**(Agency/Site) Energy Savings Performance Contract**

Installed by (ESCO)

(Contract Title)

Contract Description

**ESPC Life of Contract Plan:**

**Site-level Performance Period Administration**

(Contract Number), (Date Amended), (Contributors)

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*Editor’s Note: Update Table of Contents upon every amendment of the LOC Plan for accuracy. To change the page numbers and/or headings on older versions of Microsoft Word software, right-click the table of contents and select “Update Field”.*

# Purpose

The purpose of this document, the ESPC Life of Contract (LOC) Plan is to provide guidance to agency personnel during the post installation performance period of a Department of Energy (DOE) Energy Savings Performance Contract (ESPC) project. This document will assist the Agency in effective ESPC project administration and management. This document is intended to be a guide and may be modified by the agency to fit specific needs and procedures.

When the installation is complete and the acceptance period has begun, the Agency should start collecting all the necessary information for project management during the performance phase of the contract. This includes vital contract documents, descriptive contractual data on which party will conduct Operations and Maintenance (O&M), Preventative Maintenance (PM), Repair and Replacement (R&R), and the Measurement and Verification (M&V) Plan for the performance period, and includes the specifics of which party, agency or Energy Services Contractor (ESCO), will conduct the oversight of these operations. The post-installation document submittals, as they become available, also need to be collected and retained. Examples include the Post-Installation M&V Report and Commissioning Report. This plan provides suggestions on means to track and control these documents, as they are critical to performance period project management.

The data contained herein becomes the basis for the performance period management, operation and control. Annual M&V true-up activities to confirm or modify contractor payments will require a comprehensive working knowledge of all of the information contained herein.

## Template User Guidance

This workbook is structured to provide all the information to the Contracting Officer Technical Representative (COTR) for management of the project during the performance period. This is accomplished first by a checklist to ensure the workbook is properly set up and the data from the contract, the design, and the construction efforts are inserted to allow transfer of the initial information to the performance period COTR. A second checklist is provided to give the COTR a list of annual activities that must be accomplished to properly manage the contract. A series of forms, charts, and figures are provided in each area of concern to assist the COTR in capturing vital information and ensure its availability during the course of the project. The DOE may provide training and assistance to the COTR in the initial setup of the data in the forms and may assist by providing guidance in the first year of the performance period. The above-mentioned checklists are found in Appendices A and B.

# Introduction

The intent of the Life of Contract Plan is to capture the performance data from the acceptance phase of the contract, to provide guidance on how to manage the contract for its remaining term to ensure proper performance of the equipment and the verification of the savings guarantees for the life of the contract.

The monitoring process begins with the Measurement and Verification (M&V) process which records and documents the parameters necessary to confirm savings. The monitoring process must also provide assurance, with documentation, that all necessary maintenance is accomplished on the installed equipment to ensure retention of savings respective to operating capabilities. Data collection will be organized into a chronological set of activities designed to:

* Document the equipment, the performance and the savings verification data that are produced from the commissioning along with the post installation reports, witnessing, and testing. This data verifies the performance of the as-installed systems/equipment and is the first determination of the amount of savings that are projected to be achieved.
* Document the O&M requirements and the R&R requirements so that the Agency can determine, monitor and verify that the actions are accomplished as required to maintain the equipment performance, ensuring that the savings are realized. Note: both of these requirements may include training for the Agency by the ESCO.
* Define the activities suggested to support annual M&V verification and true-up processes to allow confirmation that all testing/inspections are accomplished and the M&V report can be accepted or rejected annually for the life of the contract.
* Include instructions on how to resolve savings deficiencies and/or use and control escrow accounts.

The function of the LOC Plan template is to serve as a step-by-step user guide for the initial development of the document to capture the contract and point of acceptance data for each project. The DOE may provide assistance in the development of the report to be delivered to the Contracting Officer Technical Representative (COTR) with instruction on its future use, including the guidance and management of the contract for the life of the contract.

This document is to be built during the post-installation acceptance phase. It will then be presented to the Agency within 60 days after receipt of associated reports and an updated version will be presented to the agency including the first year M&V data within 60 days after receipt of the first year M&V report. At the time of the submittal of this document to the Agency after the first year M&V, the DOE may review the document with the Agency to ensure completeness and provide the Agency with a understanding of their responsibilities as they relate to annual Agency updates to this document for the remainder of the period of performance and life of the ESPC.

The Contracting Officer (CO) and the COTR can use the document to assist in monitoring and documenting the performance period activities during the contract performance period for the contract term. The document can also be used to train and assist any Agency personnel replacements during the contract term.

Finally, at the discretion of the agency, this document will either contain the necessary data for contract maintenance or will record the location of the data.

## Data Preparation, Annual Review and Storage Guidance Overview

Key correspondence and project documents should be kept and stored in a safe and easily accessible location. This LOC Plan provides both control for capturing what is necessary from both a project management and an M&V perspective, and also provides a Documentation Matrix to assist the agency in managing these documents. Some of the potential activities that may be provided by DOE are included in the bullet point list below:

* The DOE may collect the performance data from the Contract, Implementation, Testing, Witnessing, Commissioning and Acceptance efforts, and compile the information necessary to complete the workbook prior to turning the workbook over to the COTR or person charged with the ESPC Performance Period operation for the Agency.
* The DOE may review the workbook with the Agency personnel, training those person(s) to ensure understanding of the contents of the workbook. It will be the agency’s responsibility to ensure proper conduct of O&M, R&R, Inspections and Monitoring will be conducted.
* The DOE may collect and attach or insert the contractual data on savings from the first year of the contract, as well as any savings accrued during the construction period for ECMs which are completed and accepted for beneficial use. These savings accrue during the construction period, but prior to total project completion. These energy savings are payable after total project completion and acceptance of all ECMs, or as ECMs are individually accepted.
* The DOE may notify the agency that the construction period savings should be verified prior to acceptance. The M&V process will annually provide the data that is used for verification of achieved savings for each year of the contract performance period.
* The DOE may initially insert the initial Points of Contact (POC) for DOE and the ESCO Personnel. The Agency shall insert the Agency POCs and be responsible for maintaining an up-to-date POC list for the life of the contract.
* The DOE may review the responsibilities for O&M, including Preventative Maintenance (PM), and R&R for the COTR, ensuring identification of which party is responsible for each activity. The party not responsible for the conduct of each activity is then responsible for monitoring and inspecting the efforts of the other party to ensure the work scope is accomplished to the respective agreement and plans, but the ultimate responsibility for performance remains with the ESCO.
* The DOE may review and insert the results from the first year of M&V, and review the analyses with the Agency COTR. This activity may set up the process to be followed for the remaining years of the performance period. When completed, the DOE may re-issue this document to the COTR and review the annual processes that the COTR must perform.

The Agency COTR shall be responsible for maintaining all charts and forms current for the remaining term of the contract. DOE services may be provided for periods beyond the first year if the Agency determines more assistance is required to support administration of the contract upon agreement with DOE.

## Additional Guidance in the LOC Plan Appendices

Checklists are presented in Appendix A to assist the Agency to ensure the template is fully prepared for the Agency’s use in the Performance Period of the contract. The Agency will follow in the identification and accomplishment of the tasks required each year for the entire contract term. A second checklist is provided in Appendix B for the annual activities required by the Agency COTR to assist and give guidance, ensuring that the equipment is properly maintained, and all performance data is properly collected and recorded.

Storage location information for commissioning documentation is listed in Appendix C and the annual M&V Report paragraph is listed in the Section Titled “Measurement and Verification Plan from IGA”

Also included in the Appendices is information regarding ENERGY STAR Benchmarking should the agency seek ENERGY STAR ratings and building labels for its facilities (Appendix C).

# Witnessing

Several requirements exist that require the Agency, usually the COTR, to witness various activities by the ESCO. Witnessing includes observing the final inspections, acceptance and commissioning tests. The witnessing activities are especially essential to ensure that testing is accomplished per the test plans with calibrated test equipment and the results are as expected. All witnessing should be documented, and can be entered as noted in the following Witnessing Log. The FEMP Witnessing Guidance is available on the FEMP website (<http://www1.eere.energy.gov/femp/financing/espcs_resources.html>) and recommends a graded approach to witnessing.

Witnessing during the first year of performance may also include maintenance and preventative maintenance as it is performed per O&M plans, ensuring equipment operation is maintained at manufacturer’s specification levels, and R&R is accomplished in a timely manner, keeping the equipment operating as necessary to produce the estimated savings.

The witnessing requirement roles are theoretically reversed when the work scope responsibility has not been assigned to the ESCO. In this case, the COTR is responsible to ensure all testing, O&M, and R&R is performed as required, and it is prudent to notify and request the ESCO witness operations and/or work performed to minimize potential for disputes over accomplishments.

## Witnessing Log

|  |  |  |
| --- | --- | --- |
| **Action Witnessed** | **Name of Witness** | **Date of Witnessing** |
| *(Detailed description of inspection, test, or maintenance action and name of individual performing the inspection, test, or action)*  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Contact Information

*Editor’s Note: All contact information should be verified and updated annually.*

## Agency Contact Information

**Site Approving Official**

Name

Address

Telephone

Fax

Email

**Contracting Officer Technical Representative (COTR) \***

Name

Address

Telephone

Fax

Email

**Procurement Contracting Officer**

Name

Address

Telephone

Fax

Email

**Administrative Contracting Officer \***

Name

Address

Telephone

Fax

Email

**Administrative Contract Specialist**

Name

Address

Telephone

Fax

Email

**Resource Efficiency Manager**

Name

Address

Telephone

Fax

Email

***(Other Point of Contact)***

Name

Address

Telephone

Fax

Email

***(Other Point of Contact)***

Name

Address

Telephone

Fax

Email

***(Other Point of Contact)***

Name

Address

Telephone

Fax

Email

***(Other Point of Contact)***

Name

Address

Telephone

Fax

Email

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

**\*** Responsible for the LOC Plan document throughout the contract term of the ESPC, including maintenance of the contact information herein, starting immediately following year 1 of the performance period.

