HUD Field Office Review Procedure
Energy Performance Contracting

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INTRODUCTION

This procedure provides a consistent protocol by which the U.S. Department of Housing and Urban Development (HUD) field office reviews applications and monitors the implementation of an energy performance contract (EPC). The protocol addresses projects managed by Energy Services Companies (ESCOs) and by Public Housing Authorities (PHAs or HAs), and with projects using the Add-On Subsidy and Frozen Base incentives.

This procedure is divided into three parts:

Process Overview: A summary of the responsibilities, definitions, and steps that govern any type of EPC. Field offices should review this information first.

Review Guides: Step-by-step guides for ESCO- or PHA-managed projects. These instructions will assist field offices when reviewing and monitoring energy finance projects.

Worksheets: Sample forms and data collection sheets. Field offices may use these or provide them to PHAs when implementing an energy project.

Regulations and Resources

Regulations associated with this procedure include:

24 CFR 85.36 - Procurement Requirements
24 CFR 990 - Annual Contributions for Operating Subsidy, with particular emphasis on sections 24 CFR 990.107(f) and 24 CFR 990.110
24 CFR 965.308 - Energy Performance Contracts
24 CFR 943 – Consortiums/collaborations

Other resources include:

- HUD's Green Book, "Energy Performance Contracting for Public and Indian Housing: A Guide for Participants," February 1992, http://www.huduser.org/Publications/pdf /energy.pdf
- HUD's Energy Efficient Rehab Advisor, 2003, http://rehabadvisor.pathnet.org/index.asp
- HUD's "Energy Conservation For Housing – A Workbook," 1998
- HUD, "Utility Allowance Guidebook," 1998
- DOE, International Performance Measurement and Verification Protocols (IPMVP), 2001, http://www.ipmvp.org/
- ASHRAE Guideline 14-2002 – "Measurement of Energy and Demand Savings," http://www.ashrae.org

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PROCESS OVERVIEW

Since HUD's utility incentives were enabled in 1992, more than 70 housing authorities have completed energy-saving projects. These projects have generated guaranteed savings of over $25 million annually, enabling capital investments of more than $200 million.

Performance contracting is a useful way to finance and implement capital energy improvements and services. The energy and cost savings produced by the project must be sufficient to cover all project and repayment period costs, including construction, commissioning, financing, maintenance, measurement and verification, and staff and resident education. Projects may include any or all utilities (i.e., electricity, natural gas, fuel oil, propane, and water), and utilities may be PHA-paid or resident paid.

Utility financed projects can be completed in two ways: using a turn-key energy services company or in-house utilizing the authority's own staff capabilities and a qualified third party familiar with performance contracting. The most common approach is to use an energy services company.

> Energy-saving projects implemented since 1992 have generated guaranteed cost savings of over $25 million annually, enabling capital investments of more than $200 million.

Definitions

Energy Performance Contract (EPC) – An agreement that provides for the performance of services for the design, acquisition, installation, testing, operation, and where appropriate, maintenance and repair of energy conservation measures at one or more locations.

Energy Conservation Measure (ECM) – Physical improvement that results in improved energy or water efficiency, is life cycle cost-effective, and may involve cogeneration, renewable energy sources, or improved operation and maintenance.

Add-On Subsidy Incentive – A method for financing energy conservation measures where a housing authority requests additional subsidy eligibility to cover debt service and allowable project expenses for the term of the project.

Frozen Base Incentive – A method for financing energy conservation measures where a housing authority requests subsidy eligibility for its energy financed project using the three year rolling base consumption level (RBCL) in effect at the time of the project for the entire term of the project. For resident-paid utilities, allowance consumption levels are used.

Measurement & Verification (M&V) – A process of determining and reporting utility consumption and cost savings using engineering calculations, metering, utility bill analysis, and computer simulation.

Commissioning – The process of ensuring that systems are designed, installed, functionally tested, operated and maintained to accomplish a building or system's design intent.

Responsibilities

Housing authorities should work closely with their HUD field offices throughout the process to ensure common understanding of options, requirements, and outcomes. This interaction should begin during project planning and carry through into project repayment.

The HUD field office is responsible for reviewing the engineering and financial basis of energy finance projects, processing subsidy requests, and assuring regulatory compliance. The housing authority is responsible for submissions that comply with this procedure, HUD policy and guidance, and applicable federal regulations.

The field office review team will include an engineer and financial analyst, both of whom must review all required and supporting materials and make a joint response to the housing authority, as necessary, for clarification, additional information, and/or approval. Field office responsibilities are established per CFR 965.308(b).

Field Office	1. Reviews and approves the PHA's initial request to enter into an EPC. 2. Reviews and approves the final request to enter into an EPC. 3. Processes the initial and yearly financial incentive and/or adjustment through the operating fund. 4. Serves as a technical resource for all energy performance contracting issues.
PHA	1. Initiates and finalizes requests to HUD to enter into an EPC. 2. Develops procurement documents. 3. Ensures compliance with regulations. 4. Monitors implementation of the EPC. Ensures yearly oversight activities are completed as required and are well documented. Conducts due diligence. 5. Conducts proper record keeping.

Basic Steps

The performance contracting process using an ESCO follows these basic steps:

- Independently assess the project opportunity
- Issue a Request for Proposals (RFP) and select an ESCO
- Complete a detailed engineering study
- Negotiate an energy services agreement
- Implement and commission the project
- Monitor and verify the utility savings

In a self-managed project, the housing authority completes the same activities as a traditional performance contract using a qualified third party. Doing a program in-house requires these steps:

- Develop a preliminary energy project plan
- Complete a detailed energy study
- Complete a final energy project plan
- Implement and commission the project
- Monitor and verify the utility savings

A detailed engineering study, also known as an investment grade energy audit, is required when using HUD's utility incentives. The audit provides accurate estimates of available savings from high-efficiency equipment replacements, building upgrades and improved management systems. It also includes accurate estimates of project costs. Based on the audit results, a package of measures will be assembled that, when implemented, will generate cost savings sufficient to finance the measures installed.

Preparatory Steps

Housing authorities considering performance contracting should do their homework. Many HAs start the process without fully investigating its potential and fit to their agency's funding needs, staff capabilities or redevelopment goals. As a result, numerous requests for proposals have been issued that have not led to projects or the projects implemented have not generated the anticipated value to the housing authority.

Housing authorities, not the Department, assume the risk and obligation to pay debt service from energy financing and must ensure persistence of savings over the project term.

Housing authorities should form an internal working group to plan and implement the program. At a minimum, maintenance, modernization, finance, and the executive director or representative should participate throughout. The housing authority should contact its field office to discuss the authority's project options, program requirements, staff capacity and capability, and project risk.

Performance Funding Incentives

Regulations at 24 CFR 990 provide two different incentives – "frozen base" and "add-on" – to encourage energy conservation in public housing. Both incentives, summarized below, require housing authorities to obtain financing from non-federal sources to fund utility conservation measures. Both incentives require a housing authority to receive HUD field office approval.

Add-On Subsidy Incentive

When approved for the additional subsidy incentive (24 CFR 990.107 (f) (2)), the housing authority is provided additional subsidy eligibility to cover project expenses and debt service for the implementation of energy conservation measures. Operating subsidy eligibility for each budget year continues to be calculated as defined in 24 CFR 990.107 (c) (1) - (c) (3). The housing authority also continues to make an annual comparison of the current year consumption level to the three year rolling base consumption level. Although the regulations specify that the housing authority retains 75 percent of the savings, current HUD policy, which no longer allows year-end adjustments, allocates 100 percent of the savings to the housing authority.

Housing authorities may apply the add-on incentive to properties with resident-paid utilities. The authority will calculate savings as the difference in utility allowances determined before and after rehab.

Although the additional subsidy incentive is not strictly tied to the rolling base consumption level, housing authorities are required to implement measurement and verification protocols and monitor savings generated under the additional subsidy incentive.

Frozen Base Incentive

With the frozen base incentive (24 CFR 990.107 (f) (2)), a housing authority calculates its subsidy eligibility using the three year rolling base consumption level (RBCL) in effect at the time the project is approved by HUD. The RBCL is used for the term of the project, and the housing authority retains 100% of the savings resulting from the conservation measures to pay project expenses and debt amortization. Housing authorities are required to use 75% of savings toward the debt amortization and any related project and services expenses, superceding regulations at 24 CFR 990.110 (c) (2) (ii) (A). If the project requires less than 75% of the savings for amortization and expenses, the housing authority must use a shorter contract term or HUD will retain the difference between the actual savings and the 75% limit.

Developments with resident-paid utilities are also eligible for inclusion under the frozen base incentive. Savings are calculated from the difference in utility allowances determined before and after rehab. The housing authority reduces its rental income by the amount of the savings, which preserves its subsidy eligibility for paying project and debt service cost. The housing authority must use at least 75% of the savings from resident-paid utilities toward project expenses and debt amortization. Allowances must not be arbitrary or capricious [24 CFR 965.502 (e)] and must reflect the energy conserving behavior of households of modest circumstances [24 CFR 965.505 (a)].

Incentive Methods

HUD's two incentives offer flexibility to HAs in structuring their energy projects.

The additional subsidy method builds from the bottom up. Hard and soft costs for each measure, services costs, and finance costs are determined and rolled into a total subsidy amount for request in each year's budget. The additional subsidy method has advantages where savings are a small portion of the utility bill or where other capital measures are included or planned, which may impact energy savings. Savings for ECMs can be verified separately from the bill with sub-meters and other forms of M&V.

The frozen base works from the top down. Subsidy eligibility is established using the frozen consumption level, and all project costs, including debt service are covered from the difference in actual savings and the baseline level. This method is common for measures where savings are readily observed in the utility meters that are the basis for the consumption baseline.

The baseline for the utility finance project will use the three year rolling base in effect at the time of field office approval for the final energy plan or energy services agreement. If the final plan or energy services agreement is submitted to HUD earlier than four months prior to the end of the fiscal year but approval was delayed for reasons not the fault of the housing authority, the field office may at its discretion allow the housing authority to use the rolling base consumption for the budget year in effect at the time of submission.

Application Guidance

Adjustments to the Rolling Base

Adjustments to the three year rolling base may be required for the following:

- Broken utility meters.
- Incomplete utility company readings.
- Anticipated increased occupancy levels after comprehensive modernization.
- Required repairs to bring units into code compliance or improve life-safety conditions.

