing systems.
13. Rebates, subsidies, and Incentives

Provide a detailed discussion of the ESCO’s plan to secure on behalf of, or in conjunction with the Awarding Authority, all available rebates, subsidies and third-party aid for each ECM and the over project. Discuss which rebates, subsidies and/or third-party aid the ESCO will guarantee and whether any additional rebates, subsidies and/or third-party aid will accrue to the benefit of the Awarding Authority.

1. Measurement and Verification Plan

Provide a detailed description of the measurement and verification plan (following the Federal Energy Management Measurement and Verification Guidelines) and the approach employed for each ECM to demonstrate realized savings that are sustainable over the useful life of the ECM. The plan shall include definitions of terminology and the methods and procedures for reconciling the verified saving to the guaranteed savings.

1. Financial Summary

Provide a cash flow analysis listing the annual energy, water, and O&M savings, the annual lease payments, and the annual M&V, maintenance, and other costs, any rebates and/or third-party aid, and the net annual cash flow. List interest rate and applicable energy cost escalation rates.

1. Appendices

Complete appendices that document the data used to prepare the analyses, including a description of how data were collected.

1. **Optimize IGA**

The ESCO will meet with the Awarding Authority and present the technical and economic findings of the IGA. Such meeting will enable the Awarding Authority to collaborate on optimizing the ECM selection based on its requirements and preferences. Upon completion of the optimization process, the ESCO shall update and revise the IGA to reflect the optimized EMS project, including an updated financial summary as described above.

1. **ECM Installation Schedule**

For each ECM provide a proposed implementation schedule. Include the following milestones:

1. Design completed;
2. Permits;
3. Submittals (plans and specifications);
4. Equipment/Material acquisition;
5. Mobilization;
6. Installation;
7. Clean up;
8. Startup/Testing;
9. Final inspection
10. Post installation submittals; and,
11. Training.
12. **Prepare Contract Terms**

Using the Department of Energy Resources Model Contract, the ESCO will provide a listing of Contract terms necessary to facilitate Awarding Authority approval, including;

1. A list of energy conservation measures. Include a list of services that will be provided as related to each cost;
2. Expected term of the Contract.
3. Analysis of annual cash flow for the Awarding Authority during the Contract term;
4. Description of how the project will be financed including available interest rates and financing terms, based on interest rates likely available to Institution at this time, and based on a 60-day and 90-day lock option.
5. Explanation of how the savings will be calculated and adjusted due to weather (such as heating and cooling degree days), occupancy or other factors. Monitoring and verification methods must be consistent with the most recent version of the Federal Energy Management Program (FEMP) Measurement and Verification Guidelines.

Nothing herein obligates the Awarding Authority to enter into the Contract.

**Exhibit B: Pricing and Cost**

Project cost is the total amount the Awarding Authority will pay for the project and ESCO’s services. Costs must be competitive, reasonable, and consistent with maximum markups and fees. Costs may include but are not limited to: engineering, designing, packaging, procuring, installing (from Technical Energy Audit Report results); performance and payment bond costs; construction management fees; commissioning costs; maintenance fees; monitoring fees; training fees; legal services; overhead and profit; other markups. Responses to this section only will remain proprietary except to fulfill DOER filing requirements.

Maximum rates were established for in the initial response. Propose rates for this specific project that are equal to the stated maximum rates. All other guidelines presented in the RFP/RFQ for markups and fees shall apply.

**Table 1: Energy Efficiency Measure Summary**

Company Name:

Building or Facility Name:

(Aggregate data from summary sheets)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ECM No. | Energy Conservation Measure (ECM) | Electricity Savings (kWh/yr.) | Peak Demand Reduction (kW) | Fuel Savings (include units) | Energy Cost Savings ($/yr.) | Estimated Measure Cost ($) from Table 2 | Estimated Life of Measure (years) | Refer to Page(s) |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |
|  | Totals |  |  |  |  |  |  |  |

**Table 2**

**Summary Sheet for ECM Number \_\_\_\_\_\_\_**

Building:

Name of ECM:

1. Description (include quantities, types, sizes, locations, etc.

1. Existing Conditions:
2. Proposed Conditions with ECM:

2. Net First Year Energy Savings

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fuel Type (electric, gas, oil) | Fuel Units  (kWh, Therms, CCF, KW, gallons) | First Year Fuel Savings  (kWh, Therms, CCF, KW, gallons) | Unit Cost for the Fuel | Cost Savings |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Totals |  |  |  |  |