## DOE Contact Information

**DOE Contracting Officer Representative**

Name

Address

Telephone

Fax

Email

**DOE IDIQ Contracting Officer**

Name

Address

Telephone

Fax

Email

**DOE Federal Financing Specialist (FFS)**

Name

Address

Telephone

Fax

Email

**Project Facilitator (PF)**

Name

Address

Telephone

Fax

Email

**NREL Renewable Energy Screening Contact**

Name

Address

Telephone

Fax

Email

## ESCO Contact Information

**Primary Point of Contact**

Name

Address

Telephone

Fax

Email

**O&M Service Representative**

Name

Address

Telephone

Fax

Email

**Construction Supervisor/Manager**

Name

Address

Telephone

Fax

Email

**M&V Specialist**

Name

Address

Telephone

Fax

Email

**Emergency/Non Emergency Contact(s)**

Name

Address

Telephone

Fax

Email

***(Other Point of Contact)***

Name

Address

Telephone

Fax

Email

# Project Information

## General

The Task Order listing below identifies the total list of potential Energy Conservation Measure (ECM) Technology Categories (TCs) that are covered by the Indefinite Delivery Indefinite Quantity (IDIQ) contract for the project examined, listing those not included, as well as the ECMs that are active for this specific contract. The ESCO for this contract is encouraged to continually look for energy savings opportunities, and both the Agency COTR and the ESCO can use the list below for ideas and recommended areas for review. The active list consists of areas that have been upgraded and that require monitoring for the contract term. The total list may be updated at any time during the performance period to include ideas for additional conservation measures not implemented by the ESCO. Any changes in scope for active ECMs or additional energy conservation measures should be completed per the requirements of the DOE IDIQ Contract for all ESCOs (see Section H.3).

*Editor’s Note: Add Executive Summary from ESCO proposal here (LOC Checklist, Appendix A, Item 10) Provide general project information, including a brief description of work scope, award date and project goals and drivers. The proposed Executive Summary normally provides most, if not all, of this information.*

# Task Order (TO) Project Listing – Technology Categories

*Editor’s Note: Modify table as applicable by placing an X in front of any ECM that was installed by the ESPC Project (to be added from the final proposal as-built).*

|  |  |  |  |
| --- | --- | --- | --- |
| TC # | Active ECMs | TC ECM Title | Building Name/Number |
| 1 |  | Boiler Plant Improvements |  |
| 2 |  | Chiller Plant Improvements |  |
| 3 |  | Building Automation Systems (BAS)/Energy Management Control Systems (EMCS) |  |
| 4 |  | Heating, Ventilation and Air Conditioning (HVAC) |  |
| 5 |  | Lighting Improvements |  |
| 6 |  | Building Envelope Modifications |  |
| 7 |  | Chilled/Hot/Steam Distribution Systems |  |
| 8 |  | Electric Motors and Drives |  |
| 9 |  | Refrigeration |  |
| 10 |  | Distributed Generation |  |
| 11 |  | Renewable Energy Systems |  |
| 12 |  | Energy/Utility Distribution Systems |  |
| 13 |  | Water and Sewage Conservation Systems |  |
| 14 |  | Electrical Peak Shaving/Load Shifting |  |
| 15 |  | Energy Cost Reduction Through Rate Adjustment |  |
| 16 |  | Energy Related Process Improvements |  |
| 17 |  | Commissioning |  |
| 18 |  | Advanced Metering Systems |  |
| 19 |  | Appliance/Plug-load Reductions |  |
| 20 |  | Future ECMs (not currently authorized) |  |

## Guidance to Project Listings

The project listings above are provided for information and are useful in identifying both those ECMs that were installed by the project (marked as “Active”), and to show the total list of potential ECM technologies that are included in the IDIQ Contract.

## Continuous Improvement on ECM Projects

All Government Agencies are required to comply with the requirements of Executive Order (EO) 13423. Since the possibility exists that ESPC contracts do not initially accomplish the goals in one phase, some additional areas of improvement may be required in order to achieve the energy goals of EO 13423, the Energy Policy Act of 2005 (EPAct) and the Energy Independence and Security Act of 2007 (EISA 2007). The above TO Project Listing can be very useful in identifying potential sources for energy conservation.

One main area of potential is Renewable Energy and other emerging technology energy conservation alternatives that are becoming more economically feasible as technology advances. These areas should be reviewed and updated for possible inclusion into the Agency’s energy improvement projects to continuously progress toward minimum energy procurement from outside sources. The COTR should, at a minimum, fill out the form for renewable energy screening and submit it to the DOE NREL contact every 5 years after acceptance of the ESPC contract. This will allow the facility to remain cognizant of renewable energy potential with the latest technology. The screening form is in the Appendix J of this document.

New opportunities for energy conservation, including energy production via renewable energy resources, must be completed per the requirements of the DOE IDIQ contract.

# Awarded Project Overview

The following table represents the top-level information about the project, and is useful in terms of publicizing and/or recording the basic parameters of the project. It also gives guidance to the first payment funds that come from construction period savings, utility, city, county and state provided incentives and/or agency funding.

*Editor’s Note: Add dates and data of conditional acceptance as it applies and document separately.*

|  |  |
| --- | --- |
| Agency Contract Number/Date |  |
| Total Project Cost (Financed Amount) |  |
| ESCO IDIQ Contract Number |  |
| Pre-Performance Period Payments |  |
|  Construction Period Savings |  |
|  Incentives received |  |
|  Agency Funds Applied |  |
| Total Project Value (TO-1 or TO-3 totals) |  |
| Contract Term (Years) |  |
| Project Interest Rate (%) |  |
| Escrow Account Interest Rate (%) |  |
| Total Square Footage Affected (Sq. Ft.) |  |
| Design & Construction Period (Months) |  |
|  Actual Start Date |  |
|  Actual Final Acceptance Date |  |
|  Conditional Acceptance Applies | Yes/No |
| If Conditional Acceptance, describe: |
| *Editor’s Note:*1. Conditional acceptance may apply to items that are completed out of season and are untested until they enter their operational season, such as chillers ECMs completed in Mid-Winter or Boilers in Mid-Summer. The equipment should be tested under actual load. A form for conditional acceptance and/or acceptance for beneficial use prior to total acceptance is provided in Appendix I. This form can also be used to track punch list completion.2. All information within this Table comes from the financial cash flow information in schedules TO-1 through TO-5 within the ESCO Price Proposal for this project. See TO-3 for most of the data requested above.  |

# Savings Summary

Schedule TO-4 summarizes the savings calculations made by the ESCO for each ECM, and includes delineation of savings in both energy units and dollars by each energy commodity. These data elements are presented herein for information purposes in the event that problems with savings realization occur. The data would then assist in determining where savings issues occur and where additional savings may be captured. ESPC savings payments, in general, will use the bundled approach that does allow an over-performing ECM to compensate for an under-performing ECM, as long as total savings for the annual true-up are realized. The data in this table also will assist the Agency in tracking the total of their improvements, by type of energy or commodity saved, or cost of energy reductions realized in the first year. The savings determination is typically made by using the measured energy consumption and the contractually identified method of energy rate escalation or actual energy rates.

The Savings Summary Table (TO-4) will be used to perform energy true-up calculations.

*NOTE: The previous DOE IDIQ contract (Valid from 1997, through December 2008) allowed energy rate escalation to be stipulated over the contract term by Agency agreement, and the energy rate risk was typically carried by the Agency. The (present) DOE IDIQ contract (Signed December 2008 and valid through December 2013 with an additional 5 year option) is silent regarding this risk; however, although negotiable, it is generally accepted that the risk stays with the Agency. Ultimately, the annual M&V true-up must be accomplished with actual rates as defined in the contract, either actual or as escalated contractually. The DOE may assist in review of this calculation for the first year M&V for each contract to ensure the proper procedure is followed by the ESCO. Follow-up M&V Reports should be reviewed by agency staff or agency sub-contractor staff cognizant of the M&V process.*

## Savings Summary – Schedule TO-4

The financial schedule form TO-4 is shown below, and should be replaced with the actual TO-4 schedule from the signed contract for the ESPC. This schedule shows the actual energy saved by each ECM in energy units, and also in first year estimated equivalent dollars for these energy units. These dollars are based on the ESCO’s estimated escalation of energy rates over the first year of the performance period. The energy rates are as defined in the contract.

*Editor’s Note: Add schedule/savings breakout from the contractual TO-4 document into this document.*

|  |
| --- |
| **SCHEDULE TO-4****Task Order Performance Period First Year Estimated Annual Cost Savings, by Energy Conservation Measure and Technology Category** |
|  Project Site: | Task Order#: |  Contractor Name: |  Project Square Footage (KSF): |
| TCNo.Att 2 | ECMNo. | a.ECM energy baseline(MBtu/yr) | b1.Electric energy savings(kWh/yr) | b2.Electric energy savings($/yr) | c1.Electric demand savings(kW/yr) | c2.Electric demand savings($/yr) | d1.Natural gas savings(MBtu/yr) | d2.Natural gas savings($/yr) | e1.Other savings(MBtu/yr) | e2.Other savings($/yr) | f.b1+d1+e1Total energy savings(MBtu/yr) | g.=b2+c2+d2+e2Total energy cost savings($/yr) | h.Other energy-related and O&M cost savings($/yr) | i.Water savings(1000 gal/yr) | j.Water savings($/yr) | k=g+h+-jEstimated annual cost savings($yr) | l.Implementation price($) | m=l/kSimplePayback(yrs.) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  TOTAL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# Documentation Matrix

## General Information

The Documentation Matrix identifies critical documents and provides the document storage location information. This matrix must be maintained and available to any person working on the project over the contract term. The contract term can be up to 25 years, which including the Design/Construction period. The following documents could be required, depending upon unanticipated requirements, to support the project should the need arise. The location of these documents and their status should be verified annually, since some documents may require updating during the contract term. Documents listed in the matrix that may not be applicable to a particular contract can be stated as such (e.g., if a Site Data Package was not completed as a part of pre-award documentation, it should be listed as not applicable (n/a) under the storage location. The Agency is encouraged to distinguish between documents that will be needed every year and those that could be filed in a safe and known place. Items to be used frequently could be tabbed appropriately for the sake of convenience.