Measurements or appropriate engineering models must support any requested adjustments. The adjustments must be submitted to the field office for review and approval.

Allowable Retrofits

HUD's utility incentives are commonly used to finance the replacement of any utility-related equipment, systems and associated infrastructure. Measures that are funded under energy finance projects include lighting, heating and cooling systems, hot water systems, controls, windows, appliances, and water measures. In many locations, combined heat and power systems are also viable opportunities.

Regulations at 24 CFR 965.304 suggest that where possible, preferential treatment should be given to measures with the shortest payback. Adjustments to this funding order can be made to provide funding for very long payback measures and supporting infrastructure.

Authorities that complete life cycle costing analysis as part of their utility financed projects can change fuels where the switch is found cost-effective, but life cycle analysis must account for any remaining value of the existing systems.

Funding Options

Regulations at 24 CFR 965.305 describe permissible funding options for accomplishing cost-effective energy conservation measures. Housing authorities should use operating funds to the extent feasible; other permissible funding options include capital funds and financing by an

Project Based Utility Management

Utilities are metered and billed at the project level and translate directly to project based management of public housing properties. Utilities can be tracked over time and used to benchmark performance of a building against similar structures or industry norms.

Projects that finance energy measures, however, aggregate savings over several properties to allow financing of single, long payback measures at individual properties. If a housing authority later chooses to sell or demolish a property (i.e., realign its asset mix to market conditions), it will need to terminate the financing for that property. Because the savings have been bundled, the terminated property will have a greater (or lesser) contribution to the overall project than the bundle average. The shortfall (or windfall) in savings may require a disproportional adjustment to debt service payments for the remaining property in the energy project. There may also be termination fees from the bank and services firms.

entity other than the Secretary, e.g., financing using energy savings.

Financing sources may include:

- Grants.
- Tax exempt bonds.
- Tax-exempt lease purchase agreements.
- Low-interest rate loans from utility suppliers.
- Loans from conventional lenders such as banks.
- Loans from state or local government agencies.

Loans, bonds, etc., will ultimately be repaid by funding provided under two HUD incentive mechanisms that rely on the energy savings generated by the installed energy conservation measures.

Contract Term

The term of the contract cannot exceed 12 years from the date of the installation and acceptance of the conservation measures.

If a housing authority fails to properly submit its subsidy eligibility using frozen base or additional subsidy methods, the field office, at its discretion, can approve moving the base period forward. If the field office does not approve the request, the HA must use non-HUD funds to cover the shortfall. The housing authority must have unconditional field office approval before starting the construction phase.

At the field office's discretion, after a period of at least four years of full repayment, a housing authority may request to suspend repayment period services by an energy services company, which will cancel its savings guarantee. The housing authority must have a qualified licensed engineer review the authority's historical savings performance, measurement and verification procedures, and preventative maintenance plans to ensure the housing authority can maintain persistent savings over time.

If a housing authority proceeds without unconditional field office approval, the housing authority must use non-HUD funds to make project and debt service payments.

Rates

Rates for subsidy eligibility under an energy financed project are calculated using current actual costs divided by actual consumption or the most recent rate tariff posted by a local utility company. Savings calculations, however, should be calculated using marginal rates to ensure that the average rate is not adversely affected by reduced peak demand, time of use schedules, fixed charges, or varying block schedules. Supporting documentation for all rate calculations, including alternatives to average rates, must be provided annually to the field office with the authority's budget submission. Housing authorities need to evaluate the stability and accuracy of utility rates calculated for their projects. This is particularly important for ESCO-managed projects, where the energy service agreement has included a floor rate provision.

Housing authorities may choose to establish a floor rate in their performance contracts as a result of negotiations with an energy services company. The housing authority carries the risk for falling utility rates.

Housing authorities are encouraged to seek rate reductions as part of a comprehensive strategy to manage operating costs. When the rate incentive is coupled with an energy financed project, the prevailing rate prior to the rate reduction is applied to the frozen rolling base consumption level. Per 24 CFR 990.110 (b) (1), to be eligible, the housing authority must take action beyond normal public participation in rate-making proceedings to reduce the rate it pays for utilities. The authority may retain one-half of the annual savings attributed to rate reduction.

Rate Risk

Housing authorities and field offices need to assess rate risk in performance contracts. Supporting documentation for all rate calculations, including alternatives to average rates, must be provided to the field office with the authority's finance project and subsequent annual budget submissions.

It is a common provision in performance contracts to establish a floor rate for determining guaranteed dollar savings. At the Augusta (GA) Housing authority, electricity rates fell after the authority's energy services agreement was executed, leaving the housing authority with less than anticipated savings to make its debt service payments.

How utility rates are established affects both project savings and project risk.

Phased Projects

A housing authority may stage its construction project into phases to enable better integration with capital funds or to facilitate the implementation of larger projects within local capacity constraints. A single energy services agreement or energy services plan must be submitted for the project. If ESCO-managed, a project may be phased without reissue of a new RFP only when the initial energy study addressed all HA properties covered in the proposed phases.

The frozen base or additional subsidy incentive should be applied consistently to entire developments in each construction phase. The phases must either be divided by separate utility type or separate developments. Initiation of construction for coupled phases must fall within two years of the execution of the energy services agreement and detailed savings and costs must be provided in the executed agreement. The field office must review staggered frozen rolling base periods and staged project financing, if requested in the project. Final contract amendments that reflect the executed financing documents must be submitted to the field office.

In the case of a frozen base subsidy the field office, at its discretion, may allow excess cash flow from earlier phases to support measures in a later phase. Housing authorities must establish a reserve account to capture and retain savings generated in the earlier periods to structure balloon or other financing payments in later phases. A contingency reserve account may be established to cover anticipated inflationary costs for staged construction, but unused funds must be an asset of the housing authority.

Excess cash flow from earlier phases may not support measures in a later phase for an add-on subsidy. Add-on subsidy reviews are on a year-by-year basis and the cash flow must be positive for each year.

Use of Capital Funds in Utility Financed Projects

In many projects, housing authorities may seek to use capital funds in collaboration with utility financing. This is due to deferred maintenance items such as heating and hot water systems and windows, which have high initial capital costs. Housing authorities are encouraged to blend capital funds with utility finance projects where using the two funding sources will provide synergy and extend comprehensive property revitalization. However, the following restrictions apply:

- Leveraging of capital funds requires HUD Headquarters approval, and the housing authority must comply with all rules for competitive procurement and program requirements for using capital funds (24 CFR 968).

- All equipment installed or removed with these funds must generate no utility savings OR savings calculations must be reduced to reflect the use of federal funds. This should be accounted for during the yearly M&V review process for the EPC, when the portion of energy savings resulting specifically from capital fund energy improvements must be excluded from the resulting energy-financed savings.

- A housing authority may use its ESCO for A/E services or construction management for capital fund related work; however, the ESCO must competitively bid separately for these services and must be selected per capital fund regulations.

- The final energy services agreement or energy services plan must show itemized expenditures by development for capital fund and energy-financed investments.

In performance contracts where the housing authority elects to use capital funds and is using a firm other than the ESCO to implement capital improvements, the energy services company must coordinate its work with housing authority staff and any associated contractors to reduce project interference, redundant work, and project delays.

In cases where the housing authority elects to manage its utility financed project without an energy services company, the housing authority must follow all capital fund related requirements for construction management and installation and its commissioning agent must ensure design intent carries through from planning through design and construction. As with a traditional performance contract the energy conservation measures and capital fund program repairs should be coordinated to reduce project delays and subcontractor interference.

Examples of repairs that a housing authority may seek to couple with an EPC include:

- Wall framing, drywall, floor systems, weathering surfaces, and exterior façade systems related to a window or roof replacement project

- Tubs, tile, sinks, cabinets, fixtures, and piping and associated building equipment and systems repaired as part of a water efficiency retrofit or comprehensive kitchen or bath remodel

- Electrical and gas infrastructure required to bring electric or gas into a building or to the heating/cooling equipment

Projects that utilize capital fund financing (or leverage) are similar to using conventional capital funds. The funding stream should only be used for infrastructure and must be competitively procured.

Timing differences between capital funding (e.g., capital funds and capital fund financing) can have a significant impact on the energy project. The financing for an energy performance contract can generally be closed quickly once the Energy Services Agreement (ESA) is executed if competitive quotes for financing are started before submitting the final ESA to HUD for approval. Traditional capital funds will require having the A/E firm or construction contractor under contract before executing the energy financing to enable timely integration. Capital fund leveraged projects, which are regularly using bond pools and other instruments that continue to require HUD headquarters involvement, require the additional complexity of working with multiple stakeholders, pooled investments, and differing regulatory oversight.

Incremental design improvements can also be financed during HOPE VI revitalization projects using the PHA-managed framework and must use the additional subsidy incentive with appropriate annual savings verification.

Shelf Life of Utility Financing Procurements

If an energy services company was selected under competitive procurement but both parties did not execute an audit contract within two years of issuing the RFP, the housing authority must issue a new RFP before proceeding.

Before acting on the audit and submitting an ESA to the field office for review, if a housing authority has selected an energy services firm and has not acted on the energy audit report within two years of issuing its audit contract, the housing authority must update its analysis and recommendations to reflect changes in building use, capital investments, maintenance and operations changes, utility rates and occupancy, before engaging in an energy services agreement.

Aggregation of Small Housing Authorities for EPC Projects

Housing authorities with fewer than 300 housing units may be eligible for significant utility cost reductions but the dollar value of the resulting rehab project may be relatively small, making them unattractive to some energy services companies. These agencies are encouraged to aggregate with peer agencies to establish a larger, more efficient foot print for project management

Aggregating Small Authorities

The administration and facilitation required to complete an energy finance project is substantial, and it is required for one authority or several. ESCOs have historically not sought to take on these projects when larger authorities were just as likely to engage with them.

Prior to the Keene (NH) Housing Authority organizing an aggregated performance contract, previous aggregated projects had been tried and failed. Keene reached out to two of its peers to issue an RFP and acted as the lead agency. Two of the three signed energy services agreements. The project is in repayment.

and execution. Aggregated projects must meet all requirements set forth in this procedure.