1. Cost Estimate Summary of Measure

Materials $

Labor $

Contingency $

Other (Specify) $

Total $

4. Expected useful life: years.

5. The measure interacts with ECM No(s)

6. The measure impacts ECM No(s)

1. Impact on standards of service and comfort.

**Table** **4: Price Formula**

For each item, enter the proposed price as a lump sum and as a percentage of construction cost.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4.1 | Energy Study Fee | $ | | | |  | | |
| 4.2 | Engineering, Design and Spec Services | $ | | OR | % | | % of Construction Cost | |
| 4.3 | Project Management Services | $ | | OR | % | | % of Construction Cost | |
| 4.4 | On-Site Construction Management | $ | OR | | % | | % of Construction Cost | |
| 4.5 | Commissioning | $ | OR | | % | | % of Construction Cost | |
| 4.6 | Training | $ | OR | | % | | % of Construction Cost | |
| 4.7 | Commissioning | $ | OR | | % | | % of Construction Cost | |
| 4.8 | Interest During Construction | $ | | AT | % | |  |
| 4.10 | P & P Bond | $ | | OR | % | | % of Construction Cost |
| 4.11 | Miscellaneous Fees  and Permits | $ | | OR | % | | % of Construction Cost |
| 4.12 | Term Financing Interest Rate |  | |  | % | | % of Principal (APR) |
| 4.13 | Monitoring, Verification,  and Savings Guarantee | $ | | OR | % | | % of Energy Savings |
|  | Total |  | | |  | |  | |
| 4.14 | Overhead |  | | |  | |  | |
| 4.15 | Profit |  | | |  | |  | |

**Table 5**

**Project Cost**

|  |  |  |
| --- | --- | --- |
| Installed Measure Cost |  |  |
| Energy Study Cost |  |  |
| Design Services |  |  |
| Construction/Project  Management Services |  |  |
| General ESCO Overhead and Profit |  |  |
| Commissioning and Initial Training |  |  |
| Interest During Construction |  |  |
| Bond Fees |  |  |
| Miscellaneous Fees and Permits |  |  |
| Other |  | Specify |
| Less Utility Rebate |  |  |
| TOTAL Project |  |  |

**Table** **6**

**Calculation of Cost Savings**

|  |  |  |  |
| --- | --- | --- | --- |
| Year | **Annual Energy Cost Savings**  **{A}** | **Total Payments**  **{B}** | **Net Savings**  **({C}={A}-{B})** |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |
| Total |  |  |  |

**Table 7**

**Payment Schedule and Termination Value**

|  |  |  |
| --- | --- | --- |
| **Year** | Contract Payments | **Total Payments** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |
| Total |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Year | **Termination Value** | **Total Payments from Above** | |
| **Date** | **Amount** |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |

Notes: Enter the date and amount of each payment. Show additional payments on another sheet if necessary. “Termination Value” is the lump sum payment required to buy out of the contract and receive title to all equipment in each year. If this option is not proposed in any year(s), indicate by “NA.”

### Form of Energy Audit Report

1. **Cover**
2. The cover page should provide the following information:
3. The words “Energy study for (the facility’s name)”
4. Name(s) and address(es) of the building(s) analyzed in the study
5. Name of the firm producing study
6. Date
7. **Table of Contents**

Provide a table of contents with page numbers and descriptive title for each section, table, exhibit, attachment, etc. Tables, charts, attachments, and exhibits should be listed separately by number, title and page number.

1. **Page Numbers and Revisions**

Each page should be numbered and dated. Should revisions be requested, a listing of original pages and replacement pages should be provided. Each revised page should indicate at bottom right corner “Revised--date."

1. **Executive Summary**

Provide a short (one or two page) narrative summary of the project, including discussion of the project’s energy savings and financing.

1. The following tables must be included:
2. A summary of ECM measures for the project [(Table 1);](#Table61)
3. A summary of the project cost [(Table 2);](#Table121)
4. Maintenance services provided by equipment covered, scope, frequency [(Table 3);](#Table111)
5. A cost savings calculation [(Table 4)](#Table123); and
6. A payment schedule [(Table 5)](#Table124)