|  |  |  |
| --- | --- | --- |
| Pre-Award Documents | **Storage Location (electronic and/or hard copy)** | **Responsible Party** |
| 1. Site Data – Government Generated
	1. Site Data Package (if applicable)
	2. Audit Studies/Surveys
	3. ESCO Selection Criteria
	4. Renewable Energy Data Input Form and Screen Report
 |  |  |
| 1. Preliminary Assessment (PA) & Contractor selection notification letter
 |  |  |
| 1. PA/Phase I ESCO Submittal
 |  |  |
| 1. Agency Specific Requirements/Agreements (if applicable)
	1. Energy Conservation Measure (ECM) Requirements
	2. Inter-Agency Agreements (IAG)/PF Work Order
 |  |  |
| 1. Notice of Intent (NOI) to award – Notice to proceed with IAA/Final Proposal/Detailed Project Development
 |  |  |
| 1. Congressional notification letter, if applicable (only if required by Agency procedure)
 |  |  |
| 1. Task Order (TO) Request for Proposal (RFP)
	1. Terms and Conditions
	2. Attachments
 |  |  |
| 1. Pre-negotiated ESCO Proposal/Investment Grade Audit including:
	1. ECM and Savings Description
	2. Measurement and Verification (M&V) Plan
	3. Management Plan
	4. Repair and Replacement Plan
	5. Financial Schedules and Supporting Data
	6. Meeting Minutes
 |  |  |
| Award Documents | **Storage Location (electronic and/or hard copy)** | **Responsible Party** |
| 1. Contract Documents
	1. Cover page of the DO/TO Award
	2. TO Terms and Conditions
	3. Negotiated Final ESCO Proposal
		1. ECM and Savings Descriptions
		2. Measurement and Verification (M&V) Plan
		3. Management Plan
			1. Repair and Replacement Plan
			2. Operations & Maintenance (O&M) Responsibilities
			3. Risk, Responsibility and Performance Matrix
		4. Price Schedules
	4. Contract Modifications
 |  |  |
| 1. Key Correspondence
	1. Meeting Minutes
	2. Project Schedules
	3. Review Comments & Responses
	4. Email Correspondence (e.g., text file)
 |  |  |
| Project Implementation | **Storage Location (electronic and/or hard copy)** | **Responsible Party** |
| 1. Drawings
	1. 100% Design/Red-lined
	2. As Built Drawings
 |  |  |
| 1. Installation Plan/Schedule
 |  |  |
| 1. Commissioning/Acceptance Test Plan(s)
 |  |  |
| 1. Key Correspondence
	1. Requests for Information (RFIs)
	2. Email Correspondence (text file)
	3. Review Comments & Responses
 |  |  |
| Final Submittals/Acceptance Documents | **Storage Location (electronic and/or hard copy)** | **Responsible Party** |
| 1. Commissioning/Acceptance Report
 |  |  |
| 1. Post-Installation Report
 |  |  |
| 1. Manuals (e.g., O&M)
 |  |  |
| 1. Training Documents
 |  |  |
| 1. Key Correspondence
	1. Requests for Information (RFIs)
	2. Email Correspondence (.pdf archives of emails /text file)
 |  |  |
| 1. Punch List(s)
 |  |  |
| Post-Acceptance Performance Period | **Storage Location (electronic and/or hard copy)** | **Responsible Party** |
| 1. Annual M&V Reports (Current year is in LOC Plan, reports are on-going)
 |  |  |
| 1. Repair & Replacement (R&R) Documents
 |  |  |
| 1. Operations & Maintenance (O&M) Documents
 |  |  |
| 1. Payment Records
 |  |  |
| 1. Key Correspondence
	1. Requests for Information (RFIs)
	2. Email Correspondence (text file)
 |  |  |
| 1. Utility Invoices (ongoing)
 |  |  |
| 1. Equipment Identification Document
 |  |  |

# Financial Schedules from Task Order (TO) Award

The following financial schedules, in terms of the performance period, define the payments, including M&V costs, debt service, and payments for O&M that are due to the contractor each year.

Schedule TO-1 contains, for each year of the contract, the total estimated savings for the ESPC, the ESCO’s Guaranteed Savings in terms of dollars, and the Payment Schedule. The ESCO Guaranteed Savings is compared to the actual savings received to determine if the ESCO met their guarantees or if the payment schedule requires adjustment. If guarantees are not met, the Government must recover over-payments which occurred during the previous year. This table reflects the influences of inflation and/or escalation of both energy costs and O&M expenses.

Schedule TO-2 is not essential to the management of the ESPC contract during the performance period and is shown for informational purposes only. All this information is duplicated in TO-1, 3 or 4, with the exception of the cost breakdown per ECM, which is not essential to post-installation period management.

Schedule TO-3 captures the annual cash flow for the project funding loan principle and interest as well as operational costs payable to the ESCO for work scope as referenced in the contract. This represents the distribution of funds in the Contractor payments from Schedule TO-1.

Schedule TO-4 shows the energy savings for each ECM of the contract. The savings in terms of energy units require annual verification per the M&V plan, and, combined with the annual energy rate analysis, determine the dollar value of actual savings. Comparison for guaranteed savings minus actual savings determines either accomplishment of guarantees or evidence of shortfalls if guarantees are not met. This analysis is an annual M&V requirement. Savings accomplishment is determined in a bundled condition so that over-performing ECMs can counter underperforming ECMs. This is accomplished by using TO Schedule TO-1, not Schedule TO-4. TO-4 can be used to examine the sources of any lost/low savings to determine if corrective actions are required.

Schedule TO-5 shows the annual cancellation ceiling for each year of the contract.

## Task Order (TO) Schedules

Schedule Number Title

TO-1 (final) Guaranteed Cost Savings and Contractor Payments

TO-2 Implementation Price by Energy Conservation Measure (*only in CO’s file*)

TO-3 Post-Acceptance Performance Period Cash Flow

TO-4 Task Order Performance Period First Year Estimated Annual Cost Savings, by Energy Conservation Measure and Technology Category

TO-5 Annual Cancellation Ceiling Schedule

Operations, Preventative Maintenance and Repair and Replacement Responsibilities List

## Day to Day Actions Summary

**Operations will be performed by:** *(specify ESCO or Agency Name)*

**Preventive Maintenance will be performed by:** *(specify ESCO or Agency Name)*

**Repair and Replacement will be performed by:** *(specify ESCO or Agency Name)*

**Equipment Identification**

All equipment that is addressed by the above personnel for operation, preventative maintenance, and repair/replacement should be identified and marked in some manner such that personnel from both the Agency and the ESCO can clearly determine which equipment is subject to the above stated decisions regarding these operational requirements. This can take the form of drawings, lists, or in complex equipment interfacing cases, by attaching bar codes to each piece of equipment. This is necessary so that each piece of equipment can be ensured of receiving the maintenance that it needs, regardless of who is responsible. The ESCO is responsible for the maintenance on all equipment that they install, regardless of who performs the maintenance, the ESCO or the Agency. Either can be identified in the contract as the responsible party.

The method for identifying the equipment installed by the ESCO shall be jointly agreed upon between the ESCO and the Agency.

**NOTE:** All O&M, R&R, and preventative maintenance responsibilities are defined in the contract, typically by ECM, and any descriptions of responsibilities listed herein should document the specific contract location where responsibilities are defined.

The identification method, in whatever form it is written, shall be titled, “Equipment Identification Document” and its location, for both the Agency and the ESCO, shall be maintained in the document locator list in the previous section.

## Operations

**General**

The following information is taken from ***(ESCO Name)*** Final Proposal, dated ***(specify date)***. For complete information pertaining to the operation agreement language, please refer to ***(specify applicable section of the Final Proposal for specific terms)***.

Operations will be performed by ***(specify who will be performing operations activities)***.

**Term**

***Specify date that operations will begin and term of obligation***.

**Operations Schedule**

Commencing upon the Date of Final Completion, ***(specify responsible party)*** will furnish the operations activities described in the Final Proposal with respect to the Covered Equipment upon the terms and conditions contained in the Final Proposal.

**Operational Log**

An operational log shall be maintained to note any variations in operations activities such as early turn-on or turn-off of equipment, bypassing of automatic controls, etc. This log shall be kept at or near the operator’s workstation and shall be available at all times for updating or inspection by either the Agency or the ESCO.

*Editor’s Note: In this section, provide a concise description of required operations activities. This section shall include an identification of the equipment, description of the activity, and the frequency of said activity. If an O&M manual is a deliverable under the contract, this manual shall be included here.*

## Preventative Maintenance

**General**

The following information is taken from ***(ESCO Name)*** Final proposal, dated ***(specify date)***. For complete information pertaining to the preventive maintenance agreement language, please refer to ***(specify applicable section of the Final Proposal for specific terms)***.

Preventive Maintenance will be performed by ***(specify who will be performing PM activities)***.

**Term**

***Specify date that preventive maintenance activities will begin and term of obligation***.

**PM Schedule**

Commencing upon the Date of Final Completion, ***(specify responsible party)*** will furnish the maintenance described in the Final Proposal with respect to the Covered Equipment upon the terms and conditions contained in the Final Proposal.

**Preventative Maintenance Log**

A log of all preventative maintenance activities shall be kept and all activities shall be recorded within as soon as they are completed. This log shall be made available for both the Agency and the ESCO to audit at any time.

*Editor’s Note: In this section, provide a concise description of required PM activities. This section shall include an identification of the equipment, description of the activity, and the frequency of said activity. If a Preventative Maintenance Manual is a deliverable under this contract, this manual shall be added here.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Equipment** | **Specific Location** | **PM Activity** | **Frequency** | **Schedule** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Preventative Maintenance Point of Contact (POC)**

*Provide POC, including name, organization, title, phone, fax, and email address.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Point of Contact** | **Organization** | **Title** | **Phone** | **Fax** | **Email** |
|  |  |  |  |  |  |
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## Repair and Replacement

**General**

The following information is taken from ***(ESCO Name)*** Final Proposal, dated ***(specify date)***. For complete information pertaining to the repair and replacement agreement language, please refer to ***(specify applicable section of the Final Proposal for specific terms)***.

Repair and Replacement will be performed by ***(specify who will be performing R&R activities)***.

**Term**

***Specify date that R&R activities will begin and term of obligation.***

**Repair and Replacement Log**

A log of all repair and replacement activities shall be kept and all activities shall be recorded within as soon as they are completed. This log shall be made available for both the Agency and the ESCO to audit at any time.