Aggregation projects require a housing authority, a non-profit, or a state-government agency to act as champion and coordinator. A single RFP for an energy services company is issued for the group of agencies, and the consortium of housing authorities must agree to equitably allocate the costs of the investment grade audit, engineering, M&V, and other related fees, so that no one agency takes too much burden or risk. This cost allocation can be established using number of developments or units, savings contribution, or contribution to aggregated project size and must be approved by the field office.

Each housing authority must have a positive cash flow and must have a project that can be financed within a 12-year maximum term. Each housing authority must have a separate guaranteed savings contract with the energy services company and an individual M&V report for its developments and total project.

Some states have state-funded public housing portfolios that are managed by housing authorities administering the federally-funded public housing program. If the state- and federal-funded portfolios are issued for aggregated procurement, procurement of energy services for the federal program must meet both the state and federal requirements.

Blended Use of Incentives in the Same Project

The additional subsidy and frozen base incentives may be used singly or together in any project. The frozen base incentive works well for baskets of conservation measures whose savings are a large portion of the utility bill or where there is an uncertain post-retrofit consumption reduction.

In hybrid incentive projects using additional subsidy and frozen base methods, excess savings for the additional subsidy portion, beyond those required for debt service and services, may be determined and used to contribute to the overall basket of measures, provided that proper measurement and verification is conducted to ensure the excess savings exist and persist over time.

Conversion of retail meters to master meters is allowable under special circumstances and will require a waiver from HUD headquarters. The request and proposed change must be supported with economic justification and supporting analysis for the rolling base adjustment.

Financing Projects Beyond a Maximum 12-Year Term

In 2001, an amendment was introduced to Senate energy bill S-517 (107th Congress) that sought to extend and streamline the use of utility financed projects in public housing, including provisions to extend the allowable contract term from the current 12 years to a maximum of 20 years and to allow common rolling base adjustments without regulatory waivers. The amendment was accepted into the energy bill by the House-Senate conference committee. Although the original bill was scrapped, all subsequent bills have included the amendment language.

Financing a performance contract beyond 12 years poses some unique opportunities and challenges. A 20-year term offers the opportunity to bundle and finance into energy financed

projects longer payback measures, such as heating and hot water systems, windows, cogeneration, and renewable energy systems, which would not be possible in the traditional 12-year term. The longer term would also promote projects in areas of the country that have low utility rates but significant retrofit opportunities.

The longer 20-year maximum term will require field offices to evaluate the mix of conservation measures. Some measures may have expected useful lives less than 20 years and may require mid-life replacement. Field offices may also seek as needed to limit capture of savings from measures with high cash generating potential to some lesser portion of full term. Finance costs for a 20-year term can be higher than a 12-year term, reflecting 20-year treasuries over the more common 10-year rates.

Measurement and Verification

Utility savings are determined as the difference between consumed energy before and after completing efficient retrofits and repairs. Adjustments are necessary to compare the pre-retrofit period to the post-retrofit period, where the most common adjustment is for weather. Savings in each performance year must stand on its own merits.

The process of measurement and verification is used to:

- Provide a contractual basis for monitoring performance
- Assure all stakeholders that savings exist and persist over time
- Actively manage building performance and maintenance over the project term

There are four basic protocols, which are defined by the IPMVP organization that may be applied to a performance contract. In public housing energy performance contracting projects, IPMVP Option C is required unless another method is approved by the HUD field office.

Both frozen base and additional subsidy projects require M&V. Retrofits of equipment with resident-paid utilities will require collection of utility bills. International Performance Measurement and Verification Protocol (IPMVP) is available at http://www.ipmvp.org/Documents/ipmvp-vol1.pdf

Selection of M&V Protocol

Choice of an M&V method requires a trade-off between risk and cost. Increasing certainty in savings increases M&V cost. The decision on protocol depends on the availability of metered data, the accuracy of available meters, and variability of the load and estimated savings, and the cost for improved accuracy.

- Option A – Partially Measured Retrofit Isolation. In this method, savings are determined by measurements of only the conservation measure and not the entire facility. Some but not all parameters may be stipulated, and measurements may be short-term or continuous.

- Option B – Retrofit Isolation. In this method, savings are determined by measurements of only the conservation measure and not the entire facility. Periodic or continuous measurements continue into project repayment stage.

- Option C – Whole Building Analysis. In this method, building utility meter data is used to make direct or statistical comparisons of pre- and post-retrofit performance. Post-retrofit measurements are continuous.

- Option D – Calibrated Simulation. In this method, an hourly simulation is used to model building performance and simulate savings estimates. Measured data is used to calibrate the engineering model.

Steps involved in measurement and verification include:

- Define the baseline condition. This requires establishing the existing building design and operating conditions and correcting the baseline for any singular, non-standard, or deficient conditions, such as failure to comply with local building codes.

- Determine the efficient condition. Establish the proposed building design and operating conditions and calculate the projected utility savings.

- Develop an M&V plan. This includes deciding on the IPMVP protocols, the measurement plan, and the verification procedures (i.e., calculation methodologies for comparing baseline and actual consumption and any necessary adjustments).

- Integrate the Commissioning Plan. Establish design intent, commission the installed equipment, and verify assumptions and quantities in the M&V plan. Also, recommission equipment periodically throughout the term to ensure savings persistence.

Process for Using the Incentives

Statute requires that third parties participate with the housing authority to use the energy incentives. The most common approach to using utility savings to finance comprehensive rehab is to use an energy services company. A second approach is available where the housing authorities self-manage the project, assembling the necessary capabilities to complete the work. The field office must approve all energy-financed projects.

Using an Energy Services Company

Energy services companies (ESCO) are firms that develop turnkey energy conservation projects and finance capital costs with utility savings generated by measures installed. An ESCO provides services such as energy audits, project financing, design, construction management, savings monitoring, training, and long-term maintenance support and guarantees its savings projections.

Selection of an energy services company requires the housing authority to issue a request for proposals to its local field office. Once approved by HUD the availability of the RFP must be announced, at a minimum, with the following groups for dissemination to their members and interested business partners:

- National Association of Housing & Redevelopment Officials (NAHRO, www.nahro.org)
- Public Housing Authority Directors Association (PHADA, www.phada.org)
- National Association of Energy Service Companies (NAESCO, www.naesco.org)
- Energy Services Coalition (ESC, www.escperform.org)

The RFP includes a request for price to complete a detailed engineering study and a request for ESCO qualifications to complete turnkey engineering, construction, training, and financial services.

A minimum of three responses from qualified energy services companies must be obtained. A qualified ESCO will have completed at least three energy finance projects in the last five years. Proof of the solicitation and qualifications of the firms must be submitted to the field office with an executed copy of the audit contract. Selection of a firm to conduct the engineering study does not require the housing authority to use that firm to complete a performance contract. Once the detailed engineering study is complete, the housing authority must submit the audit and a copy of the proposed energy services agreement to the HUD field office for review and approval.

The housing authority is highly recommended to retain a consulting engineer to act as owner's representative for ESCO-managed projects. Consultants retained by the housing authority for performance contracting must provide a notarized affidavit that they are free of conflicts of interest and do not receive service fees, commissions, or have formal business relationships with any energy services firm.

The housing authority must prepare a formal request for financial quotations and receive at least three qualified quotes; if prime rates change more than a half percentage point before lock, competitive quotes must be requested again. Supporting documents must be provided to the field office.

Housing authorities must submit an RFP to its field office for review and approval before issuance. The HA must also submit its executed engineering study contract, proof of competition and its opportunity listings. The HA must also submit its RFP for financing and proof of competition for financing.

The HA must submit to the field office for review and approval its energy services agreement. After approval, the executed energy services agreement (ESA) and any later changes due to contingencies, change orders, final lending rates, or later refinancing must be submitted to the field office for its records. Any significant changes to the ESA or its supporting documentation after HUD's approval will require submittal for review. If a housing authority proceeds without unconditional field office approval, the HA must use non-HUD funds to make project and debt service payments.

Self-Managed Utility Financing

Housing authorities may seek to self-manage utility financing projects. A housing authority will need to ensure it has the necessary capabilities to manage its own energy project successfully and has aligned its business processes and procedures to complete such a project, thus ensuring savings will persist over time. Housing authorities, not the Department, assume the risk and obligation to pay debt service from energy financing.

Housing authorities interested in assembling the capacities necessary to manage self-directed energy financed projects will need the following capabilities:

- Energy engineering expertise. Experience in energy engineering, utility rate analysis, utility accounting, benchmarking, allowance studies, and energy audits.
- Performance contracting expertise. Knowledge of the process used to manage, procure, finance, and implement standard performance contracts and experience with the associated HUD rules and regulations.
- Energy finance. Knowledge and experience with energy cash flow projections, financing options, tools, and blended finance approaches.
- Design review, commissioning, and construction management expertise. Capability to review and translate engineering criteria into proven design requirements, equipment selection, construction management processes, and operations & maintenance procedures.
- Measurement and verification and performance monitoring expertise. Capability to measure and verify that savings exist and persist over time.

Self-managed projects must meet the following minimum requirements. In lieu of the RFP used with ESCO managed projects, the housing authority must provide a detailed energy project plan. The project plan will include:

- An assessment of its facility needs.
- Housing authority statement of capabilities and internal project processes.
- An assessment of the agency's energy opportunities including capital costs and estimated savings.
- Financial cash flow projections.
- A project commissioning and preventative maintenance plan.
- A measurement and verification plan.

A preliminary energy project plan must be submitted to the HUD field office for review, and approval must be gained in writing. After a detailed engineering study is completed, the housing authority will submit its detailed project plan for field office review and approval. The study will be based on actual quotes for construction, finance, maintenance, and other costs. The housing authority must also identify how it will complete design and construction and integrate the energy project with its ongoing modernization program. A housing authority must have on its team a licensed professional engineer familiar with performance contracting, commissioning, and measurement and verification.

