



Negotiating an Energy and Water Audit Agreement

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Audit Agreement Negotiations

- Don't be Afraid to Negotiate Points with the ESCO
- Agree to Specific Deliverables
- Agree to Specific Timelines





What are the requirements of an energy audit on which you can base an energy performance contract?

- Audit agreements must require sufficient detail so that a technically competent adviser can review the analysis
- Audits must provide the utility cost and consumption data to construct representative consumption baselines
- Audits savings estimates must correctly account for how HUD will value savings from various measures
- A high-quality audit is the foundation for a high-quality project
- Expect to spend about 3% of the projected project cost for a quality audit





Costs of Audits

- Varies from Company to Company
- Cheaper isn't Always Better
- Economies of Scale
- Sampling Can Keep Costs Down
- 3% of Project Costs is Reasonable Estimate for Audit Costs





Timelines

- Varies with Size and Complexity of Facilities
- 60 to 120 Days
- Two Stages — Draft and Final Reports





Data for an Audit

- Testing, e.g. Combustion Analysis, Pressure Diagnostics
- Crawl Space to Attic
 - Visual inspection by well trained auditor is key component
 - Must document accurate picture of building
 - GIGO
- Representative Sampling is Okay for Most Things





What are the main data your audit should contain?

- Summary table of proposed energy and water measures with itemized estimates of the cost, annual savings, annual maintenance costs, simple payback, and service life for each measure
- Analysis and summary of utility consumption baselines
- Narrative descriptions of the proposed measures in sufficient technical detail to evaluate their performance potential, including any operation and maintenance implications
- Full description of analysis methodology, calculations, data inputs, and assumptions
- Documentation of any projected maintenance savings





Things to Watch Out For

- Problems Identified and Solutions Proposed
- Estimated Savings by Measure and in Total
 - Data input and output
- Itemized Cost Estimates by Measure
 - Be sure that annual fees not financed are included
- Financial Analysis by Measure and in Total
 - Simple payback, NPV, B/C, life-cycle costing





Audits - HUD's Role

- Approval Needed for Audit Agreement
- HUD Should Review Audit Results
- HUD's Savings and Rate Provisions Should Match Those in the Contract
 - E.g. If ESCo uses ratcheted rate, rather than blended rate, the savings to the HA will not be as projected





Sample Project Price Estimate

Section I	Energy Conservation Measures Subject to Competitive Procurement				Contingency @ 5%	Total Project Direct Costs
	ECM	Miscellaneous (Identify)	Equipment	Installation		
1 – Boiler Plant		218,026	420,322		31,917.4	670,265.4
4 – High Eff. Motors		2,588	1,700		214.4	4,502.4
6 – Lighting		62,172	83,766		7,296.9	153,234.9
8 – Attic Insulation		2,004	5,573		378.85	7,955.85
11 – Showerhead Restrictions		218	405		31.15	654.15
12 – VAV Conversion		8,480	7,995		823.75	1,728.75
15 – Laundry Equip. Upgrade		7,178	4,350		576.4	12,104.4
19 – Propane/Air System		70,800	36,116		5,345.8	112,261.8
A/E Design Fees	90,000				4,500	94,500
Misc. Fees, Permits, Etc.				5,000	250	5,250
TOTALS:	90,000	371,466	560,227	5,000	51,334.65	1,078,027.65

Project Installation Cost \$1,078,027.65

Section II

Company Design & Specification	46,322.85	Interim Construction Interest	63,219
Company Construction/Project Administration	98,138.04	Bond	6,300
Company Overhead	245,345.1	Commissioning & Initial Training	96,075
Company Profit	147,207.06	Audit Fee	39,947
		Total Not-To-Exceed Cost of the Work	<u>\$1,820,582</u>





What are reasonable project cost estimates for an energy performance contract project?

- Very small projects (i.e., less than \$300,000) and very large projects (i.e., over \$5,000,000) make these results of thumb not applicable
- Audit costs approximately 3% of standard AIA definition of Project Construction Costs (PCC)
 - Labor costs
 - Subcontractor Costs
 - Costs of Materials and Equipment
 - Miscellaneous costs, such as permits, bonds, etc.
 - Costs of temporary facilities, storage, etc.





What are reasonable project cost estimates for an energy performance contract project? (cont.)

- One time soft costs for design, construction management, overhead, profit, and commissioning average around 35–40% of PCC
- Ongoing annual fees are about 10–15% of PCC for training, maintenance, measurement, and verification





What are the biggest hurdles to getting a good audit?

- Missing or inaccurate data on utility consumption/cost
- Inaccurate data on building operations and building loads
- Inaccurate estimation of measure implementation costs
- Improper valuation of HUD eligible utility savings
- Inaccurate estimation of future maintenance costs