*Editor’s Note: In this section, provide a concise description of required Repair and Replacement activities. This section shall include an identification of the equipment, description of the activity, and the frequency of said activity. If a Repair and Replacement schedule is a deliverable under this contract, this manual shall be added here.*

**Repair and Replacement POC**

*Provide Point of Contact, including name, organization, title, phone, fax, and email address.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Point of Contact** | **Organization** | **Title** | **Phone** | **Fax** | **Email** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
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# Annual Project Savings to Date

## General Information

The Contractor Guaranteed savings data is found on Schedule TO-1. The actual savings data is produced by the M&V process each year and is carried forward to this document for record keeping purposes. Displaying this data can be useful in determining trends and anticipating problems and/or increased maintenance requirements. The year zero funds in this case are the construction period savings plus any incentives earned and/or any Agency applied funds *prior* to total project acceptance. If the equipment performs satisfactorily for the 30-day period prior to Full Acceptance, the Post-Installation Performance Period will begin. The savings data obtained at Post-Installation should document the As-Built operational savings. If this data is shown to be below the guaranteed savings, or if at any year the M&V process shows the project is below guarantee, either the contractor can, at their expense, introduce additional savings measures to make up the difference. The Agency must agree with these actions. Alternately, the payment stream can be either temporarily adjusted for short-term problems or permanently adjusted for deficient ECM performance. Since most ESPCs are paid in advance, recovery of monies paid is obtained by the reduction in payments over the next 12-month period following discovery of the deficiency. If deficient ECMs are found, the payment can be permanently modified to correct the deficiency by adjusting the payment stream downward such that payments do not exceed savings and any overpayments are recovered.

Savings can start within or at the end of the 30 days of successful performance after completion of the Post-Installation Performance Test. They can only be accumulated and applied to the contract if the equipment performs satisfactorily. It is to the Agency’s benefit to accumulate and apply savings as early as possible. Construction period savings are only paid when all ECMs have completed this testing and the 30-day performance period is complete. Any or all of the energy savings realized during the 30 days of the “successful operation” period may be applied to the contract payment stream if they are verifiable and if the systems are performing to design requirements and the level of performance is accepted. Any energy conservation incentive funds collected by the ESCO and any funds that the Agency applies to the contract are paid when invoiced at the start of the first year of the performance period. Additionally, ECMs that are completed and accepted for beneficial use prior to the completion of the total project can start accruing savings upon partial acceptance. These savings are defined as Construction Period Savings and can be paid as a Construction Period payment.

The chart and figure in the next section document the savings over or under the guarantee for each contract year. Monies in savings over the guarantee belong to the Agency. Monies not realized by a shortfall in savings, when trued-up at the year-end via the M&V process, are recoverable. Recovery of a shortfall is accomplished by a monthly, quarterly, or annual adjustment to contractor payments and is applied over the appropriate term.

All of the data in the table is bundled, on an annual basis, since an overage in one ECM can be used to compensate for a shortfall in another. Adjustments to the payment stream are normally unilateral by the Agency and are only made at the bundled level. Reconciliation, by negotiation, can be different from a 12-month period, but normally is accomplished over 12 months to allow the Agency, which normally pays in advance, to recover funds expended that M&V does not verify. The contract “Disputes Clause” should be used to resolve any problems.

## Reconciliation of Annual Savings and Payments

In the Table below, guaranteed savings are from schedule TO-1, Actual Savings, which, for the purposes of this section, can be defined as savings using contracted energy prices, are determined via the M&V plan annually.

The annual true up, using the results from the Annual M&V report is accomplished by comparing the actual savings received from the contract to the guaranteed savings from TO-1 for the year in review. There is no carry-over allowed from year to year. If a shortfall occurs and the savings are not realized, since payment is in advance as assumes savings are realized, it is necessary to recover over-payments by reducing the payments for the next 12 months. Shortfalls are not allowed to accrue past the end of the annual true-up period. The graph below tracks guaranteed and actual savings. If the graph continuously shows a shortfall, it is possible that a permanent reduction in payments may be in order.

**Reconciliation of Annual Savings and Payments Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Guaranteed Savings ($)** | **Actual Contracted****Savings ($)** | **Over/Under Percentage** | **Payment Adjustment ($/Month with time period)** |
| Zero |  |  |  |  |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| Etc. |  |  |  |  |

Savings Example Graph

*Editor’s Note: Instructions for generating this chart are on the following page.*

# Weather Conditions

***Editor’s Note:******Instructions for Generating and Updating Savings Chart***

**Current Version of Microsoft Office (.docx compatible)**

**Updating the example chart included in this document**

1. Right Click the chart
2. Select “Enter Data” to open corresponding Excel chart
3. Edit the axes, titles, units of measurement and numerical data as applicable

**For older versions of Microsoft Office (.doc compatible)**

**Creating Savings Chart in Excel**

Create a blank workbook in Excel

Add data to be used in graphing the chart. Two columns are typical; one for the x-axis labels, and one for the y-axis data. Note: Do not include column titles (if applicable)

Click and highlight the data to be used in the chart

Click Insert on the toolbar and then click Chart. Alternatively, you can click the Chart Wizard button

A Chart Wizard box will open and will present you with several different styles of charts.

Click and select the chart type and sub-type. Click Next to go to the next page.

Verify the data range and series format (rows or columns). Click Next to go to the next page.

Add chart and axes titles in the form boxes. Click Next to go to the next page.

Select the location for the chart to be displayed: as a new sheet or as an object in an existing sheet.

Click Finish to view your chart and go back to your Excel workbook.

**Embedding Savings Chart from Excel into Word**

1. Select the chart you want to copy.
2. Click **Copy** (right-click menu or the toolbar).
3. Switch to Microsoft Word.
4. Click in the document where you want to put the Excel chart.
5. Click **Paste** on the Formatting toolbar.
6. Click **Paste Options** next to the chart, and then do one of the following:
	* To paste the chart as a chart, so that when you double-click the chart in the Word document you can use Excel to edit it, click **Excel Chart**.
	* To paste a link to the Excel chart, so that the chart in the Word document is updated whenever you change the chart in the original Excel workbook, click **Link to Excel Chart**.
	* To paste a bitmap picture of the chart, click **Picture of Chart**. Note that this option will result in a static image of the chart and the graphical representation of the chart data will not be amendable inside of this document.

Savings should be normalized for weather, and are typically based upon historical and Typical Meteorological Year (TMY) data for the given location and measured per the M&V Option assigned to each ECM in the contract. The Risk, Responsibility and Performance Matrix typically assigns weather risk to the Agency. True-up is accomplished annually through the M&V process, though savings are not typically “adjusted” due to weather, but rather must be delivered despite the weather. Over-achieved savings from a good weather year may not be carried over or averaged with previous years, and may not be carried over or averaged to the following year(s). TMY data or other data used to determine weather normalization may be listed here, below, for reference purposes.

# Measurement and Verification Plan from Final Proposal

*Editor’s Note: Insert the Original Plan in Appendix K. It is best if the current year M&V report is also kept in this document appendix, following the M&V plan. Each year, the new annual report should be added and the last years’ report filed in the designated location so it can be easily and quickly retrieved as required.*

The Measurement and Verification Plan and the subsequent annual M&V reports describe the methodology for savings verification and present the justification data for the assessments. The M&V plan should always stay with this document, along with the latest or current year M&V Report. All past annual M&V reports shall be kept available for the life of the contract, with the location of these older reports noted in the “Documentation Matrix” section of this plan.

A summary of the M&V methodology for each ECM is contained in the following table.

**M&V methodology by ECM**

|  |  |  |  |
| --- | --- | --- | --- |
| **ECM Number** | **ECM Title** | **DOE/FEMP M&V Guideline Protocol Method** | **ASHRAE Expected Equipment Life Cycle** **(years)** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

While it is not specifically a function of M&V, the equipment expected life data has been added to the above table to assist the COTR in anticipating R&R activities. The expected life will pertain to the major pieces of equipment installed by the ECM.

## M&V Document Storage Location

*The M&V Plan and the Annual M&V Reports may be inserted here.*

If the agency/site prefers to file the M&V documents, the filing location of all M&V documents should be kept in an easily accessible location. Locations of the documents are listed below:

|  |  |  |
| --- | --- | --- |
| M&V Plan from the IGA/Final Proposal | Storage Location[[1]](#footnote-1)\* | Responsible Party |
| Title |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| M&V Annual Report from the ESCO  | Year | Storage Location[[2]](#footnote-2)\*\* | Responsible Party |
| Title |  |  |  |
| Title |  |  |  |
| Title |  |  |  |

# Ongoing M&V Status and Checklist

The agency should first refer to the most recent FEMP Guidance for M&V, available using the following link: <http://www1.eere.energy.gov/femp/financing/espcs_resources.html>.

Each ECM may have some degree of M&V requirements from both the contractor and the Agency as part of contract. Generally, one or more of the assumptions used in the energy savings calculation, plus O&M requirements, are items selected for monitoring. The Agency also can elect to completely review any part of the contract savings performance at any time during the contract term.

M&V monitoring can range from occupancy and equipment use schedules on the Agency, to equipment operational and performance characteristics and status on the ESCO, even if the ECM is stipulated. These items will require a minimum of an annual review to ensure that the ECM is still functioning to design requirements and savings are being realized. Any changes in building or system usage must be noted if they change any assumptions or conditions involved in the use of energy, or change O&M cost.

It is recommended that ECMs be reviewed as an on-going inspection, not as a review only at the end of the term year, if reasonable and feasible given budget and time constraints. This will help enable discovery of abnormal operation earlier within each year and document its existence rather than observing operation once at the end of each year. On-going review throughout each year eliminates ending with limited or no knowledge, even if only general, of when the equipment started abnormal operation. This leads to the lack of knowledge of when savings may have started be jeopardized. In particular, items that affect savings assumptions should be reviewed, such as lighting on-off times, number of building occupants, normal hours of operation, etc. Metering should be monitored monthly through the Energy Management Control System (EMCS).

The Agency should refer to the Witnessing Section of this document, the FEMP Witnessing and Commissioning Guidelines, and witness and record any actions deemed necessary that apply toward ongoing M&V status that may warrant future attention.

# Annual M&V Report

The M&V Plan, which governs M&V activities, is included in Appendix K of this plan. Added to this Appendix also is the current year M&V report from the ESCO. These two reports are the governing M&V documents at any particular time within the contract term. The Plan defines the requirements and methodology, and the report defines the current year’s performance results. Appendix K shall be continually updated during the contract term so that it always contains both the original M&V plan and the latest annual M&V report. M&V Report review guidance is available through FEMP (<http://www1.eere.energy.gov/femp/financing/espcs_resources.html>).

The Annual M&V reports are essential to maintaining a historical set of performance, inspection, and testing information for the project, and the entire set of annual reports shall be maintained in a known and safe location to support potential project performance evaluations, government audits, and potential conflict resolution.