Included in its energy project plan the housing authority will include a detailed description of its construction management practices and associated financial controls. The description should

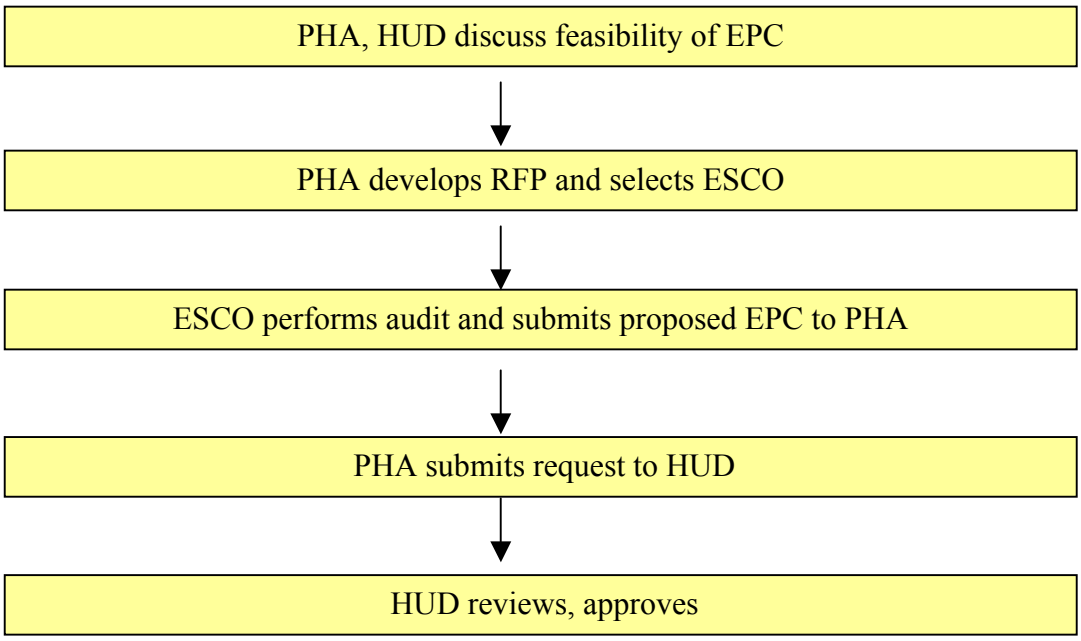
include protocols for design, construction inspections, construction draws, and requisition approvals.

Design and construction services must be procured using the authority's normal capital fund procedures, and proof of competition is required. Procurement under self-financed projects is governed by 24 CFR 85.36.

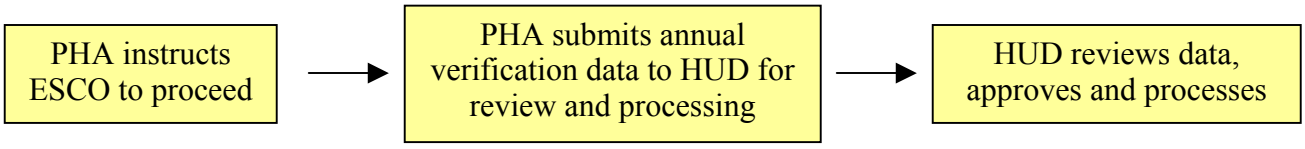
Field Office Review Guide I: ESCO-Developed Energy Performance Contracting

Overview of Process

Solicitation for an ESCO:



Implementing the EPC:



Solicitation for an ESCO

Preliminary Steps

PHA notifies field office about interest in performing an EPC. HUD field office discusses with the PHA the feasibility of conducting an energy performance contract, financial benefits, risk, and the commitment and time involvement required by a PHA to design, develop and execute an EPC.

Request for Proposals

The housing authority begins the procurement process by drafting a request for proposals (RFP) used to select an energy services company. The RFP requests qualifications for implementing a performance contract and a price to complete the detailed engineering study.

The housing authority then submits the RFP to the HUD field office for approval. The HUD field office has 14 business days after the receipt of the RFP to review and issue a decision (i.e., approval or recommended changes). If a revised submittal by the housing authority is required the HUD field office has 10 business days after the receipt of the revised RFP to review and issue a decision. The housing authority makes any necessary changes to the RFP and sends a final copy to the field office for its records.

Sample RFP documents are available from the HUD Green Book, the HUD Buffalo field office (Worksheet 2), and several state energy offices.

Next, the HA performs the following tasks in accordance with 24 CFR 85.36:

- Advertises the RFP and solicits bids from an adequate number of qualified firms.
- Reviews proposals.
- Selects an ESCO best meeting RFP requirements.
- Documents its decision for contract award.
- Executes an audit contract with the ESCO.
- The audit contract should have a clearly defined schedule and list the measures to be analyzed, reporting requirements, and required deliverables.
- The audit can also satisfy the PHA's requirement under 24 CFR 965. This should be specified in the RFP and reinforced in the audit contract.

The HA must also submit proof of competition to the field office.

Project Development

Once the ESCO completes an energy audit, the HA and ESCO use the energy audit to develop a project that can be financed within a maximum 12-year term. When using the frozen base method, the authority is further constrained to use at least 75% of savings toward amortization and project expenses.

The detailed energy study should include:

- Facility descriptions, ECM recommendations, utility analysis methods, operating conditions, and assumptions
- Current and planned metering mix, including the bill responsibility, number of meters, locations, and bill account numbers
- Utility consumption and baseline data, measured data, and other data used in analysis
- Utility rates used in savings calculations and their build-up
- Supporting engineering analysis for baseline adjustments, if applicable

Once negotiations with the ESCO are completed, the PHA submits to the HUD field office its investment grade audit and its energy services agreement with all required federal forms. The energy services agreement requirements include:

- An M&V plan that covers each individual measure or group of measures, including measurements and calculation procedures, such as heating degree day adjustments.
- Hard and soft costs for each ECM segmented by project site. Also provide supporting documentation for all service fees, overhead, and profit.
- Documentation of cost contributions (e.g., capital funds, system benefit fund incentives) and associated requirements.
- Preliminary amortization schedule and interest rate. If more than one financing source is used provide information for each.
- A template for construction invoices, which should use AIA or equivalent methods and be based on percent complete. Construction mobilization should be consistent with construction industry norms.
- Commissioning plan.
- Preventative maintenance plan.
- Training plan, if applicable, for staff and/or residents.
- Other terms and conditions, including guarantee provisions and equipment warranties.

Project costs include soft and hard costs, overhead and profit. Soft costs include the audit fee, design and engineering, construction management, measurement and verification, and training. Costs may also include repayment period technical service, maintenance agreement, or shared savings fees.

HUD Field Office Review and Approval

> EPC approval of large, multi-building projects may require as much as 30 days for reviews. Smaller, less-complex projects should be expedited when possible.

HUD will review the proposed energy services agreement to ensure compliance with 24 CFR 990, 24 CFR 965, and 24 CFR 85.36 requirements. The field office must complete its review and issue its decision or required changes within 30 business days. A typical review may require two to three person-weeks of effort and should be planned accordingly. The field office will also complete the HUD Checklist (Worksheet 6). If a revised submittal by the housing authority is required the HUD field office has 15 business days after the receipt of the revised energy services agreement to review and issue a decision.

An approval letter issued by the HUD field office will:

- Establish the frozen rolling base consumption level and/or additional subsidy level for the contract.
- Confirm the project investment, projected and guaranteed savings, incentive term, and quoted interest rate as provided by the housing authority in the energy services agreement.
- Clarify any expectations or procedures required for submitting annual monitoring reports, including the submission of actual utility bills and annual certification.

> The field office Engineer and Financial Analyst should plan and coordinate their efforts as the EPC process develops.

Implementing the EPC

Project Implementation

Once an energy services agreement has been approved by the HUD field office, the housing authority is responsible to move the project into construction and repayment.

The following construction phase steps will be performed by the housing authority:

- Execute its approved energy services agreement
- Execute the final financing documents and receive the final loan amortization schedule
- Mobilize the energy services company to complete design drawings and engineering specifications, and to execute its construction subcontracts
- Independently commission the project against contract requirements
- Enforce schedule milestones and completion dates

The field office, at its discretion, may choose to participate in final inspections. If capital funds are used in the project,

> Construction Monitoring Installations should not be accepted as substantially complete (as completion initiates the official start of repayment), until all equipment and fixtures have been inspected, functionally tested, and compared to contract requirements
>
> If a budget submission is due during the construction period, the housing authority should ensure that it properly accounts for the frozen base and/or add-on and the current utility rate.

the field office will review bid documents and contract awards.

Annual Review Requirements

Within 45 days of its fiscal year end data, the HA will submit to its HUD Field Office an annual Measurement and Verification monitoring report. The report will include for all measures regardless of incentive:

- Monthly actual consumption, demand, and cost data for each meter in the project
- Monthly heating and cooling degree day data for the nearest weather station and any other information required by adjustment methods in the M&V plan
- Evaluation of actual performance against the guarantee and documentation of any adjustments employed
- PHA certification of its annual savings

Measurement and Verification shall be in accordance with the IPMVP Option C, direct measurement with utility meters or submeters, unless otherwise approved by HUD. Verification by calculations and short-term measurements, Options A (usually for lighting retrofits) or B (for more complicated improvements) must be approved by the HUD Field Office in advance.

The HUD field office, within 30 days of receipt, will review the authority's monitoring report and submissions against the terms of the final agreement and issue a decision letter. The PHA will review and resolve any data requirements specified in the response letter. If a revised submittal by the housing authority is required the HUD field office has 10 business days after the receipt of the revised M&V report to review and issue a decision

In its annual accounting audit, the housing authority must provide its energy loan documents for review, including expenditures, remaining account balances, and outstanding principal & interest. The authority must also reflect, as necessary, the energy project in its annual PHA Plan.

Maintaining Records

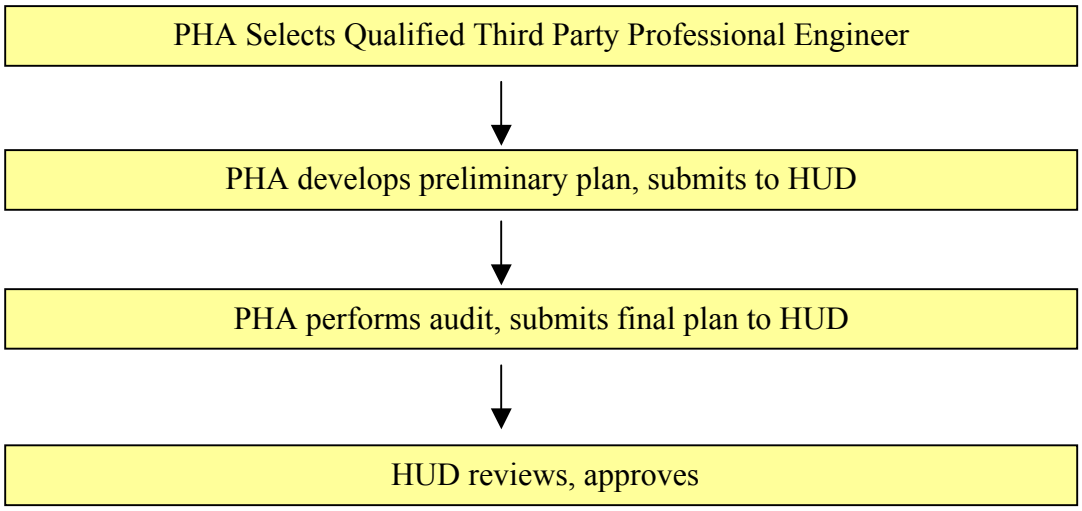
The organization, maintenance and filing of these documents are required for program compliance. All final documents approved by HUD and the housing authority and any revisions to the agreements, including refinancing to obtain an improved interest rate, must be maintained in the PHA files.