## Agency Training and Awareness

Training requirements are dependent upon the terms agreed upon in the contract. The IDIQ standard terms, unless modified by a TO RFP, require annual re-training if the agency has responsibility for O&M. The ESCO, prior to turning the project over to the Agency after full acceptance, must provide training for all aspects of the O&M of the equipment and systems. The ESCO must also provide manuals for everything in the scope, which fully defines the O&M of the equipment and systems. Optimally, the Agency will have several of their personnel attend the training to ensure that someone who is already trained is available to train new hires. The contract should be consulted for the training plan.

*Editor’s Note: Insert the complete description and schedule of training for this contract. The location of training materials for quick reference may also be noted here.*

# Appendices

*Editor’s Note: Update page listing, titles and sections as needed.*

|  |  |  |
| --- | --- | --- |
| **Appendix** | **Title** | **Page(s)** |
| A | LOC Plan and First Year M&V Checklist | **41** |
| B | Annual Agency Checklist | **42** |
| C | Energy Star Portfolio Manager Benchmarking Tool | **44** |
| D | Commissioning Report | **47** |
| E | Escrow Account and Procedures | **48** |
| F | Glossary of Terms | **51** |
| G | Acronym List | **55** |
| H | External Resource Directory | **56** |
| I | Project Acceptance Form/Project Deferred Acceptance Form | **57** |
| J | Additional Attachment Place-Holder | **58** |
| K | Renewable Energy Screening Questionnaire | **59** |
| L | M&V Plan and Current Year Annual M&V Report | **62** |

##  Appendix A – LOC Plan and First Year M&V Checklist

|  |  |  |
| --- | --- | --- |
| **Item** | **Action** | **Completed Date** |
| ***Initial Document Preparation*** |
| 1 | All contractual submittals have been received and accepted |  |
| 2 | Punch list completed and signed-off. |  |
| 3 | Post-Installation Performance Report reviewed and approved |  |
| 4 | Full Acceptance completed and signed |  |
| 5 | Commissioning Report received, reviewed and approved |  |
| 6 | M&V Plan received, reviewed and approved |  |
| 7 | Completion of 30 days of satisfactory performance |  |
| 8 | Copies of Items 2 through 6 above obtained and placed with LOC Plan |  |
| 9 | Contract reviewed and latest TO-2, TO-3 and TO-4 Schedules obtained and placed in LOC Plan. |  |
| 10 | Contract reviewed and O&M and R&R responsibilities determined and included in the LOC Plan. |  |
| 11 | Executive Summary from ESCO final proposal obtained and placed in the LOC Plan. |  |
| 12 | Ensure Agency awareness of any Escrow accounts set up during the project development for use during the performance period. |  |
| 13 | Obtain all Agency, DOE, and ESCO contact information for the performance period and insert in LOC Plan. |  |
| 14 | Complete the “Active ECM” list in the LOC Plan. |  |
| 15 | Complete the Awarded Project Overview in the LOC Plan. |  |
| 16 | Add the TO Schedules TO-2, TO-3, TO-4, and TO-5 to the LOC Plan. (TO-4 appears in two places) |  |
| 17 | Working with the CO and COTR. Locate and list location of all material in LOC Plan ‘Documentation Matrix’ |  |
| 18 | Add the estimated construction period savings, incentive, and agency funding dollar values into the Annual Project savings chart. Construction period savings must be verified before being paid. Review contract to ensure that all “Year Zero” savings are identified and captured herein.  |  |
| 19 | Complete the LOC Plan chart for M&V Options for each ECM. |  |
| 20 | Conduct Final Review of LOC Plan with COTR and CO, ensuring all items are complete and report is ready for transferring to Agency. |  |
| 21 | Train the CO and COTR in the use of the LOC Plan, including review of the data within it and how to use it to manage the contract. Present the LOC Plan to the Agency after the review. |  |
| ***Actions at the End of the First Year of Performance Period*** |
| 22 | After the end of the first year of the performance period, review the Annual M&V Report; insert the data into the LOC Plan after the Agency has approved the report. |  |
| 23 | Present Final LOC Plan to Agency, and review it as necessary for their use during the remaining years of the contract term. |  |

## Appendix B – Annual Agency Checklist

|  |  |  |
| --- | --- | --- |
| **Item** | **Action** | **Completed Date** |
| ***Items ideally conducted more than once throughout the year*** |
| 1 | Audit the buildings checking controls settings for lights, temperature, hours occupied or in operation, number of employees, etc., making sure automatic systems are not by-passed. |  |
| 2 | Review logs for Maintenance to check if planned activities did occur. Publish any findings to ESCO to keep them informed, especially if work scope is not occurring.  |  |
| 3 | Review M&V parameters and assumptions to ensure they are within allowable limits. |  |
| 4 | Read any and all meters installed and/or used by the M&V process on a monthly basis. Best if conducted as a joint Agency/ESCO effort. This should be a coordinated activity with the ESCO representatives. |  |
| 5 | Review and approve/disapprove any invoices based on the contractual commitment. Caution: M&V confirmed shortfalls may temporarily adjust payment streams to accomplish recovery of any shortfalls. Invoices should then only be approved for the adjusted amounts. Payments may be submitted monthly or annually. The contract should be consulted if necessary. |  |
| 6 |  |  |
| ***Items ideally completed as part of the annual M&V True-up process.*** |
| 1 | Review the LOC Plan contacts list to make sure it is up to date. Make any adjustments necessary. |  |
| 2 | Coordinate with the ESCO for the annual M&V tests and/or review and witness all testing, meter reading, and any other planned activities. |  |
| 3 | Review each building with the assigned building manager or equivalent, to determine the quality of service being obtained from the ESCO, especially if the O&M and/or R&R are being conducted by the ESCO. |  |
| 4. | Review the contractual requirements to determine the guaranteed savings in both energy and cost of energy (O&M) for the current year. This is the value the M&V will justify or not. These values change each year by inflation/escalation per the contract. |  |
| 5 | Obtain copies of all utility invoices and determine the actual cost of all commodity consumptions and demand charges for energy consumed by the equipment installed per the ESPC. |  |
| 6 | If necessary, obtain and review the local Heating and Cooling Degree Days from the National Weather Service for use in making weather impact adjustments. |  |
| 7 | Obtain and review the annual M&V report from the ESCO. Verify any calculations and/or claims. Compare with the Guarantees to ensure the Government did receive the guaranteed energy savings and/or the contractual O&M work scope. |  |
| 8 | Obtain and determine if the Agency made any substantial changes to the missions or usage of any building(s) or area(s) serviced by the equipment installed by the ESCO. Especially be aware of any changes that affect the guarantees of the ESCO. Make any adjustments necessary to bring all data to the same conditions of the original contract. |  |
| 9 | Conduct an annual True-up meeting with the CO and the ESCO to determine any adjustments required in the monthly/annual/payment stream due to savings shortfalls. |  |
| 10 | Ensure the CO issues a Contract Change Order to correct the payment stream resulting from the annual true-up exercise. |  |
| 11 | Review O&M requirements of the ESCO and make a determination of work scope accomplishment or the lack thereof. |  |
| 12 | Review R&R requirements of the ESCO and make a determination of work scope accomplishment or the lack thereof. |  |
| 13 | Verify the status of employee training for those working on or with the ESPC equipment to determine if additional training is required. |  |
| 14 | Etc. |  |
| 15 |  |  |
| 16 |  |  |
| 17 |  |  |
|  |  |  |
|  |  |  |

## Appendix C – ENERGY STAR Portfolio Manager Benchmarking Tool

Use of EPA/DOE Energy Star Portfolio Manger is **optional** and included in the LOC Plan as an assistance document for site informational purposes only. It is a free benchmarking program for utility data entry and analysis via the Internet at the following web address: <http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager>

This tool can be used on the individual site level to obtain an Energy Star rating for individual facilities and to apply for a building label (if qualified).

The following sample report tables are examples automatically generated by the tool by entering monthly utility consumption data (energy and cost) from utility invoices. Complete reports can also be automatically generated by request using the tool, and are emailed to the requestor by ENERGY STAR. It should be noted that this tool can be useful for individual building benchmarking but should **not** be used for comparison or tracking of ESPC performance or budgeting purposes. Baselines listed in the Energy Star Portfolio Manager tool may **not** be the same as or an accurate representation of the ESPC baseline and should **not** be used to verify ESPC savings.

*Blank ENERGY STAR Benchmarking Report Examples*

### Sample Report

|  |
| --- |
| My Portfolio: Example |
| 12/1/08 |  |
| Total Buildings: |  |
| Facility Name | Current Rating (1-100) | Adjusted Percent Energy Reduction | Total Floor Space (Sq. Ft.) | Energy Use Alerts | Current Energy Period Ending Date | Eligibility for the ENERGY STAR | Last Modified |
|  |  |  |  |  |  |  |  |

Sample Report

|  |
| --- |
| My Portfolio: Example |
| 12/1/08 |  |
| Total Buildings: |  |
| Facility Name | Current Rating (1-100) | Current SourceEnergy Intensity (kBtu/Sq. Ft.) | Baseline Rating(1-100) (kBtu/Sq. Ft.) | Baseline SourceEnergy Intensity (kBtu/Sq. Ft.) | Adjusted Percent Energy Reduction | CO2 Reduced (lbs) |
|  |  |  |  |  |  |  |

Sample Report

|  |
| --- |
| My Portfolio: Example |
| 12/1/08 |  |
| Total Buildings: |  |
| Facility Name | Cumulative Investment in Facility Upgrades (USD) | Cumulative Investment per Sq. Ft. (USD) | Annual Energy Cost (USD) | Total Energy Cost per Sq. Ft. (USD) | Indoor Water Cost (USD) | Outdoor Water Cost (USD) |
|  |  |  |  |  |  |  |

Sample Report

|  |
| --- |
| My Portfolio: Example |
| 12/1/08 |  |
| Total Buildings: |  |
| Facility Name | Baseline Energy Period Ending Date | Current Energy Period Ending Date | Baseline Rating (1-100) | Current Rating (1-100) | Adjusted Percent Energy Reduction |
|  |  |  |  |  |  |

Sample Report

|  |
| --- |
| My Portfolio: Example |
| 12/1/08 |  |
| Total Buildings: |  |
| Facility Name | Current Rating (1-100) | Current Site Energy Intensity (kBtu/Sq. Ft.) | Annual Energy Cost (USD) | Target Rating (1-100) | Target Site Energy Intensity (kBtu/Sq. Ft.) |
|  |  |  |  |  |  |

Sample Report

|  |
| --- |
| My Portfolio: Example |
| 12/1/08 |  |
| Total Buildings: |  |
| Facility Name | Total Indoor and Outdoor Water Use (kGal) | Total Indoor and Outdoor Water Cost (USD) | Indoor Water Use (kGal) | Indoor Water Use per Sq. Ft. (kGal) | Wastewater/Sewer use (kGal) | Wastewater/Sewer Cost (USD) | Water Use Period Ending |
|  |  |  |  |  |  |  |  |

Sample Report

|  |
| --- |
| My Portfolio: Example |
| 12/1/08 |  |
| Total Buildings: |  |
| Facility Name | Current Rating (1-100) | Current Energy Period Ending Date | Current Site Energy Intensity (kBtu/Sq. Ft.) | Current Source Energy Intensity (kBtu/Sq. Ft.) | Energy Reduction per Sq. Ft. (kBtu/ Sq. Ft.) | Adjusted Energy Reduction per Sq. Ft. (kBtu/Sq. Ft.) | Energy Use Alerts |
|  |  |  |  |  |  |  |  |

Sample Report

|  |
| --- |
| My Portfolio: Example |
| 12/1/08 |  |
| Total Buildings: |  |
| Facility Name | Current Rating (1-100) | Current SourceEnergy Intensity (kBtu/Sq. Ft.) | Adjusted Percent Energy Reduction | Eligibility for the ENERGY STAR | ENERGY STAR Application Status | Building Profile Status |
|  |  |  |  |  |  |  |

## Appendix D – Commissioning Report

Insert Commissioning Report or Location Reference Information Here

## Appendix E – Escrow Account and Procedures

The following procedure is available to the Project if it is advantageous to insert via Contract Modification. Some Task Orders add this in the original document to allow for savings above the guaranteed amount to be kept available for the use of the project on any energy efforts except for payment for unrealized savings. The most common use is for R&R activities if the original contract did not include provision for R&R by the ESCO. It is recommended that discussions be held with the Project Facilitator and the DOE FEMP Financial Specialist prior to adding an escrow account contract modification.

**1. Performance Period Escrow Fund**

The Contractor shall establish a Performance Period Escrow Fund (PPEF) for this contract. The PPEF is a reserve to cover expected additional costs associated with any performance period expenses directly related to the maintenance, repairs or replacement of facilities, system or facility components or equipment related to the provisions as provided for under this Contract, except for those maintenance, repair and replacement responsibilities set forth in the Final Proposal; and/or the early termination of the contract. New additional energy conservation (ECM) activities can also be funded from this account as long as they are not changes required by the contractor to accomplish meeting his guaranteed energy savings (Those changes are to be at no cost to the Government).

**1.1 Account Setup**

Each year an amount of $\_\_\_\_\_\_(TBD) of the performance period expense, or any savings in excess of the guaranteed payment to the Contractor, will be placed into an escrow account by the Contractor on behalf of the Government. These funds are generated by the ESPC savings and shall not include any Contractor markup or expenses. In the event that the Contractor credits the Government for (a) excess Construction Contingency; (b) Hazardous Material Allowance that was not required during construction; (c) proceeds from the transfer of Renewable Energy Certificates; and/or (d) verified energy savings beyond Guaranteed Energy Savings, a sum total to the amount of the credit will be deposited into the escrow account. The PPEF shall be held by a third party financial institution (“Escrow Agent”) acceptable to the Contractor and Contracting Officer, and amounts on deposit in the PPEF shall be invested in Permitted Retention Accounts (defined hereafter in Section 1.6) and such amounts on deposit shall accrue any gains or losses (including interest as applicable) from such Permitted Retention Accounts.

**1.2 Authorized Withdrawals**

a. In the event that additional services and/or equipment are required for the proper performance of this Contract, the Contractor will provide a detailed written estimate for the required service and/or equipment to the Contracting Officer. The Contracting Officer, at his/her sole discretion, will determine whether the request is consistent with the establishment of the PPEF and the estimate is deemed fair and reasonable. Only upon the written approval of the Contracting Officer will the Contractor be authorized to make withdrawals from the PPEF for that particular service and/or equipment up to a specified monetary limitation. In addition to the actual direct costs for these services and/or equipment, the Contractor will be allowed to include a mark-up not to exceed TBD%. For work requested by the Government, that is consistent with the intent of this PPEF, from any person or entity other than the Contractor, the USCG shall not be required to pay a mark-up to the Contractor and the Contractor shall have no responsibility or liability with respect to such work. IN NO EVENT is any withdrawal authorized without the prior written approval of the Contracting Officer.

b. The Contractor, on behalf of the Escrow Agent, may submit written requests to the Contracting Officer for approval of reasonable administrative charges and expenses resulting from the establishment and management of the PPEF. The Escrow Agent shall submit an annual statement to the Contracting Officer for all such fees and expenses for payment with supporting documentation substantiating the cost.

**1.3 PPEF Limitations**

In the unexpected event that authorized costs during any single year exceed the balance of available funds in the PPEF, the Contractor shall provide the Government with any available options to finance the additional charges including, but not limited to, the following: finance the cost for the remainder of the Contract term; modify the Contract to extend the term; or, pay the excess directly. In no event will the Contractor be expected to not recover the cost of an authorized charge.

**1.4 Annual Reporting**

The Escrow Agent will track the escrow balance and issue quarterly and annual statements to the Contracting Officer showing the payments made into the PPEF, accrued interest, and any withdrawals. The Contractor will include the prior year’s statements with each M&V report.

**1.5 Account Closeout**

The Contractor is required to provide notice to the Contracting Officer once the PPEF balance is expected to reach the amount necessary for termination of the Contract in accordance with Schedule ESPC-5, Annual Cancellation Ceiling Schedule. The Contracting Officer may, at his/her sole discretion (a) instruct the Contractor whether to apply the balance of the PPEF toward termination of the Contract, (b) authorize the Contractor to make additional withdrawals in accordance with 1.2, (c) apply the remaining balance to an additional ECM, or (d) combination of above as applicable. The Contractor is required to bring the PPEF to a zero balance at the end of the Contract.

**1.6 Permitted Retention Accounts**

“Permitted Retention Accounts” means the following in the order indicated:

(a) Money market funds which at the date of acquisition have a rating by Standard and Poor’s Ratings Services of either “AAAm-G”, “AAAm” or “AAm”. If such are not available, then:

(b) Bills, notes, bonds or other obligations which as to principal and interest constitute direct obligations of the United States of America.

## Appendix F – Glossary of Terms

**Added Premium** - The added premium is the number of basis points (basis point=1/100 of a percentage point) that, when added to the index rate for a task order project, equals the total Project Interest Rate (a fixed annual percentage). The entity providing the capital to finance a project, which may be the contractor or a third party, can recover financing expenses either in the added premium or as a separate Financing Procurement Price. In most cases, contractors use project financing capital from third party financiers, and the added premium is a pass-through expense from the third party financier. In such cases, the contractor may recover the cost of arranging third-party financing through the Financing Procurement Price in Schedule TO-3.

**Adjusted Energy Baseline** - An energy baseline that has been adjusted to compensate for factors that would have changed energy consumption in the absence of any energy conservation measures (i.e., factors affecting baseline energy use beyond the contractor’s control). Examples of such factors include increases or decreases in conditioned or illuminated space, changes in occupancy or building use, facility renovation, or extremes in weather.

**Annual Energy Audit** - The term annual energy audit means a procedure including, but not limited to, verification of the achievement of guaranteed energy, water, and related cost savings and energy unit savings, resulting from implementation of energy conservation measures and a determination of whether an adjustment to the energy baseline is justified by conditions beyond the contractor's control. (Also known as Annual Measurement and Verification.)

**Applicable Financial Index** - The financial index upon which the index rate, the first component of the project interest rate, is based. This term, as used in the contract, applies to any financial index that is available and usable as a basis or floor.

**Commissioning –** Procedures undertaken, generally by the contractor, to assure that energy conservation measures and building systems perform interactively in accordance with design documentation and intent. See “FEMPs Commissioning Guide for ESPCs” in the External Resource Directory.

**Construction Finance Charges** - The contractor's costs of financing the price of construction or energy conservation measure installation.

**Direct Costs** - Any allowable cost that can be specifically identified to a particular final cost objective.

**Energy Baseline** - The amount of energy that would have been consumed annually without implementation of energy conservation measures based on historical metered data, engineering calculations, sub-metering of buildings or energy consuming systems, building load simulation models, statistical regression analysis, or some combination of these methods.

**Energy Conservation Measure (ECM)** - A measure applied to a Federal building or facility that improves energy efficiency, is life cycle cost effective under 10 CFR Part 436, Subpart A, and involves energy conservation, cogeneration facilities, renewable energy sources, improvements in operation and maintenance efficiencies, or retrofit activities.

**Energy Cost Savings** - Energy cost savings are generally recurring savings - savings that occur year after year; however, one-time energy cost savings may come from energy savings in excess of guaranteed savings, either during the post-acceptance performance period or during the implementation period.

**Energy-Related Cost Savings -** Energy-related cost savings are generally recurring reductions in expenses (other than energy costs) related to energy-consuming equipment, generally affecting operations, maintenance, renewal, or repair expenses of equipment. One-time energy-related cost savings can result from avoided expenditures of operations and maintenance, repair and replacement, or capital expenditures funds for projects (e.g., equipment replacement) that, because of the energy savings performance contract project, will not be necessary.

**Escalation Rate** - The escalation rate is the rate of change in price for a particular good or service (as contrasted with the inflation rate, which is for all goods and services).

**Estimated Energy Cost Savings** - Estimated energy cost savings are the contractor-estimated energy cost savings in dollars per year for each energy conservation measure (ECM), and equal the estimated energy savings multiplied by the established energy prices in appropriate units. For ECMs with multiple energy type impacts, energy cost savings equals the sum of the products of the energy savings by energy type and established energy prices.

**Final Proposal** - The final proposal is the response to a request for proposals that includes a project overview, technical and price components.

**Financing Procurement Price** - The financing procurement price is the price offered by the contractor for the service of arranging the project financing, obtaining any required payment and performance bonds, and providing construction phase financing.