The following records should be maintained in a file dedicated to energy finance projects:

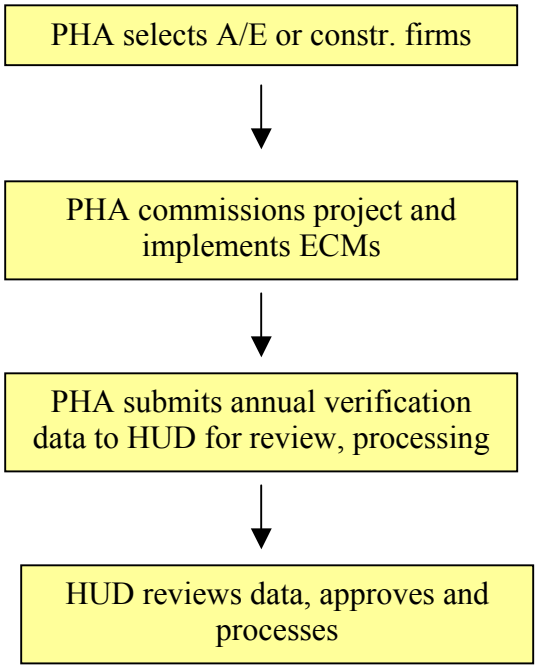
- Final RFP for energy services companies and proof of competition
- HUD approval letter to proceed with RFP
- Investment grade audit
- Energy Services Agreement
- HUD approval to proceed with an energy service agreement
- Financing agreement and any post-approval contract revisions
- Annual review package, including consumption and verification data sheets, and the HUD field office review letter

Field Office Review Guide II: PHA-Developed Energy Performance Contracting

Overview of Process



Implementing the EPC



Developing the Project

Preliminary Work

PHA notifies field office about interest in performing an EPC. HUD field office discusses with the PHA the feasibility of conducting an energy performance contract, financial benefits, risk, and the commitment and time involvement required by a PHA to design, develop and execute an EPC.

Developing the Application

By Statute (i.e., QHWRA, Title 42, Chapter 8, Sec. 1437g), the housing authority requires a qualified third party to assist it in its energy finance program. The authority is required to use a licensed engineer familiar with performance contracting, commissioning, and measurement and verification. Procurement will follow 24 CFR 85.36.

Next, the housing authority will develop and submit a preliminary project plan to the HUD field office. The preliminary plan includes:

- An assessment of the authority's capability, capacity, and systems required to manage the project.
- An preliminary assessment of project potential, including a review of capital plans and physical needs.
- A preliminary financing plan, commissioning plan, and M&V plan.

Housing authorities must be designated a Standard Performer or High Performer under PHAS to complete energy projects without an energy services company. HUD will consider requests from housing authorities designated as Troubled under PHAS when an authority is able to show it has the appropriate capabilities to successfully complete the project.

The HUD field office reviews and issues a decision (i.e., approval or recommended changes) within 14 business days of receipt of the preliminary plan. If a revised submittal by the housing authority is required the HUD field office has 10 business days after the receipt of the revised preliminary plan to review and issue a decision.

The housing authority will then complete its investment grade audit. The audit may be performed by the third party, separately procured, or obtained through a State energy efficiency program.

Project Development

Next, the housing authority uses the detailed energy study to develop a project that can be financed within a maximum 12 year term. When using the frozen base method, the authority is further constrained to use at least 75% of savings toward amortization and project expenses.

The detailed energy study should include:

- Facility descriptions, ECM recommendations, utility analysis methods, operating conditions, and assumptions.
- Current and planned metering mix, including the bill responsibility, number of meters, locations, and bill account numbers.
- Utility consumption and baseline data, measured data, and other data used in analysis
- Utility rates used in savings calculations and their build-up.
- Supporting engineering analysis for baseline adjustments, if applicable.

Once complete, the HA submits its final project plan to it HUD field office. It also submits a copy of its investment grade audit and any required federal forms. The energy project plan requirements include:

- An M&V plan that covers each individual measure or group of measures, including measurements and calculation procedures, such as heating degree day adjustments
- Project hard and soft costs for each ECM segmented by project site. Also provide supporting documentation for all service fees
- Documentation of cost contributions (e.g., capital funds, system benefit fund incentives) and associated requirements
- Preliminary amortization schedule and interest rate. If more than one financing source is used provide information for each
- A template for construction invoices, which should use AIA or equivalent methods and be based on percent complete. Construction mobilization should be consistent with construction industry norms
- Commissioning plan
- Preventative maintenance plan
- Training plan, if applicable, for staff and/or residents
- Other terms and conditions, including guarantee provisions and equipment warranties

Project costs include soft and hard costs, overhead and profit. Soft costs include the audit fee, design and engineering, construction management, measurement and verification, and training. Costs may also include repayment period technical service, maintenance agreement, or shared savings fees.

In addition, the HA will develop procurement documents for design and construction and procure the necessary A/E firm and/or construction firms to implement the required construction activities. These procurements must meet 24 CFR 85.36.

HUD Field Office Review and Approval

HUD will review the proposed energy project plan to ensure compliance with 24 CFR 990, 24 CFR 965, and 24 CFR 85.36 requirements. The field office must complete its review and issue its decision or required changes within 30 business days. A typical review may require two to three person-weeks of effort and should be planned accordingly. The field office will also complete the HUD Checklist (Worksheet 6). If a revised submittal by the housing authority is required the HUD field office has 15 business days after the receipt of the energy project plan to review and issue a decision

An approval letter issued by the HUD field office will:

- Establish the frozen rolling base consumption level and/or additional subsidy level for the contract.
- Confirm the project investment, projected and guaranteed savings, incentive term, and quoted interest rate as provided by the housing authority in the energy services agreement.
- Clarify any expectations or procedures required for submitting annual monitoring reports, including the submission of actual utility bills and annual certification.

Project Implementation

Once an energy project plan has been approved by the HUD field office, the housing authority is responsible to move the project into construction and repayment.

The following construction phase steps will be performed:

- The housing authority will execute the final financing documents and receive the final loan amortization schedule
- The housing authority will issue, if not yet completed, its RFQ/RFP for A/E and/or construction services, select contractors for each measure in the energy services plan, negotiate and execute contracts.
- The housing authority and its consulting engineer will commission the designs and specifications and monitor construction against contract requirements.
- The housing authority will enforce schedule milestones and completion dates.

Project Financing

Public housing authorities are eligible for tax-exempt financing and can use equipment lease and bond financing instruments. Because energy projects generate a revenue stream that can provide security on a financing agreement, real property is not required for securitization.

A housing authority should seek competitive quotes from its local bank but also from financiers that specialize in energy projects. PHAS scores matter and affect interest rates.

During construction, additional considerations include:

- Installations should not be accepted (as acceptance initiates the official start of repayment), until all equipment and fixtures are inspected, functionally tested, and compared to contract requirements.

- The housing authority must ensure its budget submission properly accounts for the frozen base and/or add-on and the current utility rate.

The field office, at its discretion, may choose to participate in final inspections. If capital funds are used in the project, the field office will review bid documents and contract awards.

Annual Review Requirements

Within 45 days of its fiscal year end, the HA will submit to its HUD Field Office an annual Measurement and Verification monitoring report. The report will include:

- Monthly actual consumption, demand, and cost data for each meter in the project.
- Monthly heating and cooling degree day data for the nearest weather station and any other information required by adjustment methods in the M&V plan.
- Evaluation of actual performance against the guarantee and documentation of any adjustments employed.
- PHA certification of its annual savings.

Measurement and Verification must be in accordance with the IPMVP Option C, direct measurement with utility meters or submeters, unless otherwise approved by HUD. Verification by calculations and short-term measurements, Options A (usually for lighting retrofits) or B (for more complicated improvements) must be approved by the HUD Field Office in advance.

The HUD field office, within 30 business days of receipt, will review the authority's monitoring report and submissions against the terms of the final agreement and issue a decision letter. The PHA will review and resolve any data requirements specified in the response letter. If a revised submittal by the housing authority is required the HUD field office has 10 business days after the receipt of the revised M&V plan to review and issue a decision.

In its annual accounting audit, the housing authority must provide its energy loan documents for review, including expenditures, remaining account balances, and outstanding principal and interest. The authority must also reflect, as necessary, the energy project in its annual PHA Plan.

Maintaining Records

The organization, maintenance and filing of these documents are required for program compliance. All final documents approved by HUD and the housing authority and any revisions to the agreements, including refinancing to obtain an improved interest rate, must be maintained in the PHA files.

The following records should be maintained in a file dedicated to energy finance projects:

- RFQ for licensed energy engineer and proof of competition
- PHA preliminary energy project plan and submittal letter
- HUD approval to proceed with a detailed project plan
- Investment grade audit
- Final energy project plan
- HUD approval to proceed with its energy plan
- Financing agreement and any post-approval contract revisions
- Proof of competition for A/E and/or construction firms
- Annual review package, including consumption and verification data sheets, and the HUD field office review letter

WORKSHEETS

Worksheet 1 – Recommended Audit Specifications

Worksheet 2 – Sample RFP (Example from Buffalo, NY HUD Office)

Worksheet 3 – Energy Conservation Measure Worksheet

Worksheet 4 – Housing Authority Yearly Certification

Worksheet 5 – Utility Consumption Workbook (Excel file)

Worksheet 6 – Energy Performance Contract – HUD Checklist

Worksheet 1: Recommended Audit Specifications

Facility Information

The first step in an energy audit is to gather information about the sites that will be audited. Information is collected through interviews with appropriate staff and compilation of available documents. This information will help evaluators determine the level of effort appropriate for the audit, where the major energy use systems are located, and operating procedures unique to any equipment.

The information should include the following:

- Monthly utility bills for the previous twelve to thirty-six months;
- Applicable rate schedules, commodity purchase agreements, and transportation rates for deregulated utilities;
- Building equipment and system details, including estimated total conditioned floor space in square feet;
- Operation and maintenance records; and
- Modernization plans

Site Walkthrough

The site walk-through allows the auditor to gather first-hand information on the facilities and to assess equipment condition and operating environment. The walk-through also allows the auditor to review space limitations that would limit the types of measures that can be installed and test the accuracy of available documentation. During a walk-through, the auditor questions authority staff about building operations, new equipment, maintenance history, and planned renovations. The auditor will also review structural and mechanical plans.

Utility Analysis

Another important step in the energy audit is analysis of utilities. Here the auditor will trend the utility bills, evaluate the rate schedules and purchased utilities, and make comparisons among properties and to similar facilities. Analysis should separate out key end-uses to aid in comparisons. In more detailed engineering audits used for energy financing projects, it may be necessary to monitor the consumption of individual equipment to assist in disaggregating end uses.

Savings Calculations

Savings calculations must be performed to consensus engineering standards and design guides such as those offered by American Society of Heating, Refrigeration & Air Conditioning Engineers. Temperature bin analysis or hourly simulations should be used for weather related measures. Modeled results should be calibrated against utility bills to ensure accurate division of consumption among heating & cooling, hot water, appliances, lighting, and plug loads.

Savings calculations must also consider the interaction of conservation measures. New windows and insulation, for example, will reduce the total amount of heat required by the building. The

smaller heat demand reduces the necessary size of the heating plant and reduces the total savings generated from more efficient heating equipment.

Cost Estimates

Energy audits must also determine cost estimates to allow measures to be ranked. The estimates may vary from industry estimates to past project and current quotes from vendors. More rigorous and accurate cost analysis should be reserved for measures that are assessed in a first pass analysis to be cost effective or that will be integrated into planned modernization projects. Cost estimates must separately identify any utility or state incentive funds for recommended measures.

Economic Analysis

Audits must include a net present value calculation that accounts for projected savings and investment costs over the life of the measure. Calculations should use a current rate of return for tax exempt financing. Simple payback estimates must also be provided and all measures with a simple payback of less than 25 years should be presented in the audit report.

Audit Report

An energy audit report, whether done by PHA staff or external auditors, should contain the following sections:

a. Executive summary of recommended energy conservation measures;
b. Facility description;
c. Billing history analysis;
d. Comparison of normalized energy use among developments;
e. Discussion of the approach, analytical methods, and calculations (both engineering and economic);
f. Equipment inventories;
g. Raw data, measurements, and assumptions used;
h. Detailed discussion of each recommended measure;
i. Projected changes in unit and overall consumption; and
j. Priority schedule or action plan.

Selecting an Auditor

The energy auditor should be an energy engineer with experience in single and multifamily buildings and should have experience with the equipment and systems installed.

Investment Grade Analysis

Audits used for energy finance require additional accuracy and rigor:

Cost calculations. Costs should reflect actual construction costs, which can be determined from similar, recently completed work or cost quotations from potential trades contractors. The cost

estimates should include all work necessary to disable the current construction, gain access to the space, install the measure, and return the area to useful service.

Savings calculations. Savings should be supported by spot measurements and trend data for operating equipment. Room temperatures, hours of use, flow rates, and other data can allow the auditor ensure greater accuracy in results.

Audit cost. Investment grade audits cost more than a good engineering audit and significantly more than a HUD 5-year audit.

Use of software

Analysis can also be done with automated software, which can simplify analysis for an auditor and make audits more consistent across an audit team. There are numerous software programs available for analysis of savings. These programs provide an analytical engine to complete calculations but rely on an auditor to have sufficient expertise in building analysis to interpret the data used by the program and to assess the quality of the output. Audit software should model interactions between energy measures, calibrate its models to actual utility bill data, allow a wide range of equipment solutions for each utility type, and provide hourly load analysis. Auditors using software should be sufficiently trained it the software's use to ensure accurate results and recommended conservation measures.

END OF RECOMMENDED AUDIT SPECS

Worksheet 2: Sample RFP

Sample RFP

HUD Field Office **Date**

Public Housing Authority

Request for Proposal

Energy Performance Contracting Program

The Public Housing Authority (PHA) is seeking qualifications from interested Energy Services Companies (ESCOs) that are capable of providing comprehensive energy management and energy-related capital improvement services through an energy performance contract that will improve the energy efficiency of Authorities housing complexes.

For purposes of this document, an "energy performance contract" shall mean a contract for energy efficiency services and equipment in which the payment of the obligation is guaranteed by the ESCO under contract to be less than the energy cost savings attributable to the services of equipment under the contract, for the term of the contract.

The PHA is interested in contracting a full range of energy services and energy-related capital improvements (financed through a performance-based contract, guaranteed savings at no initial capital cost to them.) These services may include, but are not limited to: design, acquisition, installation, modification, maintenance and training in the operation of existing and new equipment, which will reduce energy consumption associated with the heating and ventilation system, the lighting system, the water system, and other energy using devices.

Project Overview

1) The PHA owns and operates 2,551 conventional public housing units. PHA's public housing inventory consists of six high-rise complexes, seven elderly low-rise or garden complexes, thirteen family townhouse complexes, two family low-rise or garden complexes, and approximately 380 scattered site units.
2) A detailed listing of all PHA properties is included in Attachment A. .

To be edited for specific PHA.

General Information

1) All energy performance contracts must comply with U.S. Department of Housing and Urban Development (HUD) regulations as defined in 24 CFR 990 and 24 CFR 965.

2) No contract shall exceed twelve years in duration.
3) Only energy performance contract proposals based on a guaranteed savings agreement will be considered.
4) It is expected that the savings or guarantee(s) provided by the ESCO selected pursuant to this RFP will fully offset the PHA project costs. Proposals should define arrangements for acquisition, financing, and ownership of equipment to be installed as part of this project that responsibly maximize the net economic benefit to PHA or reduce the risk**.**
5) Proposers may include financing provided directly by the ESCO or through a third party where doing so will be advantageous.
6) The ESCO selected, as a result of this RFP will be expected to provide comprehensive energy services, including but not limited to:
   a) The performance of an investment quality comprehensive energy audit. The services must include an audit of current consumption and systems within the Authority. The energy audit should be completed utilizing a building energy use simulation software package similar to one of the following:
      i) DOE-2
      ii) Power DOE
      iii) EZDOE
      iv) Visual DOE
      v) TRACE 600 (Trane Air Conditioning Economics)
   b) The design and specification of energy efficient equipment and systems.
   c) Services associated with the procurement, installation, and commissioning of new energy efficient equipment.
   d) Preventive and emergency maintenance and servicing of the equipment installed.
   e) Training facility staff with respect to routine maintenance and operation of all improvements.
   f) The ESCO shall identify and secure financing for the project.
   g) Energy savings performance guarantees.
   h) The ESCO must work cooperatively with PHA staff in coordinating this project.
   i) Financial incentives and rate reductions available from companies supplying fuel oil, natural gas, electricity, or transmission and associated distribution services in compliance with HUD's rate reduction incentive regulations.
   j) The report shall rank all measures with **25-year paybacks** or less, by project, listing the construction cost, energy usage and cost savings, the proposed metering configuration, proposed verification methodology and application of weather adjustments. A sample format is attached, Attachment B.

Procurement Process

The PHA will select an ESCO to implement PHA's Energy Performance Contracting Program through the following process.

1) **Site Visits.** Interested firms are required to view representative complexes of PHA's inventory. The site visit will also provide ESCOs the best opportunity to question PHA staff about the project and PHA's public housing inventory. PHA will provide up to two site sessions. The first session will take place on April 22, 2003. Dependent upon the response to this RFP a second session will take place on April 23, 2003. Interested ESCOs must contact PHA to obtain the date, time and location of the site visit. Please contact John Doe at (123) 456-7890 to obtain site visit information.

To be edited for specific PHA.

2) **Submission of Written Qualifications.** ESCOs will be required to submit a qualifications and cost based proposal to PHA for review. The requirements of the proposal are described in detail in Section s V. The PHA will select key staff within the agency to serve on a selection committee. The Selection Committee members will be responsible for individually reviewing and evaluating proposals. Proposals will be reviewed and ranked based on the scoring criteria established in Section IV. The topped ranked ESCOs will be invited to the second phase of the selection process.

3) **Interview and Presentation**. The top rated ESCOs will be asked to prepare a brief presentation of the firm's experience with energy performance contracting. Upon the conclusion of the presentation, the firm will participate in a detailed interview to further discuss the firm's qualifications, experience, and approach to the project. The evaluation of the interview will be based on the criteria established in Section IV. Presentation and interview time will be limited to 60 minutes per ESCO.

4) **Selection of ESCO - Audit –** The PHA will select the highest rated firm to conduct a complete technical analysis of PHA's public housing inventory and propose costs and contract terms concerning a complete set of proposed energy improvements, the timetable for completing engineering and construction work, a detailed description of services to be provided, specific financing arrangements and terms, and an estimate of energy savings, as well as special conditions offered by the firm. The PHA intends to negotiate a final contract for these services, which includes a minimum savings guarantee. If an acceptable contract cannot be reached within 60 days from the date of ESCO selection, negotiations with the second-ranked ESCO may be initiated.

5) **Selection of ESCO - Energy Performance Contract** - At the completion of the audit, the findings in the audit shall be presented to PHA. The ESCO shall develop and propose an energy performance contract/program based on the information gathered through the audit. At this point, the PHA may either choose to enter into the energy performance contract or decline.

   If the PHA decides not to enter into an energy performance contract with the selected ESCO after the audit has been accepted, the Authority agrees to pay the cost of the audit, provided that all proposed contract terms offered by the ESCO meet the conditions set forth in this RFP.