**Guaranteed Annual Cost Savings** - The guaranteed annual cost savings are the levels of annual cost savings the contractor is willing to guarantee for a task order (TO) project. The proposed values for these savings appear in Schedule TO-1 (PA), column (b). After the IGA, the contractor revises the preliminary assessment and offers the final values in Schedule TO-1 (final), column (b). The guaranteed annual cost savings must exceed the annual contractor payments (Schedule TO-1 (final), column (c)) in each year of the TO post-acceptance performance period. For the first interval (generally 12 months) after Government acceptance of construction, the contractor is paid as if the savings guarantee is being met. The annual energy audit establishes actual savings. If actual savings fall short of the guarantee, the contractor will pay back the shortfall over the next interval by accepting lower payments.

**Implementation Expense** - Implementation expenses are the sum of the direct and indirect costs of all tasks required to install energy conservation measures. Implementation expenses shall not include financing costs, profit or any expenses incurred during the performance period.

**Implementation Period** - The implementation period is the period between the date of task order (TO) award to the date that all energy conservation measures (ECMs) are operational and accepted by the Government.

**Implementation Profit** - Implementation profit is applied to total direct and indirect expenses for project development and all energy conservation measures in Schedule TO-2.

**Implementation Price** - Implementation price submitted in Schedule TO-2 is comprised of: the sum of project development and all proposed energy conservation measures direct expenses; indirect expense applied to sum of direct expenses, and profit applied to the sum of total project direct and indirect expenses.

**Indefinite Delivery/Indefinite Quantity (IDIQ) Contract -** A contract for property or services that does not procure or specify a firm quantity of property or services (other than a minimum and possibly a maximum quantity) and that provides for the issuance of task orders for the delivery of the property and services during the specified ordering period of the contract.

**Index Rate** - The index rate is the interest rate for the financing period of a specific task order (TO) project, based on the contractor's proposed applicable financial index. The added premium negotiated for a TO project is added to this figure.

**Indirect Cost** - Any allowable cost not directly identified with a single, final cost objective, but can be identified to two or more cost objectives or the company as a whole

**Investment Grade Audit (IGA)** - A procedure which may include, but is not limited to, a detailed analysis of the energy cost savings and energy unit savings potential, building conditions, energy consumption, and hours of use or occupancy for a facility, for the purpose of preparing final technical and price proposals.

**Measurement and Verification (M&V)** - The process of measuring and verifying energy, water and related cost savings.

**Notice of Intent to Award (NOI)** - A written notice issued by the agency to notify the contractor that the agency intends to award a task order for an energy savings performance contract project.

**Post-Acceptance Performance Period** - The period (typically in years) from the date a task order (TO) project is operational and accepted by the Government, to the end of the TO's contract term. The post-acceptance performance period may also be referred to herein as the service period.

**Post-Acceptance Performance Period Annual (or Regular Interval) M&V** - At least annually, the contractor and the Federal agency shall verify that the installed equipment/systems have been properly maintained, continue to operate correctly, and continue to have the potential to generate the predicted savings. This ensures that the M&V monitoring and reporting systems are working properly, and it allows fine-tuning of measures throughout the year based on operational feedback.

**Post-Acceptance Performance Period Expenses** - Direct costs (without contractor mark-ups) of all tasks required to maintain energy savings performance after Government acceptance of installed energy conservation measures shall be shown on Schedule TO-3, and shall not include any indirect costs, financing costs, profit nor any expenses incurred during the implementation period.

**Post-Acceptance Performance Period Indirect Cost Applied** - Includes overhead, general and administrative expenses, other indirect cost elements associated with tasks required to manage and maintain energy savings performance after Government acceptance of installed energy conservation measures. This shall not include any costs incurred during the implementation period.

**Post-Acceptance Performance Period Profit** – The means by which the contractor obtains profit during the post-acceptance performance period. The post-acceptance performance period profit shall not include any direct or indirect costs or financing costs. The profit amount is negotiable for task orders.

**Post-Installation Measurement and Verification Activities** - Post-installation measurement and verification is to ensure that the proper equipment/systems have been installed, are operating correctly and have the potential to generate the predicted savings. Verification methods may include surveys, inspections, and spot or short-term metering. Commissioning of installed equipment and systems is expected. Commissioning assures that the building systems perform interactively in accordance with the design documentation and intent. Commissioning is generally completed by the contractor. In some cases, however, it is contracted out by the Federal agency.

**Preliminary Assessment (PA)** - A procedure which may include, but is not limited to, an evaluation of energy cost savings and energy unit savings potential, building conditions, energy consuming equipment, and hours of use or occupancy, for the purpose of developing preliminary technical and price proposals prior to issuance of a notice of intent to award a task order project in accordance with the master indefinite delivery/indefinite quantity contract procedures.

**Project Development** - Includes all work activities that occur after the agency issues a notice of intent to award task order. Work activities may include all direct costs associated with the development of an IGA, including but not limited to site visits and inspections, meetings, calculations, project costing, baselines and measurement and verification development.

**Project Square Footage** - Project square footage is the total square footage of a building in which ECMs are installed by a contractor, or of buildings where energy usage and sources are affected by installed ECMs. Project square footage for affected buildings shall be submitted in Schedule TO-4.

**Project Interest Rate** - The project interest rate is the sum of the index rate and added premium for a specific task order project.

**Recurring Energy-Related Cost Savings** - Recurring energy-related cost savings are ongoing or annually recurring reductions in energy-related expenses that are budgeted and allocated annually, such as lowered costs for ongoing maintenance, operations and repair. These must be actual savings, i.e., there must be an associated reduction in money that the Government was currently spending or planning to spend.

**Service Period** – See Post-Acceptance Performance Period.

**Task Order (TO)** - The obligating document that provides the details and requirements for the order of an energy savings performance contract project, placed against an established master indefinite delivery/indefinite quantity contract.

**Task Order Project** - The complete package of energy conservation measures (ECMs) included in a task order for a building, facility or agency. Investment and project financing is provided by the contractor to implement an ECM Project, which includes aggregation or bundling of individual ECMs, resulting in energy, water, and related cost savings to the facility.

**Task Order Request for Proposal (TO RFP)** - A document prepared by the ordering agency to communicate the agency’s requirements to the contractor and to solicit proposals. The document will incorporate all agency, site, and project specific standards procedures, functional requirements, terms, and conditions (not already addressed in the master indefinite delivery/indefinite quantity contract).

**Task Order Term** - The term of a task order (TO) contract issued against this master indefinite delivery/indefinite quantity contract is defined as the sum of the implementation and performance periods negotiated and identified in Schedule TO-1 (final). The maximum TO term is 25 years from TO award.

**Technology Category (TC)** - Energy conservation measures (ECMs) shall be categorized based on the type of system and equipment involved in the project. The TCs are indicated in Attachment J-3. The miscellaneous category shall be used for applications where the ECMs are not identified by the other categories.

**Total Post-Acceptance Performance Period Expenses** - The sum of all expenses incurred during the post-acceptance performance period. Total post-acceptance performance period expenses are entered in Schedule TO-3 for each year of the post-acceptance performance period.

**Walk-Through Survey**  - A brief inspection of a facility to evaluate the potential for energy, water and related cost savings measures as well as gather information to determine the need for a more detailed audit. The findings of the walk-through survey are documented in the preliminary assessment.

## Appendix G – Acronym List

AFV Alternative Fueled Vehicle

AIA American Institute of Architects

ANSI American National Standards Institute

ARI Air Conditioning and Refrigeration Institute

ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers

BAS Building Automation System

CFM Cubic feet per minute

CFR Code of Federal Regulations

CO Contracting Officer

COR Contracting Officer’s Representative

DEAR Department of Energy Acquisition Regulation

DOE Department of Energy

ECM Energy Conservation Measure

EMCS Energy Monitoring/Management Control System

ESCO Energy Services Company

ESPC Energy Savings Performance Contract

FAR Federal Acquisition Regulation

FEMP Federal Energy Management Program

FP Final Proposal

FPP Financing Procurement Price

HVAC Heating, Ventilating and Air-conditioning

IDIQ Indefinite Delivery/Indefinite Quantity

IDS Investor Deal Summary

IGA Investment Grade Audit

IPMVP International Performance Measurement and Verification Protocol

LOC Life of Contract [Plan]

M&V Measurement and Verification

MACRS Modified Accelerated Cost Recovery System

NEC National Electric Code

NEMA National Electrical Manufacturers Association

NEPA National Environmental Policy Act

NESC National Electrical Safety Code

NFPA National Fire Protection Association

NOI Notice of Intent (to award task order)

O&M Operations and Maintenance

ORCA Online Representations and Certifications Application

OSHA Occupational Safety and Health Administration

PA Preliminary Assessment

PCB Poly-chlorinated Biphenyl

PE Professional Engineer

PF Project Facilitator

REC Renewable Energy Credit

REM Resource Efficiency Manager

RFP Request for Proposals

SF Standard Form

SFO Standard Financing Offer

SOW Statement of Work

TC Technology Category

TO Task Order

TRC Tradable Renewable Certificates

UBC Uniform Building Code

UL Underwriters Laboratory

UPC Uniform Plumbing Code

## Appendix H – External Resource Directory

Web information\* that will assist in developing an understanding of the ESPC process. \*Note: When referencing web guidance information, one should check for any recent or updated versions prior to using the information found by the web links referenced below.

* DOE Website for Energy Efficiency and Renewable Energy <http://www1.eere.energy.gov/femp/index.html>
* FEMP ESPC Instructions and Guidance Documents
<http://www1.eere.energy.gov/femp/financing/espcs_resources.html>

Energy Units Conversion Table: <http://www.energystar.gov/ia/business/tools_resources/target_finder/help/Energy_Units_Conversion_Table.htm>

* Simple Payback and Business analysis documentation link: <http://www.energystar.gov/ia/business/BUM_business_analysis.pdf>
* Energy Escalation Rate Calculator
<http://www.nrel.gov/analysis/analysis_tools_tech_build.html>
* ASHRAE: Service Life and Maintenance Cost Database <http://xp20.ashrae.org/publicdatabase/>

## Appendix I – Sample Project Acceptance Form/Project Deferred Acceptance Form

The following is a sample construction completion signature document, for reference purposes.