IV. The Selection Process

1) Timetable

a) Receipt of Proposals:

b) ESCO interviews:

c) ESCO Selection:

d) HUD Approval:

e) Contract execution:

To be edited for specific PHA.

2) Proposal Evaluation Criteria – Proposals will be evaluated and scored on the basis of the following criteria:

a) Qualifications and Project Experience Rating {Maximum 20 points}

Points will be awarded based on documented number of local staff, number of licensed or certified professionals, approach to project management, subcontractor selection and financing approach.

Points will be awarded based on demonstrated experience with similar projects. Experience with similar projects will be understood to include development of performance contracts to furnish energy services in institutional or commercial facilities of similar size, systems, and use.

b) Staffing Plan {Maximum 20 points}

Points will be awarded based on documented technical and project administration skills, licensure, certification and experience of the proposed project team. Only those individuals proposed to work directly on the subject project should be included in the Staffing Plan. Consistency of staff in the example projects and the proposed team should be ranked higher. Also, project teams that are primarily or completely composed of staff from the proposer or related companies should be ranked higher.

c) Technical Capacity {Maximum 40 points}

Points will be awarded based on the quality and comprehensiveness of the technical approach, compliance with HUD requirements, sample energy audit, description of the energy baseline methodology, description of measurement and verification methodology, and the preliminary assessment of the energy efficiency opportunities in the sample facilities.

d) Financial Terms {Maximum 40 points}

Consideration will be given to proposals that responsibly maximize the net economic benefit to the Authority over the term of the energy services agreement, and that responsibly minimize the risk to the Authority in connection with the proposed transaction. The savings or guarantees provided by the ESCO selected pursuant to this RFP will fully offset the project costs involved for the Authority.

Overhead costs will be evaluated for the value brought to the Authority by the proposed approach to project implementation. The percentage of non-HUD incentives that will be given to the Authority will be considered in evaluation of the financial benefits of the proposal.

e) Proposed Project Schedule {Maximum 20 points}

Proposals will be evaluated on the reasonableness, clear presentation, length and detail of the proposed project schedule. The proposal should include descriptions of how the proposer intends to achieve the project schedule.

f) Interview {Maximum 20 points}

Interviews will be held with up to three top ranked ESCOs to obtain clarification on issues raised by earlier stages of the evaluation process, and to assess the qualifications of the project team and its ability to implement all tasks and responsibilities in a prompt and efficient manner. Scores assigned for proposals, under any category, may be amended based on information obtained during the oral interviews. The proposed project team should be made available during the oral interview to discuss their individual experience, as well as their specific role in this project.

V. Proposal: Format and Contents

1) **Proposal Format –**

a) Proposals must be submitted in the format outlined in this section. The Authority reserves the right to eliminate from further consideration any proposals deemed to be substantially or materially non-responsive to the requests for information contained herein.

b) Proposals are to be submitted on or before Tuesday, December xx,xxxx, 2:30 P.M.

c) An original and two copies of the proposal are required. To prevent opening by unauthorized individuals, your submittal should be identified on the envelope as follows:

PROPOSAL ENCLOSED
TIMED MATERIAL

Energy Performance Project

d) The proposals shall be addressed to:

HOUSING AUTHORITY
ADDRESS

City, State, Zip Code

2) **Proposal Content**

a) **Section 1 - Statement of Qualifications** - Proposer must include the following elements in response to this RFP:

i) Name and address of firm

ii) Telephone and fax numbers.

iii) Names, titles, and e-mail address of two people authorized to represent the firm on this project, and answer any questions presented.

iv) Year firm was established.

v) Quantity and type of licensed and/or certified professionals in local office within 100 miles of the Authority. If your firm does not have a local office, discuss the

mechanism that will guarantee the local support services necessary for completing and servicing this project through the term of the contract.

vi) Approach to project management including make-up of the project team and the proposed responsibilities of the project team members.

vii) Describe the process to be followed in selecting and managing subcontractors.

viii) Description of the proposed project financing approach.

b) **Section 2 - Project Experience** - Proposer must describe three projects that best exemplify the range of technical and financial services provided by the ESCO for a project similar to this one. Each project description (not to exceed 2 pages) should include:

i) Customer's name and address

ii) Total contract cost.

iii) Type of contract; guaranteed savings, no guarantee, etc.

iv) Name and telephone number of references for the project. (Authority presumes permission to contact).

v) Brief description of the project's scope of services and status. (Include type of facility at which project was implemented, whether the project was completed on the original schedule and whether significant problems occurred that affected project performance. As appropriate, identify all prime contractors or subcontractors and their role in each project.) This section should be used to demonstrate the firm's experience in completing a project using the technologies relevant to the Authority's facilities.

vi) Energy use and costs prior to project implementation.

vii) Level of projected annual energy cost savings and annual levels actually achieved.

viii) Identify members of the proposed project team involved with the sample projects and their current primary office location.

ix) Type of HUD incentive utilized: Freezing the rolling base or Add-on subsidy.

x) Type of verification methodology utilized: Actual consumption vs stipulated.

c) **Section 3 – Staffing Plan** - This section should include a complete description of the individual experience and qualifications of the proposed project staff. The staffing plan should include name, title, experience and relevant duties of each individual active in this specific project. No credit will be granted during the evaluation process for the experience of anyone who will not be directly involved in implementing this project.

In addition, any subcontractors the ESCO intends to use for the project shall be identified and their role(s) described. Provide subcontractor's name, address, contact person, phone number and relevant experience.

Examples of subcontractors that shall be identified include but are not be limited to:

i) Architectural/engineering firm that will be responsible for project design.

ii) Energy auditing firm.

iii) Construction manager.

d) **Section 4 – Technical Capability**

i) In a Section to be labeled Section 4-1, the proposal must explain the approach your organization will take in delivering the comprehensive technical services required to audit, design, install, and maintain the proposed energy efficiency improvements. Actual designs/specifications are not required at this time.

ii) In a Section to be labeled Section 4-2, describe the Comprehensive Energy Audit that will be conducted for this project after selection of an ESCO on the basis of this RFP. Your proposal must include information on the systems to be covered, the personnel to be involved and the general method to be used. Provide, as an attachment, an abridged copy of the Comprehensive Energy Audit developed for one of the three example projects listed above. The example audit provided should be similar to the Comprehensive Energy Audit anticipated for this project.

iii) In a Section to be labeled Section 4-3, describe in detail the method you will use to compute the energy baseline. Attach a sample computation from a previous project done by your firm, with full documentation of methods, assumptions and input data.

iv) In a Section to be labeled Section 4-4, describe your firms understanding of:

(1) Resident paid utility allowances, the affect they have on this type of program, and your comprehension of 24 CFR 965 subpart E;
(2) The three typical HUD incentives for energy cost reduction and which methodology is most utilized by your firm, how they interact and why an incentive is chosen;
(3) Explain how your firm contractually deals with utility unit costs in relation to the financial savings created by your programs;
(4) Measurement and verification techniques utilized by your firm to establish and report on guaranteed savings;

e) Section 5 - Financial Terms

i) The Authority seeks to structure the contract such that payments to finance the total project cost plus payments for ongoing incremental project maintenance to be paid in full by the value of measured energy savings resulting from the project. The proposer may propose any underlying project financing mechanism so long as it meets the objectives above and complies with HUD and State laws, rules, and regulations.

ii) The Authority shall participate in the competitive bidding and selection of all construction contractors. Construction bids will be reviewed with the Authority and contractor selection will be jointly determined between the ESCO and the Authority. The Authority shall approve the bid documents and any subsequent addenda required prior to release. If the proposer is intending to provide a portion or all of the construction utilizing their own personnel, the process by which the assurance of a competitive construction cost will be insured shall be described in detail. None of the ESCO's expenses and/or overheads shall be included in any way as part of the construction bids. A signed certification statement shall be required from the ESCO stating this is true.

iii) For the purpose of calculating the overhead and profit percentages below, the unburdened construction cost shall be defined as the value of the construction bids

received from the construction contractors without any additional mark-up by the ESCO.

iv) Detailed financial information required in this Section includes the following estimated costs that are based on the information provided in this RFP.

(1) Energy Performance Project Implementation Costs:

(a) Comprehensive Energy Audit: $_____

[Show costs b-h as a percentage of <u>unburdened</u> construction cost.]

%

(b) Designs and specifications (A/E Fees)

(c) Administration

(d) Cost of Risk

(e) Construction Management

(f) Hazardous Waste Administration

(g) Profit

(h) Training

(i) Any other overhead costs (specify)

Note: The PHA will not pay for any additional costs above the unburdened construction cost that are not identified in the proposal.

(2) Ongoing Project Management Costs (as % of unburdened construction cost):

(a) Service Agreement/Maintenance costs:

(b) Energy savings measurement and verification costs:

(c) Other service fees (specify):

v) Include two hypothetical examples to clarify the use of these mark-ups.

(1) A standard lighting upgrade.

(2) A typical boiler replacement.

f) **Section 6 – Proposed Project Schedule -** The proposer must provide a complete schedule for achievement of all major project milestones including but not limited to:

i) Commencement and completion of energy audits.

ii) Preparation of list of proposed improvements, baseline calculations, and final contract proposal.

iii) Obtaining all required permits and government approvals.

iv) Procurement of all major equipment.

v) Commencement and completion of construction.

vi) Training of facility personnel.

vii) Commencement of normal operations.

g) **Section 7 - Official Statement of Proposer -**The proposer shall include a statement to the effect that the proposal is a firm offer for a minimum 120-day period. The proposal shall also provide the: name, title, address, and telephone number of individual(s) with authority to negotiate and contractually bind the company and also who may be contacted during the period of proposal evaluation.