**Project Title:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Project No.: Delivery Order No.: Assigned Performer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 (e.g. Major Subcontractor)

\_\_\_\_\_ Total Formal Construction Project

\_\_\_\_\_ Partial Formal construction Project (e.g. system or ECM)

\_\_\_\_\_ Minor Construction Activity

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

**SECTION 1A. Completion of Construction and Construction Acceptance Testing**.

(Signatures in Section 1A document completion of physical construction and inspection)

Describe the formal construction project, partial project (e.g. system or ECM), or minor construction activity being documented as physical construction and inspection complete.

\_\_\_\_\_ No Exception List \_\_\_\_\_ Exception List Attached

Assigned Performer Signature: Agency Acceptance Inspection Signature:

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

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

**SECTION 1B. Completion of Section 1A Exceptions:** (Signatures in Section 1B document that the above exceptions list, if any, has been completed and accepted and/or funds have been accrued to complete the remaining minor exceptions and remaining project financial obligations)

\_\_\_\_\_ All exceptions resolved. \_\_\_\_\_ Funds accrued for remaining exceptions (list attached)

Assigned Performer Signature: Agency Acceptance Inspection Signature**:**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Section 2A. Completion of Operational Testing, Commissioning and Approval of Test Results.**

**(**Signatures in section 2A document Engineering approval of Operational and Commissioning Test results and operational acceptance and/or beneficial use of the completed system/project listed in Section 1A above.)

Assigned Performer Signature: Agency Acceptance Inspection Signature:

(Engineering)

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

Assigned Performer Signature:

(Subcontractor)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**SECTION 2B. Completion of Section 1B Exceptions.**

(Signatures in section 2B document that all exceptions identified in Section 2A have been completed)

Assigned Performer Signature: Agency Acceptance Inspection Signature:

## Appendix J – Renewable Energy Screening Form



**Renewable Energy Screening For All ESPCs**

The Department of Energy’s (DOE) Federal Energy Management Program (FEMP) Energy Savings Performance Contracts (ESPC) program has funded DOE National Laboratories to support agencies with increasing use of renewable energy technologies required per EPACT 2005 and Executive Order 13423.

To utilize the no-cost support, the National Laboratories require some easily accessible high-level site and related energy data to conduct pre-screening analysis. The objective is to identify the economic feasibility of renewable technologies - wind, solar, and biomass power generation applications - that could be considered as Energy Conservation Measures (ECMs) in your ESPC. The National Laboratories commit to turning around pre-screening results within three (3) to four (4) weeks of receiving site data requested on the attached pages. If results indicate reasonable economic feasibility, you can share findings with the ESCO and discuss ESCO consideration of further analysis of potential Renewable ECMs.

**Agency User Guidance**: To support DOE National Laboratories services to conduct an economic feasibility screening of renewable energy technologies, please complete the following form with requested data. When completed, save a copy to your PC hard disk. Send the completed form as an attachment to an e-mail and forward to 1) your Federal Financing Specialist (FFS) *(email address on form)*, 2) Project Facilitator (PF) *{email address on form if assigned}*, and 3) Tim Tetreault at the National Renewable Energy Laboratory (NREL) – Tim.Tetreault@nrel.gov Please type **“RE Screening for *(insert agency site)****”* in the subject line*.* Results of prescreening will be forwarded by lab staff to your FFS and assigned PF.

*If you have any questions, please contact Tim Tetreault (**Tim.Tetreault@nrel.gov**) . He will respond and/or coordinate with other National Laboratory staff to provide a response to your questions.*

|  |  |
| --- | --- |
|  |  |
| **Federal Financing Specialist (FFS):**  |       |
| **E-mail:**  |  |
|  |  |
|  |  |
| **Project Facilitator (PF):**  |       |
| **E-mail:**  |  |
|  |
|  |  |
| **Facility Name:** |       |
| **Facility/Energy Manager Point Of Contact:** |  |
| Name: |       |
| E-Mail: |       |
| Phone Number: |       |
|  |  |
|  |  |
| 1. **Site Location**
 |  |
| Lat/Long (preferred): |       |
| Or address: |       |
|  |       |
|  |       |

|  |  |
| --- | --- |
|  |  |
| 1. **Utility Information**
 |  |
| Electric |  |
| Utility Company: |        |
| Rate: |      $/kWh (Blended $/kWh: annual $/annual use) |
| Annual Cost: | $       |
| Annual Use: |       KWh |
| Annual Peak Demand: |       | kW |       | Month (please abbreviate) |

|  |
| --- |
| Natural Gas |
| Utility Company |       |
| Rate: |       $/therm [ ]  or $/decatherm [ ]  (Check units) |
| Annual Cost: | $       |
| Annual Use: |       therm [ ]  or decatherm [ ]  (Check units) |

|  |
| --- |
| Water |
| Utility Company: |       |
| Rate: |       $/KGal |
| Annual Cost: | $       |
| Annual Use: |       Kgal |

|  |
| --- |
| Propane |
| Supplier:  |       |
| Rate: |       $/Gal |
| Annual Cost: | $       |
| Annual Use: |       Gal |

|  |
| --- |
| Oil #2 |
| Supplier: |       |
| Rate: |       $/Gal |
| Annual Cost: | $       |
| Annual Use: |       Gal |

|  |
| --- |
| Oil #6  |
| Supplier: |       |
| Rate: |       $/Gal |
| Annual Cost: | $       |
| Annual Use: |       Gal |

|  |
| --- |
| Coal |
| Supplier: |       |
| Rate: |       $/ton |
| Annual Cost: | $       |
| Annual Use: |       Tons |

|  |  |
| --- | --- |
| **3. Total Facility Square Footage** |       KSF |

|  |  |
| --- | --- |
| **4. Land Area Available for Power Generation** |       Acres |
| Compatible with mission? | Yes [ ]  No [ ]  |
| Lat/Long (if available): |       |

## Appendix K – Summary of M&V Options, M&V Plan and Current Year M&V Annual Report

**Summary of M&V Options (for educational purposes)**

The measurement and verification (M&V) protocol mandated for projects conducted under the Super Energy Savings Performance Contract (Super ESPC) is the Federal Energy Management Program (FEMP) M&V Guidelines: Measurement and Verification for Federal Energy Projects. The FEMP Guidelines are an application of the International Performance Measurement and Verification Protocol[[3]](#footnote-3) (IPMVP). Both of these guidelines group M&V methodologies into four general categories: Options A, B, C, and D. The options are generic M&V approaches for energy and water saving projects.

M&V approaches are divided into two general types: retrofit isolation and whole-facility. Retrofit isolation methods look only at the affected equipment or system independent of the rest of the facility; whole-facility methods consider the total energy use and de-emphasize specific equipment performance. One primary difference in these approaches is where the boundary of the energy conservation measure (ECM) is drawn, as shown in Figure 4-1. All energy used within the boundary must be considered. Options A and B are retrofit isolation methods; Option C is a whole-facility method; Option D can be used as either, but is usually applied as a whole-facility method.



Figure ‑ Retrofit Isolation (Options A and B) vs Whole-Facility M&V Methods (Options C and D)

The four generic M&V options are summarized in Table 4‑1 and described in more detail below. Each option has advantages and disadvantages based on site-specific factors and the needs and expectations of the agency (see Chapter 5). While each option defines an approach to determining savings, it is important to realize that savings are not directly measured, and all savings are estimated values. The accuracy of these estimates, however, will improve with the number and quality of the measurements made. Although not required in Super ESPC projects, the accuracy of savings estimates can be quantified, as discussed in Section 5.4.

Table ‑ Overview of M&V Options A, B, C, and D

| M&V Option | Performance1 and Usage2 Factors | Savings Calculation |
| --- | --- | --- |
| Option A—Retrofit Isolation with Key Parameter Measurement | This option is based on a combination of measured and estimated factors when variations in factors are not expected.Measurements are *spot or short-term* and are taken at the component or system level, both in the baseline and post-installation cases. Measurements should include the key performance parameter(s) which define the energy use of the ECM. Estimated factors are supported by historical or manufacturer’s data.Savings are determined by means of engineering calculations of baseline and post-installation energy use based on measured and estimated values.  | Direct measurements and estimated values, engineering calculations and/or component or system models often developed through regression analysisAdjustments to models are not typically required. |
| Option B—Retrofit Isolation with All Parameter Measurement | This option is based on periodic or continuous measurements of energy use taken at the component or system level when variations in factors are expected. *Energy or proxies of energy use are measured continuously*. Periodic spot or short-term measurements may suffice when variations in factors are not expected.Savings are determined from analysis of baseline and reporting period energy use or proxies of energy use. | Direct measurements, engineering calculations, and/or component or system models often developed through regression analysisAdjustments to models may be required. |
| Option C – Utility Data Analysis | This option is based on long-term, continuous, whole-building utility meter, facility level, or sub-meter energy (or water) data.Savings are determined from analysis of baseline and reporting period energy data. Typically, regression analysis is conducted to correlate with and adjust energy use to independent variables such as weather, but simple comparisons may also be used. | Based on regression analysis of utility meter data to account for factors that drive energy useAdjustments to models are typically required. |
| Option D—Calibrated Computer Simulation | Computer simulation software is used to model energy performance of a whole-facility (or sub-facility). Models must be calibrated with actual hourly or monthly billing data from the facility. Implementation of simulation modeling requires engineering expertise. Inputs to the model include facility characteristics; performance specifications of new and existing equipment or systems; engineering estimates, spot-, short-term, or long-term measurements of system components; and long-term whole-building utility meter data.After the model has been calibrated, savings are determined by comparing a simulation of the baseline with either a simulation of the performance period or actual utility data. | Based on computer simulation model (such as eQUEST) calibrated with whole-building or end-use metered data or both.Adjustments to models are required. |

1 Performance factors indicate equipment or system performance characteristics, such as kW/ton for a chiller or watts/fixture for lighting.

2 Operating factors indicate equipment or system operating characteristics such as annual cooling ton-hours for chillers or operating hours for lighting.

***Insert M&V Plan and Most Recent Annual M&V Report Here***

1. \* *Ed Note: Preferred location of this item should be in Appendix K of this report.* [↑](#footnote-ref-1)
2. \*\* *Ed Note: Current report preferred in Appendix K of this report, past years in a location defined herein.* [↑](#footnote-ref-2)
3. *International Performance Measurement and Verification Protocol: Concepts and Options for Determining Energy and Water Savings Volume I*, EVO-10000 -1.2007, Efficiency Valuation Organization. [↑](#footnote-ref-3)