Contract Negotiations and Contractual Provisions

With the acceptance of the audit and proposed program, PHA and the ESCO shall enter into a formal program contract that shall include the following points or provisions:

1. The contents of the RFP submission become part of the final contract.
2. Certifications and Representations of Offerors, Non-Construction Contract, form HUD-5369-C, Attachment C.
3. General Contract Conditions, Non-Construction form HUD-5370-C, Attachment D.
4. PHA retains final approval over the scope of work and end-use conditions.
5. The ESCO must provide a final schedule of project milestones including equipment-servicing provisions, which will become part of the final contract. In the event any milestone or equipment servicing provision is not met as scheduled, without prior approval, PHA reserves the right to consider it as default and withdraw from all contractual obligations without penalty.
6. The ESCO must carry an appropriate level of insurance for the construction and operations phase, as well as the monitoring phase. At a minimum the ESCO must carry a Comprehensive Liability Insurance Policy, Worker Compensation Policy, and an Automobile Liability Policy. The ESCO must provide PHA evidence of the insurance. Additionally, PHA must be named as an additional insured party on the policies on the Comprehensive Liability Insurance, and the coverage shall indemnify PHA against all claims and demands for injury, death or damage as a result of the negligence of the ESCO and/or its subcontractors, employees, agents, licensees, or invitees, in the performance of the contract.
7. The ESCO shall provide to PHA assurance of completion in the form of separate performance and labor and material payment bonds, each in the sum of 100% of all subcontracts.
8. The PHA must have access to inspect, test and approve both the work conducted in the facility, during construction and operations, as well as access to the books, records, and other compilations of data that pertain to the performance of the provisions and requirements of the agreement. Records shall be kept on a generally recognized accounting basis, and calculations kept on file in legible form.
9. The ESCO will fully disclose all costs, including the cost of subcontractors, vendors, and materials.
10. The ESCO will be responsible for maintaining the levels of comfort for each building as specified. Persistent failure to maintain the defined climate and lighting conditions will constitute a default.

11. All drawings, reports and materials prepared by the ESCO specifically in performance of the contract shall become the property of PHA and shall be delivered to PHA as needed or upon completion of construction.

12. All work completed under this contract must be in compliance with all New York State and Local building codes.

13. The selected firm must hold appropriate accreditation, certification and licensing standards to perform work in New York State and the City of Buffalo.

14. PHA shall reserve the right to renegotiate the awarded contract if changes in the regulatory or utility climates or if the PHA's use of energy warrant it and/or permit the addition of sites to the contract.

15. At the time of contract expiration, PHA will have the option either to renegotiate the contract, subject to HUD approval, or terminate it without penalty.

16. The contract must meet applicable HUD procurement requirements found at 24 CFR 85.36.

17. The contract and program must meet applicable HUD operating subsidy requirements found at 24 CFR 990.110, as well as applicable energy performance requirements found at 24 CFR 965.308

Technical Requirements

The contract shall also address or acknowledge the following:

1. Specific standards of comfort will be defined and must be maintained throughout the term of the contract.
2. A registered professional engineer must, at a minimum, review and approve design work done under this contract.
3. PHA requires a minimum guaranteed savings approach to the project. If the project does not generated the guaranteed level of savings in any given year, the ESCO will be responsible for reimbursing the Authority the amount of the shortfall necessary to pay for annual project financing and all related contract obligations.
4. The ESCO will be required to work with the current building management and maintenance personnel in order to coordinate construction and provide appropriate training in retrofit operation to PHA personnel and residents. No equipment shall be installed which would necessitate the Authority hiring additional personnel unless contract negotiations produce an explicit exemption from this provision.
5. The ESCO must provide mylar, reproducible "as built," and three (3) sets of record drawings of all existing and modified conditions associated with this project, conforming to typical engineering standards. These should include architectural, mechanical, structural, and control drawings and operating manuals. Drawings must be provided to the Authority within 30 days of the completion of installation. Moreover, if these drawings are produced on a computer, the ESCO will also provide to the Authority a copy of the file and one licensed version of the program used to produce the drawing.

6. At least three (3) maintenance manuals per complex will be provided for all equipment provided under the contract. Manuals are subject to the approval of PHA.
7. At least three (3) copies of record product data will be provided to PHA for each location.
8. Upon the completion of the final contract, the ESCO shall provide PHA a single comprehensive schedule of necessary preventative maintenance for all installations for the five (5) years following the contract closeout.

Other

PHA reserves the right to reject any or all submissions for any reason whatsoever.

PHA reserves the right to waive informalities and minor irregularities in submissions received and to accept any submission if deemed in the best interest of PHA to do so.

Labor Laws

The selected ESCO shall obey and abide by all the laws and regulations of the State of New York and the U.S. Department of Housing and Urban Development relating to the employment of workers for construction and capital improvement projects.

The ESCO agrees not to discriminate against any employee or applicant for employment, to be employed in the performance of this Agreement, with respect to hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of age (except where based on a bona fide occupational qualification), sex (except where based on a bona fide occupational qualification) or race, color, religion, national origin, or ancestry. The ESCO further agrees that every subcontract entered into will contain a provision requiring non-discrimination in employment, as herein specified, binding upon each subcontractor.

All State Laws and Regulations, regarding the prevailing wage rates will be adhered to

Assignment or Subletting of Contract

In the execution of the performance contract it may be necessary for the ESCO to sublet part of the work to others; however, the ESCO shall not award any work to any subcontractor without prior written approval of PHA, which approval shall not be given until the ESCO submits to PHA a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as PHA may require.

The ESCO shall be fully responsible to PHA for the acts and omissions of subcontractors and of persons either directly or indirectly employed by the subcontractors, and for the acts and omissions of persons directly employed by the ESCO.

Nothing contained in this Agreement shall create any contractual relation between any subcontractor and PHA.

The ESCO shall not assign, transfer, convey, or otherwise dispose of this Agreement, or any part hereof, or high right, title or interest in the same or any part thereof, without the previous written consent of PHA. The ESCO shall not assign by power-of-attorney, or otherwise, any of the moneys due or to become due and payable under this Agreement, without the previous written consent of PHA.

Attachments *(note: these are suggested in the sample but not provided in this procedure)*

Attachment A - PHA Property Listing.

Attachment B – Sample Cost Summary Form.

Attachment C - Certifications and Representations of Offerors, Non-Construction Attachment
Attachment D - General Contract Conditions, Non-Construction, form HUD-5370-C.

Attachment E – Form HUD 52722A

Attachment F – Current utility allowance schedule.

END OF SAMPLE RFP

Worksheet 3: Energy Conservation Measure Worksheet

Housing Authority:
Field Office:

#1	**Energy Conservation Measure:** {brief title}
Project Number:	**Project / Site Name:**
Recommendations: {Detailed description of improvement}	

Costs & Savings:

		Units
Installation Cost		$
Total Energy Cost Savings		$
Useful Life Of Equipment		Years
Simple Payback Period		Years

END OF ENERGY CONSERVATION MEASURE WORKSHEET

Worksheet 4: Yearly PHA Certification

PHA Name:

- ✓ The submitted utility consumption data has been reviewed and is accurate.
- ✓ There have been **NO** physical improvements performed at the effected sites within the last year that would have effected the baseline calculations.
- ✓ Other physical improvements conducted at the effected sites included:

Project Number	Physical Improvement

- ✓ Prior written approval will be obtained from HUD before the bid document design of any physical improvement that would effect the baseline calculations.

Signature Executive Director Date

Signature Financial Officer: Date

END OF YEARLY CERTIFICATION WORKSHEET

Worksheet 6: Energy Performance Contract – HUD Checklist

1. Energy Conservation Measures

a. ☐ A spreadsheet is provided that lists each ECM measure by project including:

i. Energy savings, consumption and ECM cost,

ii. Current method of metering (master metered or retail metered).

iii. Verification Methodology - (IPMVP Options)

Comments:

2. Baseline Data

a. ☐ Baseline utility consumptions are clearly defined by utility, by month, for three years showing utility consumption and utility cost by project.

b. ☐ The PHA has reviewed and verified that the baseline data is correct.

c. ☐ The HUD Field Office has reviewed and verified that the baseline data correlates to the financial data as found on form HUD-52722-A.

Comments:

3. Cost Reasonableness

a. ECM

i. ☐ The ESCO can demonstrate competitive cost competition of each ECM. Recommend that three costs be obtained for each ECM and that the ESCO document their selection based upon "best value";

or

ii. ☐ A detailed cost breakdown is provided for each ECM. The cost breakdown shall comply with Federal Cost principles (similar to RS Means) and shall include:

1. Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs - when size of change warrants revision.
2. Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.

3. Profit.

iii. ☐ The PHA has reviewed and certified that the costs appear reasonable.

b. Other Costs

i. ☐ All ESCO costs are "full and open". A cost breakdown has been provided that defines:

Total Direct ECM Costs

Audit Costs

Design & Engineering

Construction Management

Resident Education

Monitoring and Verification

Overhead

Profit

Comments:

4. Financial –

a. ☐ An amortization schedule has been provided.

b. ☐ The HUD Field Office has reviewed the amortization schedule.

c. ☐ A cash flow analysis has been provided to document a positive cash flow.

i. ☐ Documentation has been provided to support that all "escalated" rates are reasonable. Note: If rates are escalated, then the ESCO guarantee should also be escalated.

d. ☐ Any PHA contributing cost has been reviewed and is in compliance with 24CFR990 requirements. The HUD Engineer shall provide a written memo justifying the use of these funds as non-energy related components.

Comments:

5. Resident Paid Utilities

a. ☐ Waiver request has been received from the Authority.

b. ☐ Waiver request has been submitted to HUD Washington.

c. ☐ Existing utility allowances have been reviewed in accordance with 24 CFR 965 and determined accurate.

d. Yes ☐ No ☐ Does the contract involve the ESCO in the yearly review of the new utility allowances, ref. 25CFR965?

e. Yes ☐ No ☐ Does the contract require that the ESCO guarantee the Resident paid "actual" energy savings?

Comments:

6. Verification Methodology –

a. ☐ Any verification methodology other than "actual" (IPMVP, Option C) has been reviewed and approved by HUD.

b. International Performance Measurement & Verification Protocol (www.IPMVP.org)

i. Option A – Partially Measured Retrofit Isolation – Requires HUD Approval

ii. Option B – Retrofit Isolation - Required HUD Approval

iii. Option C – Whole Facility – Whole Facility – Recommend Approach

iv. Option D – Calibration Simulation – Not Allowed.

Comments:

7. Heating Degree Day adjustments –

a. ☐ HUD has approved the heating degree day adjustment methodology. Note: This adjustment is subject to HUD approval.

Comments:

8. Contract - Verification of Savings {ESCO to Housing Authority}

a. ☐ The contract clearly defines the content of the yearly reports and how the yearly energy savings will be calculated.

Comments:

9. HUD - Verification of Savings {Housing Authority to HUD}

a. ☐ Both the HUD Field Office and the PHA clearly understand the procedural process that HUD will require to verify energy savings for each year of the contract.

Comments: