



# Resource for Auditing Energy Saving Performance Contracts (ESPC)

A Guide to FEMP ESPC Program Resources and Project  
Deliverables for Auditors and Agencies

February 2024

## Preface

This guide was prepared by the U.S. Department of Energy's (DOE) Federal Energy Management Program (FEMP) primarily to provide guidance and resources to auditors assigned to assess existing ESPC projects. It describes resources, documents, and processes related to energy savings performance contract (ESPC) projects. It also describes the DOE ESPC indefinite delivery, indefinite quantity (IDIQ) contract timeline of key resources for reference when determining applicable guidance and presents common findings from past audits of ESPC projects with specific references to the DOE ESPC IDIQ contracts and supporting documents.

This guide focuses on ESPC projects awarded under the FEMP DOE ESPC program and more specifically, DOE ESPC IDIQ contracts. However, it will be valuable for any project awarded using an ESPC contract. Other federal government contract vehicles include the U.S. Army Corps of Engineers (USACE) multiple-award task order contract (MATOC), the FEMP-General Services Administration (GSA)-schedule ENABLE contracts, and stand-alone ESPC contracts. Regardless of the vehicle, all federal ESPC contracts must adhere to the ESPC statutory authority (primarily found at [42 U.S.C. 8287](#), *et seq.*).<sup>1</sup> Therefore, this guide will have broad applicability.

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<sup>1</sup> Although specifically applicable to energy savings performance contracts awarded on or before September 30, 2003, the ESPC-specific section of the Code of Federal Regulations ([10 CFR 436 Subpart B](#)) remain instructive.

## Acknowledgments

This guide was developed for and sponsored by the U.S. Department of Energy Federal Energy Management Program (FEMP). Kurmit Rockwell, FEMP program manager for energy savings performance contracts (ESPCs), served as the program manager and lead reviewer for this guide. This guide was authored by Christine Walker of Pacific Northwest National Laboratory (PNNL) and Tom Hattery of Oak Ridge National Laboratory (ORNL). Valuable insight, guidance, and reviews were provided by Kurmit Rockwell and Skye Schell, FEMP program supervisor for Procurement Services, John Shonder (ORNL) and Phil Voss of the National Renewable Energy Laboratory.

Jensen King, PNNL and Terry Sharp and Heather Buckberry, ORNL provided subject matter expertise and conducted technical reviews.

## List of Abbreviations and Acronyms

ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
CICA	competition in contracting act
CFR	Code of Federal Regulations
CO	contracting officer
COR	contracting officer's representative
DO	delivery order
DOE	U.S. Department of Energy
ECM	energy (and water) conservation measure
EERC	energy escalation rate calculator
EERE	Office of Energy Efficiency and Renewable Energy
EPA	U.S. Environmental Protection Agency
ePB	eProject Builder
ESCO	energy service company
ESPC	energy savings performance contract
FAR	Federal Acquisition Regulation
FEMP	Federal Energy Management Program
FPE	federal project executive
GAO	Government Accountability Office
Gen	Generation (1, 2, 3, 4)
IDIQ	indefinite delivery, indefinite quantity (contract)
IG	Inspector General
IGA	investment grade audit
IPMVP	International Performance Measurement and Verification Protocol
LCC	lifecycle cost
M&V	measurement and verification
NIST	National Institute of Standards and Technology
NREL	National Renewable Energy Laboratory
O&M	operations and maintenance

ORNL	Oak Ridge National Laboratory
PA	preliminary assessment
PF	project facilitator
P.L.	public law
PMC	Project Management Center
QASP	quality assurance surveillance plan
R&R	repair and replacement
RFP	request for proposal
RRP Matrix	risk, responsibility, and performance matrix
SBPA	Selection Based on Preliminary Assessments method
SBQ	Selection Based on Qualifications method
TO	task order
TO RFP	task order request for proposal
U.S.C.	United States Code

## Executive Summary

As authorized by 42 U.S.C. § 8287, *et seq.*, energy savings performance contracts (ESPCs) use private sector financing to implement energy and water conservation measures (collectively, ECMs) to achieve energy and water cost savings and energy-related and water-related cost savings at federal buildings and facilities. ESPCs are used to implement distributed generation and incorporate renewable energy measures to achieve energy savings in federal buildings and facilities. ESPCs allow any federal agency to achieve energy and water reduction goals and associated facility improvements with little to no up-front capital costs or Congressional appropriations beyond those funds made available for the payment of energy, water, or wastewater treatment expenses, including related operations and maintenance expense. Energy service companies (ESCOs) design and construct the energy savings projects; obtain private sector financing; develop measurement and verification (M&V) plans, apply specific M&V techniques to individual ECMs; and guarantee aggregate annual energy cost savings of the installed ECMs for a contract period not to exceed 25 years.

The U.S. Department of Energy's Federal Energy Management Program (FEMP) is authorized by U.S.C. § 8287(b)(1)(A) to establish appropriate procedures and methods for federal agencies regarding ESPCs. FEMP carries out this responsibility in part by awarding a series of indefinite delivery, indefinite quantity (IDIQ) ESPC contracts to qualified ESCOs.<sup>2</sup> Under the DOE ESPC IDIQ contract, federal agencies implement ESPC projects by issuing a Task Order (TO) to a qualified ESCO under the master IDIQ contract. ESPC practice has evolved since the first IDIQ awards in 1998; FEMP has revised its contract language, clarifying and improving the requirements in response to new rules and legislation, and incorporating lessons learned. FEMP also regularly updates the associated guidance and training for federal ESPCs to ensure successful implementation and performance monitoring of these long-term, fixed-price contracts.

The objective of this document is to assist auditors and evaluators in preparing comprehensive audits of ESPC projects. ESPCs are flexible performance-based contracts used by federal agencies to carry out a wide variety of projects. Every agency has a unique mission, distinct facilities, varied locations, different potential size of project, diverse utility market, and more. Evaluating a specific ESPC project requires an understanding of these unique characteristics and knowledge of contract terms and specific FEMP guidance in effect at the time of TO award. This document provides a program history, guidance and contract references for each generation of DOE's ESPC IDIQ contract awarded as of the date of issuance of this guide. It includes observations and issues identified in Government Accountability Office (GAO) reports and Inspector General audit reports across several agencies over the last 15 years. As guidance evolves, periodic updates will be provided in the format of a "living" response to items identified in audit reports on the [FEMP website](#). FEMP is available to assist auditors with a wide range of issues (e.g., determining if guaranteed savings have been achieved, when guidance applies).

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<sup>2</sup> Note that the DOE ESPC IDIQ is only one method of awarding ESPCs. Agencies have the authority to initiate stand-alone ESPC task orders or ENABLE ESPC task orders, in addition to using the DOE ESPC IDIQ contract.

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## How to Use this Guide

This document provides references and guidance to those involved with reviews, evaluations, and performance audits of ESPC projects. While the document provides valuable background information, it is recommended that auditors seek FEMP technical assistance for audits of ESPC projects. There are several factors that require considerable expertise when evaluating an existing ESPC project. These factors range from technical complexity to the application of changing law, guidance, and contracts, and that each ESPC project is unique - designed for a specific agency and the needs, goals, opportunities, and challenges of each particular site. FEMP has assisted with and reviewed numerous audits of ESPC projects. This experience demonstrates the importance of FEMP technical assistance to ensure an accurate audit. For information or to arrange assistance, contact the ESPC program manager on FEMP's [Contacts for Federal ESPCs](#) webpage, or contact the appropriate FEMP federal project executive (FPE) on the FEMP webpage [Federal Project Executives for ESPC, UESC, and ESPC ENABLE Projects](#).

Over the more than 25 years of DOE FEMP ESPC history, various audits and reports have been issued that reviewed many aspects of federal agency ESPC projects. FEMP has developed this guide as a resource to assist those tasked with conducting, assessing, or reviewing a performance audit. The objectives of the guide include understanding relevant ESPC laws and regulations; identifying current and past FEMP resources available to federal agencies in the development, award, and monitoring of these projects; and providing issues and items for consideration when evaluating ESPC projects, either alone or across a portfolio of awarded projects for an agency or the program as a whole.

Changes in legislation, best practices, and FEMP ESPC guidance over time can pose challenges to auditing a specific ESPC project. Most ESPCs span nearly the full statutorily authorized term of 25 years. During this period, there may have been changes to DOE ESPC IDIQ contracts (i.e., between generations of contracts), evolving DOE FEMP guidance and, potentially, updates to authorizing legislation. This guide is designed to help the auditor determine which requirements were in force at the time of a specific ESPC project's award. It also captures the current status (at time of publication) of FEMP's ESPC program, and addresses observations and issues identified in prior audit reports. Note that FEMP ESPC guidance and training is regularly updated to reflect best practices, lessons learned, and changes in laws, regulations, and executive orders. This guide, therefore, is not intended to be all-inclusive.

There is no comprehensive "list" for the various references cited in this guide; it provides a combination of historical guidance and current guidance that is regularly updated. Current references can be easily located via the [FEMP ESPC website](#). To arrange assistance, FEMP ESPC program and support staff contact information for Program Manager, Kurmit Rockwell, and the federal project executives is located on the FEMP [Contacts for Federal ESPC website](#).

## Development of Guide

This guide was developed based on the review of 30 Government Accountability Office and Office of Inspector General audits covering a variety of agencies. The reviewed audits evaluated ESPC projects to ensure compliance with regulations, statutes, and established guidance. Comprehensive reports were then generated that detailed the auditors' findings and made recommendations for improvement. Audits reviewed include those from the following agencies and offices:

- General Services Administration Office of Inspector General,
- DOE Office of Inspector General,
- U.S. Department of Defense Office of Inspector General, and
- Government Accountability Office.

## Methodology and Organization of Guide

The first half of this guide focuses on several topics curated from a review of existing audit reports. Common findings and recommendations were reviewed from multiple reports, and the following sections were assembled to clarify issues frequently addressed in audits:

- DOE's ESPC IDIQ contract timeline,
- FEMP resources and guidance,
- considerations with project sample selection,
- common findings from past audits, and
- ESPC procurement and task order modifications.

The remainder of the guide is organized by the main phases of DOE's ESPC IDIQ projects that have significant deliverables, government review, and government oversight associated with them. These sections reiterate and clarify aspects of ESPCs in relation to the authorizing statute, regulations, and the DOE ESPC IDIQ contract for the project phases:

- project development and award,
- project construction/project implementation and post-installation, and
- performance phase and verification oversight.

## FEMP ESPC Guidance

By virtue of the ESPC authorizing statute, 42 U.S.C. § 8287, *et seq.*, DOE is responsible for promulgating specific ESPC regulations and issuing ESPC guidance. FEMP guidance takes several forms. Certain guidance, particularly addressing pivotal legal interpretations, has been vetted by the DOE Office of the General Counsel and is especially precise. Other guidance may consist of the real-world application of best practices based on lessons learned. To determine the

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importance of particular guidance, it is essential to consult with FEMP. For example, some audits have cited FEMP guidance that *mandates* a certain activity when the actual intent is to *recommend* that the agency mandate the activity. This difference in meaning allows for a case-by-case decision wherein, for a certain case, *not* complying with the recommendation may be the proper decision for a specific project. Furthermore, although FEMP makes every effort to keep its guidance documents current, elements of a document may have been rendered obsolete by a new law, interpretation, or even a new lesson learned. Although FEMP ESPC guidance is extremely useful for implementing a project or auditing one, FEMP technical assistance is necessary to make proper, current application or interpretation of many elements of these documents.

## Contextual Guidance

Generally accepted government auditing standards outline procedures that identify specific objectives, scope, and methodology, including a defined time period to delineate the extent of the audit. This includes the context for reviewing projects by using current criteria for current projects and using previous criteria for previously awarded contracts. Language in the specific generation of the IDIQ contract indicates the terms and conditions in force at the time of TO award. The criteria applied to projects during review depends on the generation of the DOE ESPC IDIQ contract and the task order award date, as FEMP guidance and resources are regularly updated or revised—or a new version is released—to incorporate additional or modified requirements or recommendations. In DOE’s ESPC IDIQ contract, the language “shall comply with the latest version...in effect at the time of task order award” requires an understanding of when the project was awarded and what guidance was in place at that time. To support auditors in their review and considerations when determining sample projects, a timeline of DOE ESPC IDIQ contract award, guidance release and revision date, and current key resources are given in this document.

## Background

Energy savings performance contracting is an acquisition method that allows federal agencies to achieve energy, water, energy-related, and/or water-related savings via improvement projects through the implementation of energy efficiency, water conservation, renewable energy, and/or resilience objectives without requiring up-front Congressional appropriations or costs. An ESPC is a performance-based services contract with elements of installation (i.e., construction), design, acquisition, and financing, as defined in the Federal Acquisition Regulation (FAR).<sup>3</sup> An ESPC project is a collaboration between a federal agency and an ESCO that uses private financing to implement the identified energy and water conservation measures (ECMs, WCMs). The ESCO conducts a comprehensive (investment-grade) energy audit of the included federal facilities and identifies improvements that will reduce energy and water usage and reduce utility and operational costs based on predetermined, forecasted rates. The ESCO designs and constructs a project that meets the agency's needs and arranges project financing, typically with a third-party (private) financier. One key aspect of ESPCs is the requirement that the ESCO guarantee that the installed ECMs will result in a specified level of total project cost savings to the federal agency. The agency uses the guaranteed cost savings to pay for the facility improvements over the term of the contract. If the ESCO's installed ECMs fail to achieve the ESCO's guaranteed cost savings on an annual basis, the federal agency is not responsible for payment of the unrealized savings. After the ESPC project performance period or TO ends, all additional cost savings accrue to the agency.

FEMP provides support to agencies interested in ESPC projects, from the initial acquisition planning phase through the performance phase. FEMP offers technical expertise, contracting assistance, tools, guides, and training, which are available to federal agencies to help develop projects that adhere to contractual and legal requirements, employ technologies and solutions that meet agencies' requirements, will sustain performance throughout the contract term, and are fiscally sound.

In addition to reviewing project details, audits also involve reviewing the laws, regulations, policies, procedures, and controls pertaining to the management of ESPC projects. FEMP develops resources intended to provide policy guidance to agencies who are planning an ESPC, have a project in development, or already have awarded an ESPC.

ESPC resources and guides are updated periodically and published on the [FEMP ESPC website](#). Current and historical DOE ESPC IDIQ contract documents and ordering guides, including modifications to the master contract, are published and available on the [Resources for Implementing Energy Savings Performance Contracts](#) website, along with guidance, templates, and frequently asked questions and responses.

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<sup>3</sup> See FAR 2.101 definition for energy-savings performance contracts (<https://www.acquisition.gov/far/2.101>).

Information on the federal ESPC authority, streamlined energy project procurements, and eligibility to use ESPCs are available on the [About Federal Energy Savings Performance Contracts](#) website. The ESPC legislated authority is summarized in Table 1 below.

**Table 1. ESPC Legislated Authority<sup>4</sup>**

<i>Energy Savings Performance Contract Laws and Regulations</i>	
<b>Legal Authority</b>	<i>42 U.S.C. § 8287 et seq.</i>
<b>Related CFR</b>	<i>10 CFR 436 Subpart B and FAR Part 23.205</i>
<b>Definition of ESPC</b>	<i>FAR Part 2.101</i>
<b>Ordering</b>	<i>FAR Part 16.505</i>

## Using FEMP Resources and Guidance Documents

The terms and conditions of a task order or delivery order (collectively referred to as “TO”) for an individual project can modify select terms and conditions of the DOE ESPC IDIQ contract, including modifications allowed as part of the task order request for proposal (TO RFP) and TO award, required vs. recommended documentation and other deliverables. If not explicitly addressed in the TO, the terms and conditions in the DOE ESPC IDIQ contract will apply. Each generation of DOE’s ESPC IDIQ contract has included a provision that allows the ordering agency to modify certain IDIQ terms and conditions in the TO. For example, Section C.1.d of the current (as of publication of this guide) DOE ESPC IDIQ contracts state, “The terms and conditions that follow throughout the remaining sections of this IDIQ contract may be tailored, as appropriate (based on the needs and regulations of the ordering agency), in an ordering agency’s TO Request for Proposals (RFP). ... However, any tailored items must comply with the Federal Acquisition Regulations (FAR), the statutory requirements for ESPCs and remain within the scope of this IDIQ contract...”

Some points to consider when evaluating an ESPC project are as follows:

- *What is the current guidance or best practices for ESPC projects?* This information is reported on FEMP’s website and shared with agencies and project facilitators (PFs) for current projects and may apply to specific project development phases. Projects awarded under the DOE ESPC IDIQ contract are tracked throughout their development and full performance term; lessons learned from hurdles, issues, and successes are collected and disseminated periodically to all ESPC stakeholders (e.g., agencies, PFs, and FPEs).
- *What guidance was applicable at the time of project award?* Some versions of FEMP guidance may be referenced in the TO RFP or other contract documents. However, it may be necessary to note by date which version of a guidance document was in place at the time of award. If not explicitly referenced in the contract documents, the guidance in

<sup>4</sup> FEMP website with federal laws and requirements related to performance contracting, including Department of Defense specific authorities:

[https://www7.eere.energy.gov/femp/requirements/requirements\\_filtering/Performance%20Contracting](https://www7.eere.energy.gov/femp/requirements/requirements_filtering/Performance%20Contracting)

force during the project development period and award can be found in the contract file or archives available from FEMP.

FEMP's guidance has been developed to encourage the use and adoption of best practices, but that guidance is not an agency requirement and most terms and conditions of the IDIQs may be modified by the TO RFP to meet agency needs. Furthermore, the ordering agency must also consult with its own contracting officers (COs) and legal counsel regarding the application of DOE ESPC IDIQ contract provisions and statutory legal requirements to their specific ESPC TOs. Such intra-agency consultation will assist the ordering agency in determining how and whether FEMP's guidance applies to the agency's ESPC needs.

# 1 DOE ESPC IDIQ Program Timeline

DOE FEMP has awarded a series of ESPC IDIQ contracts to individual ESCOs for implementing ESPC task orders at federal facilities. It is recommended that consideration be given to the generation of IDIQ contract under which a project or task order was awarded when evaluating an ESPC, since their terms and conditions, requirements, and referenced resources may differ and published FEMP guidance may have been revised.

Considerable overlap exists in the applicable ordering periods for successive generations of ESPC IDIQ contracts. The ordering period for each IDIQ contract is the time during which a TO can be awarded under that IDIQ contract. FEMP intentionally arranges this overlap to accommodate the long project development period leading to a TO award. A typical ESPC project can take approximately 30 months to develop and award a task order. Therefore, an agency would refrain from initiating a project under the Gen 3 ESPC IDIQ during the last 30 months (2.5 years) of the ordering period if there is a chance of not awarding a potential task order by the IDIQ contract end date. Any project developed but not awarded under Gen 3 by the end of the ordering period would have to be restarted under Gen 4 ESPC IDIQ. If the next Gen 4 ESPC IDIQ's ordering period did not start until the Gen 3 ordering period expired, there would be no new ESPC projects initiated for at least 2.5 years. This significant lapse in the project pipeline would be detrimental to the ESPC program in relation to maintaining the interest of a sufficient number of third-party financiers and to federal agencies in using ESPCs to address agency goals and requirements. If financiers do not have a steady stream of investments available in the performance contracting market, they will move on and invest their money in other markets. Considering this, for example, the Gen 4 ESPC IDIQ was awarded in August 2023, while the Gen 3 ESPC IDIQ ordering period expires in April 2026, which provides for a 32-month overlap. Because of this necessary overlap between successive Generation IDIQ contracts, attention to determine under which generation of ESPC IDIQ contract a TO award was executed is important. This information is set forth in the ordering agency's TO award documents. If there is any difficulty in making this determination, auditors should contact DOE FEMP for assistance.

Task orders may be modified throughout their term, even if the IDIQ contract under which the original task order was awarded has expired. Any modification would be governed by the terms and conditions of the original IDIQ under which the task order was awarded.

As of the date of this guide's publication, the fourth generation of the DOE ESPC IDIQ contracts (Gen 4) is in place and available for use by all federal agencies. The Gen 4 ESPC IDIQ contracts were awarded on August 4, 2023, and the Gen 3 ESPC IDIQ contracts are slated to expire in April 2026. With each generation of the DOE ESPC IDIQ contract, and periodically as part of a quality assurance process overseen by FEMP, the guidance and resources used in developing, implementing, and evaluating the performance of ESPCs are updated; contract language in the current Gen 4 ESPC IDIQ contract contains language to "comply with the latest version (in



effect at the time of TO award)” of FEMP guidance and resources. The award date for projects reviewed as part of an audit should consider the timing of project development and award, timeline, and applicable guidance and resources available and in place at the TO award.

### 1.1 Regional and Technology-Specific ESPC IDIQ Contracts (Gen 1)

The first generation (Gen 1) of the DOE ESPC IDIQ contracts were separated into regional and technology-specific contracts and were referred to as *Super ESPCs*. The regional contracts were divided into the six former DOE regions: Northeast, Mid-Atlantic, Midwest, Southeast, Central, and Western. ESCOs were awarded individual ESPC IDIQ contracts in specific regions, and several ESCOs had contracts in multiple regions. The technology-specific contracts had no regional restriction and focused on individual advanced technologies: biomass, geothermal heat pump, photovoltaic, and solar-thermal technologies. The Gen 1 ESPC IDIQ contract delivery order (DO) ordering period was November 1998 through March 2010.

### 1.2 2008 ESPC IDIQ Contracts (Gen 2)

The second generation (Gen 2) of the DOE ESPC IDIQ contracts were also referred to as *Super ESPCs*. These contracts were awarded to multiple ESCOs, and they removed the regional and technology-specific attributes associated with the Gen 1 ESPC IDIQ contract. The Gen 2 ESPC IDIQ contract TO ordering period was December 2008 through December 2019, with several ESCOs requesting an additional 6-month extension.

### 1.3 2017 ESPC IDIQ Contracts (Gen 3)

The third generation (Gen 3) DOE ESPC IDIQ contracts were awarded in 2017 and are available for use by federal agencies who initiated a project prior to the award of the Gen 4 ESPC IDIQ contract. The Gen 3 ESPC IDIQ contract TO ordering period is April 2017 through April 2026.

### 1.4 2023 ESPC IDIQ Contracts (Gen 4)

The fourth generation (Gen 4) DOE ESPC IDIQ contracts were awarded in August 2023 and are currently (at time of publication of this resource) available for use by federal agencies to start a project. The Gen 4 ESPC IDIQ contract base ordering period is 5 years with one 5-year option period.

## 2 FEMP Resources

FEMP regularly updates resources and guidance for use by federal agencies to reflect new lessons learned, new audit recommendations, new policy emphases (e.g., new Executive Orders), new laws, new technologies, and other new requirements (e.g., an Office of Management and Budget directive). The most recently released documents are located on FEMP’s ESPC website. Past documentation may be referenced in updated materials, providing the date of publication. The date of publication of the resources and guidance is important when auditing ESPC projects. FEMP maintains a large volume of guidance and training material; auditors should consult with



FEMP to determine the applicability of its materials. For example, an ordering agency may award an ESPC TO based on FEMP guidance that has not yet been incorporated into its written documents.

An auditor must also determine which M&V Guidelines apply to the ESPC projects being audited. The current (Gen 4) IDIQ contracts do not explicitly state which version to use, but rather, in Section C.4.d of the Gen 4 IDIQ Contract, it states that M&V options and methods proposed for each ECM shall comply with the latest version of the *DOE FEMP M&V Guidelines* in effect at the time of TO award.

Additionally, when new legislation passes, such as the Energy Act of 2020, FEMP's resources and guidelines may require revisions or new guidance may be needed to reflect changes in the law. With the passing of the Energy Act of 2020, FEMP updated its *Frequently Asked Questions on the Scope of 42 U.S.C. § 8287 et. seq.* document to address items that impact or may be included in ESPCs, such as electric vehicles, and electric vehicle supply equipment.

Key reference documents produced by FEMP are listed in Table 2, along with their dates of release or publication. As noted, current and historical versions are available on FEMP's *Resources for Implementing Federal Energy Savings Performance Contracts* website (except where noted); any previous versions are mentioned in Table 2 for reference.

Table 2. Key ESPC reference documents

Reference document	Release date
<b>Contract Documents</b>	
<i>DOE ESPC IDIQ Base Contracts (Gen 1)*</i>	1998 - 2002
<i>DOE ESPC IDIQ Generic Contract (Gen 2)</i>	December 2008
<i>DOE ESPC IDIQ Generic Contract (Gen 3)</i>	April 2017
<i>DOE ESPC IDIQ Generic Contract (Gen 4)</i>	August 2023
<b>Price Reasonableness Determination</b>	
<i>Determining Price Reasonableness in Federal ESPCs</i>	January 2005
<i>Determining Price Reasonableness in Federal ESPCs</i>	April 2015
<b>Determination of Savings</b>	
<i>FEMP M&amp;V Guidelines (Version 2.0)</i>	February 1996
<i>FEMP M&amp;V Guidelines (Version 2.2)</i>	September 2000
<i>FEMP M&amp;V Guidelines (Version 3.0)</i>	April 2008
<i>FEMP M&amp;V Guidelines (Version 4.0)</i>	November 2015
<i>How to Determine and Verify Operating and Maintenance Savings in Energy Savings Performance Contracts</i>	November 2007
<i>How to Determine and Verify Operating and Maintenance Savings in Energy Savings Performance Contracts</i>	March 2018
<i>Practical Guide to Savings and Payments in FEMP ESPC Task Orders</i>	January 2009
<b>Contract Administration and Oversight</b>	
<i>Guide to Government Witnessing and Review of Post-Installation and Annual M&amp;V Activities</i>	February 2007

Reference document	Release date
<i>Guide to Government Witnessing and Review of Measurement and Verification Activities</i>	March 2014
<i>Guidance and Recommendations for Streamlining Reporting for Federal Energy and Water Efficiency Projects</i>	December 2020
<i>Guidance on Utility Rate Estimations and Weather Normalization in an ESPC</i>	October 2013
<i>Guidance on Utility Rate Estimations and Weather Normalization in Performance Contracts</i>	February 2019
<i>Frequently Asked Questions About Energy Savings Performance Contract Energy Sales Agreements</i>	current
<i>Federal Energy Savings Performance Contracts: Frequently Asked Questions on the Scope of 42 U.S.C. § 8287 et seq.</i>	current
<i>Ordering Guide for Generation 3 Energy Savings Performance Contract (ESPC) Task Orders Under DOE's Indefinite Delivery, Indefinite Quantity (IDIQ) Multiple Award Contracts</i>	June 2019

\*Note that the Gen 1 base contracts are available from FEMP upon request.

## 2.1 Project Documentation

Each generation of the DOE ESPC IDIQ contract has a list of recommended and required deliverables that may be referenced for key documents in the contract file. The required deliverables were modified between contract generations and should be referenced accordingly. The DOE ESPC IDIQ contract includes Attachment J-4 in the current (Gen 3 & 4) contracts, which provides a list of the recommended deliverables for TOs and recommended recipients. The table of DOE required deliverables from section F.6.b of the DOE ESPC IDIQ contract (Gen 4) is provided in Section 2.1.1.

### 2.1.1 DOE ESPC IDIQ Contract: DOE Required Deliverables

The DOE ESPC IDIQ contract has certain deliverables required by DOE to be included in the contract file as part of the project record. Each generation of the DOE ESPC IDIQ contract has required deliverables that may vary from the Gen 4 DOE ESPC IDIQ contract deliverables shown below or are referenced in a different section of the IDIQ contract. The deliverables for the Gen 4 DOE ESPC IDIQ contract are listed in Table 3. For further information on specific DOE-required deliverables, see section F.6.b of the Gen 4 DOE ESPC IDIQ contract, section F.6.2 of the Gen 3 contract, section F.6 Deliverables and Submittals of the Gen 2 contract, or section F.3 Deliverables of the Gen 1 contract.

**Table 3. Required Deliverables per the DOE ESPC IDIQ contract (Gen 4) that must be provided by the Contractor as part of the contract file and project record**

DOE Required Deliverable	Due By
<b>Preliminary Assessment</b> (See Section H.4) (if performed)	Within 10 calendar days of receiving a successful notification of intent to award by the ordering agency CO

DOE Required Deliverable	Due By
<b>Final Proposal with Investment Grade Audit – Pre-Award (See Section H.5)</b>	Within 10 calendar days after submission to the ordering agency
<b>Proposal – Accepted (See Section H.5)</b>	Within 10 calendar days after award
<b>Signed TO awards with all attachments (See Section H.3)</b>	Within 10 calendar days after award
<b>Final TO modification proposals – Pre-Award (except payment and other administrative modifications)</b>	Within 10 calendar days after submission to the ordering agency
<b>Signed TO modifications with all attachments (See Section H.5)</b>	Within 10 calendar days after award of the modification
<b>Commissioning Report – Accepted with comments and edits (See Section C.5.6)</b>	Within 30 calendar days after acceptance of report by the ordering agency
<b>Post Installation M&amp;V Report – Accepted with comments and edits (See Section C.4.2)</b>	Within 30 calendar days after acceptance of report by the ordering agency
<b>Notice of Agency Project Acceptance (See Section E.4)</b>	Within 10 calendar days after receipt from ordering agency
<b>Annual M&amp;V Reports – Accepted with comments and edits (See Section C.4.2, Paragraph D)</b>	Within 30 calendar days after acceptance of report by the ordering agency
<b>Individual Subcontract Report (ISR) via the Electronic Subcontracting Reporting System (eSRS) (See Attachment J-9, Small Business Subcontracting Plan)</b>	Semi-annually within 30 days after March 31 and September 30 each year of the ESPC IDIQ contract, regardless of whether there has been any subcontracting activity.
<b>Summary Subcontract Report (SSR) via eSRS (See Attachment J-9, Small Business Subcontracting Plan)</b>	Annually by October 30 for the 12-month period ending September 30 each year of the ESPC IDIQ contract, regardless of whether there has been any subcontracting activity.
<b>Contractor’s Code of Business Ethics and Conduct</b>	Within 30 days after award of the ESPC IDIQ contract.

### 2.1.2 FEMP ESPC IDIQ Ordering Guide

ESPC projects are complex, long term, and contain many different aspects that require oversight and verification by the ordering agency and the site. A review of past ESPC audits has identified specific challenges with maintaining vigilance on processes and protocols designed for quality assurance, savings verification, and life-of-contract support. The documentation required during distinct phases of ESPC projects leaves behind key artifacts that may be used to verify compliance.

The [\*Ordering Guide for Generation 3 Energy Savings Performance Contract \(ESPC\) Task Orders Under DOE’S Indefinite Delivery, Indefinite Quantity \(IDIQ\) Multiple Award Contracts\*](#) outlines the current ESPC project phases and serves as a resource index for contract

documentation throughout the duration of an ESPC project. The ordering guide is a reference to understand documents that should be in the contract file, as well as associated documents that may reside elsewhere. An overview of the ESPC TO process, which is detailed in the ordering guide, provides high-level FEMP guidance for ESPC project documents. With each new generation of the DOE ESPC IDIQ contract, a new ordering guide is developed for use with that specific generation contract. The ordering guide provides background references to applicable laws and regulations; however, agency-specific policies and procedures will apply accordingly.

## 2.2 M&V Resources and Guidelines

Audits correctly focus attention on M&V to determine whether an ESPC project is performing as required and guaranteed. Therefore, thorough knowledge of M&V is required to conduct an accurate, meaningful audit. It is critical that auditors understand M&V basics, the M&V protocols in place at the time of TO award, the applicable DOE ESPC IDIQ contract M&V terms, and the M&V plan in the TO award. An overview of M&V activities required by the current Gen 4 DOE ESPC IDIQ, laid out by phases of the ESPC process, is provided on the FEMP webpage: [M&V Activities Required in the ESPC Process](#).

M&V guidance has evolved over the course of FEMP's ESPC program and DOE's ESPC IDIQ contracts, with each version reflecting familiar concepts that are incorporated into a project-specific M&V plan. An M&V plan details the requirements for both the ESCO and the federal ordering agency, such as witnessing, acceptance, reporting, annual field walks, data collection, and other activities. Each generation of the *FEMP M&V Guidelines* provides templates and recommended approaches; however, the project-specific M&V plan is the governing document for an ESPC TO. The project M&V plan is developed with ordering agency input during the Investment Grade Audit (IGA) and submitted as part of the final proposal from the ESCO, and subsequent revisions are possible as part of negotiations before the project award. In the performance period, the M&V plan is used to determine whether performance period savings are being accomplished per the terms and conditions of the awarded TO. If contract-guaranteed savings appear unsubstantiated per the M&V reported results, further review of the project development documentation, including the Risk, Responsibility & Performance Matrix (RRPM), will provide additional insight. [FEMP M&V Guidelines](#) (as per the DOE ESPC IDIQ contract generation) may be referenced to evaluate whether the M&V plan is sufficient to determine the performance guarantee. More information on the M&V process for ESPC can be found on the [FEMP website](#).

## 2.3 FEMP Training Resources

FEMP develops and provides on-demand training via the [Whole Building Design Guide website](#). Multiple ESPC training modules are available on-demand to increase ESPC knowledge, including short overviews and comprehensive training on specific topics. FEMP also provides both in-person and live webinar training, which incorporates the latest information on best practices and energy policy updates. These in-person and live webinar trainings are updated

regularly, whereas the on-demand training may lag behind the latest changes due to the cycle time of updating the material.

### 3 Guidance on Project Sample Selection

Selecting projects to include in an audit, or the sampling of ESPC projects awarded by an agency, is an essential step when evaluating an agency's ESPC program. Several key factors can impact an audit, including when the project was awarded, which contract vehicle was used, and what guidance, resources, and training was in force at the time of project development and TO award. FEMP is available to provide assistance to auditors who are tasked with determining the sampling of ESPC projects to evaluate an agency's ESPC program. Projects that were awarded 5, 10, or 20 years ago may not represent the current program. Many agencies continually update and improve their procedures for awarding and managing ESPCs. Significant program improvements may have occurred since initial/early awards, and these improvements will be reflected in current training and guidance. When evaluating older contracts, consider that current requirements may have only been recommended best practices or not included for prior generations of the DOE ESPC IDIQ contract.

Sampling projects for an audit based on the same time period (i.e., same IDIQ contract, same applicable references, resources, guidance, laws, and regulations) for like comparisons has advantages worth considering. Systemic findings within contract generations can provide clear feedback based on consistent standards and application of those standards. Including projects from multiple generations of contracts adds complexity to the audit process, messaging, and recommendations. Whichever sampling approach is selected, referencing the applicable guidance at the time of contract award for each specific project will ensure consistent and applicable feedback.

Most importantly, when evaluating an agency's program, an auditor should consider that previously awarded projects may not reflect current practices and procedures. Although the most recent awards will better reflect agency performance, it is necessary to determine whether improvements were incorporated after projects were reviewed. Those procedures will entirely dictate the quality of future projects.

Given the 25-year allowable term of ESPC task order awards and the ongoing life-of-contract and quality assurance activities supported by FEMP, the current best practices shared with agencies, ESCOs, and DOE project facilitators may be ascertained by engaging with FEMP and the ESPC team. Verbal guidance and feedback on agency needs are routinely incorporated into the next available iteration of guidance, tools, training, and resources. In addition to lessons learned, guidance may be updated or revised based on many factors, including new laws, new legal interpretations, Office of Management and Budget memoranda, recommendations from previous audits, new products, and new technology.

## 4 Discussion of Common Findings from Past Audits

In prior audits by inspectors general of multiple agencies and the Government Accountability Office, several findings were repeated across multiple audit reports. The following issues and key findings are reviewed and discussed in this section:

- unsupported and overstated savings,
- ineffective oversight,
- appropriate contract modifications,
- fair and reasonable pricing,
- adjustments for changed circumstances, and
- inadequate contract administration.

### 4.1 Unsupported and Overstated Savings

One of the most important functions of monitoring an ESPC—and, by extension, auditing an ESPC or an ESPC program—is to ensure that, as the law requires, savings exceed payments “as estimated through the procedures developed pursuant to this section (42 U.S.C.

§ 8287(a)(2)(B)).” Those procedures can be found in the regulations promulgated by DOE in the Code of Federal Regulations (CFR), 10 CFR part 436 subpart B. The law and regulations recognize that the economic variables that will exist next year, let alone 25 years in the future, are unknown.

The task of determining whether guaranteed savings have been achieved is complex due to the need to account for many variables. These variables are wide-ranging, from variations in weather to changes in building use. Complicating this task further, for some of these factors the auditor must determine why a change was made. For example, if the operating hours of building equipment changed, was that change a result of a mission change (e.g., increased occupancy) or a mistake? The former is adjusted for as a change out of the contractor’s control (as provided under 10 CFR 436.37(b)), and the latter is a flaw that should be corrected.

#### 4.1.1 Common audit findings

Audits have identified projects that find a shortfall in which payments exceed savings or, more often, there is a lack of contract management that leaves the amount of savings unverified. Multiple past audits expressed these shortcomings as unsupported and overstated savings.

#### 4.1.2 Discussion

A key factor in ensuring that an ESPC is in compliance with legislation is to determine whether the savings being generated are sufficient to cover payment. Audit reports have found many anomalies, and auditors have concluded that these anomalies are evidence that the subject project failed to deliver guaranteed savings.



Failure to deliver guaranteed savings is possibly the most serious flaw an audit can reveal. Failure to achieve guaranteed savings, as delineated in an ESPC contract, requires correction and, depending on the cause, contract enforcement which, in some cases, includes withholding of contractor payment. Proving the realization of savings is not an accounting function but rather uses M&V methods as contractually agreed upon in the project-specific M&V plan to verify that savings are achieved. There is no requirement that the ordering agency's internal accounting prove that guaranteed savings are achieved. It is the ESCO's responsibility to demonstrate that the guaranteed savings have been achieved by proving performance based on the M&V plan and procedures, and the ordering agency's responsibility to review and approve the M&V reports. For contract enforcement, a shortfall must be attributed to a responsibility of the ESCO. FEMP's extensive review of project M&V reports shows that most O&M changes instituted by the ordering agency during contract term are mission driven. The procedures developed pursuant to the ESPC authority recognize that, when determining guaranteed savings, mission-driven changes may have a significant impact on actual savings. (See 42 U.S.C. 8287(a)(2)(B), see also [10 CFR 436.37\(b\)](#)).

In many cases, FEMP's review of an audit following several of these findings determined that critical information was missed to confirm that savings were achieved. The problem was poor record keeping rather than a lack of savings. In most cases, significant additional analysis will be required to determine whether savings were compromised.

Following are the principal issues with discussion on interpretation and analysis with respect to guaranteed energy savings shortfalls and unsupported or overstated O&M savings.

#### **4.1.2.1 Guaranteed Energy Savings Shortfalls**

Annual M&V reports are designed to identify not only whether a project has achieved its guaranteed savings but also whether there are elements that may compromise savings and need further analysis to determine their true significance. One of the most common of these elements is agency-performed O&M, especially when the ordering agency retains operational responsibility. For example, if savings depend on equipment runtime, then changing a control strategy that increases runtime will use more energy. This change may be a mistake by the agency (e.g., manual overrides), thus poor operation reduces the intended savings as designed. However, FEMP's work with agencies has found that most of these cases are driven by agency mission change. Mission change resulting in increased equipment runtime would happen regardless of ESPC implementation. Therefore, although increased runtimes will, when first considered, appear to compromise savings, they will actually increase savings. Energy savings are greater than contracted for when the energy consumption of the new system is compared with the energy consumption if the old, inefficient equipment were still in place when new demands on building use occurred.

Regardless of who performs the O&M, the ESCO is ultimately responsible for achieving the guaranteed energy savings. In instances where the ordering agency performs the O&M, the agency generally operates and maintains the installed equipment subject to contractor-provided



O&M work procedures and the contractor conducts periodic reviews or inspections of the installed equipment to assure that guaranteed savings are being achieved. Even where the agency performs such O&M, however, the ESCO remains responsible for assuring the guaranteed energy savings.

#### **4.1.2.2 *Unsupported and Overstated O&M Savings***

The ESPC statute provides that operations and maintenance savings are included when determining energy cost savings:

“§ 8287a. Payment of costs

Any amount paid by a Federal agency pursuant to any contract entered into under this subchapter may be paid only from funds appropriated or otherwise made available to the agency for fiscal year 1986 or any fiscal year thereafter for the payment of energy, water, or wastewater treatment expenses, including related operations and maintenance expense.”

The 2020 Energy Act amended the ESPC authority to provide further that:

“(F) PROMOTION OF CONTRACTS. —In carrying out this section, a Federal agency shall not— ...

(iii) limit the recognition of operation and maintenance savings associated with systems modernized or replaced with the implementation of energy conservation measures, water conservation measures, or any combination of energy conservation measures and water conservation measures.”

Performance period services, such as O&M and repair and replacement (R&R), often generate significant savings by avoiding costs. As indicated by the provisions referenced, ESPC achievements should include practicable O&M savings. The baseline cost for these activities is established and agreed upon during the project development process prior to award. Because ECMs often completely replace aging equipment, the baseline cost for O&M and R&R is established at the time of project award and may remain static with escalation factors. For example, a new boiler avoids increased maintenance and repair costs associated with the aging boiler it is replacing, which can be included as a savings in the ESPC. Current M&V guidance recommends reiterating the source, details, and analysis of the baseline costs as well as the source of O&M and R&R savings in the annual M&V report; however, this documentation practice may not be followed in all ESPCs. Once the original equipment is removed, there may be no more data generated to modify the baseline. Therefore, when evaluating whether O&M savings claimed during the performance period are unsupported or overstated, it may be necessary to reference the original technical proposal documentation or IGA.

## 4.2 Ineffective Oversight

The awarding (or ordering) federal agency is responsible for ECM installation oversight, equipment functionality and performance verification, and, when agreed upon in the contract, may execute equipment maintenance. Verifying or validating the accuracy of ESPC savings as reported by the ESCO is a key responsibility of the ordering agency. This responsibility is included in several activities throughout the ESPC, including witnessing measurements by the ESCO, reviewing the annual M&V reports, and documentation of those activities.

### 4.2.1 Common Audit Findings

Audits have identified projects in which an agency or agency officials did not validate contractor-claimed (i.e., ESCO-claimed) energy savings in the post-installation or M&V reports, nor did the agency witness data collection. Multiple past audits have highlighted these failures to ensure that the agencies are realizing the contractor-proposed savings.

### 4.2.2 Discussion

Careful review of the annual M&V report, including documentation of review findings, to confirm that savings are generated to cover the annual payment is an important responsibility. Following the annual M&V report review, the recommendation is that acceptance of the M&V report is completed via a note to the ordering agency's contract file. Similarly, witnessing post-installation and annual M&V activities is recommended by FEMP, although previous audit reports have found several anomalies in practice or record keeping and have concluded that the reported savings may not be valid.

Some audits have determined that ineffective agency oversight resulted in guaranteed savings not being achieved. In many cases, FEMP analysis determined that critical information was missed that confirmed that savings were actually achieved. The problem was poor record keeping rather than a lack of savings.

Following are the principal issues with discussion on interpretation and analysis on the topic of M&V review and witnessing.

#### **4.2.2.1 No Evidence of M&V Review**

Some audits have noted instances in which the documentation of staff review and approval of M&V reports cannot be found, along with some instances in which interviews with staff have revealed a lack of such review. This audit finding is important and reveals an absolute need for agency corrective action. Such failed actions may constitute noncompliance with the ESPC contract and should be corrected. However, one cannot conclude from such noncompliance, that a loss of savings or other contract performance has occurred. An in-depth analysis would be needed to arrive at such a conclusion. This analysis would include determining the results of prior M&V reports, especially the post-installation report and first annual M&V report, which should show how well the project performs. Next, the likelihood of a change in savings must be evaluated. For example, a project that has a high proportion of savings associated with a lighting ECM is highly unlikely to negatively change in future years, whereas a controls measure could

significantly change in performance and thus could result in loss of savings. In most cases FEMP has reviewed, retroactive analysis of M&V reports shows that projects were performing successfully. When there is a lack of proper documentation, FEMP expert assistance can help the auditor determine whether this is a simple clerical error or a situation that seriously compromises achievement of guaranteed savings.

#### **4.2.2.2 Lack of Witnessing**

Several audit reports have revealed inadequate witnessing of M&V activities. This particular finding requires some nuance from an auditing perspective because the need for witnessing depends on technical aspects of the M&V activity. FEMP published a *Guide to Government Witnessing and Review of M&V Activities* in February 2014 to assist agencies and ESCOs with this process. Following the procedures in this guidance provides confidence that the M&V reports produced by the contractor represent accurate results and provide sound justification for payments based on guaranteed savings.

Witnessing M&V for the post-installation report is a critical milestone for an ESPC project. This requirement was incorporated into guidance for construction/project implementation and post-installation activities in 2014. Some M&V activities may rely on the integrity of the post-installation measurements for the entire project term. A one-time measurement of certain parameters is a limited window of opportunity before other independent variables are introduced that may affect ECM performance. Energy savings calculations may be adjusted to compensate for changes in operational characteristics, such as occupancy or weather, over the term of an ESPC. Witnessing the post-installation measurements and documenting them with due diligence in the contract file is a key aspect of ensuring the accuracy of subsequent M&V reports.

Witnessing is important for understanding and validating the data the ESCO uses to determine the performance as documented in an M&V report. However, the accuracy of the M&V report is not necessarily suspect solely because certain witnessing did not happen or was not properly reported. A noted lack of witnessing documentation is an important and helpful audit report finding. Determining the effect of such absence is a complex task. Although FEMP guidance stresses the criticality of witnessing, there are instances in which a building operator knows that data gathered for an M&V report were gathered by other means, such as downloading and reviewing of energy management control system trend data over a specified period of time. Likewise, for Options C or D, witnessing may involve review of data input, analysis methods, and analysis results rather than witnessing field measurements.

FEMP expert assistance can help the auditor determine whether a lack of witnessing is likely to allow for false M&V reporting and whether retroactive action can remedy this information gap.

A well-conceived M&V plan will meet the guidance and contain explicit recommendations and signoffs for witnessing activities by the ordering agency. The 2008 DOE ESPC IDIQ (Gen 2) used the word “should” for witnessing, whereas beginning with the Gen 3 DOE ESPC IDIQ contract witnessing is required. The latest guidance also details multiple levels of witnessing,

including recommendations to focus on ECMs with the most savings or complexity. Witnessing for some ECMs may be limited to a post-installation measurement and witnessing for subsequent activities may be a simple verification of potential to perform. Annual reports may fail to acknowledge witnessing if it is not required or needed for the M&V plan due to the award date and the guidance in force at the time of award. Furthermore, the name, date, and title of the agency personnel reviewing data collected may be included within the M&V report or provided in an appendix to the M&V report, often as part of a M&V activity form. Many agency policies require a quality assurance surveillance plan (QASP) for ESPCs to ensure contracts are appropriately managed.

One key ESPC resource document for government witnessing and review of M&V activities is the [\*Guide to Government Witnessing and Review of M&V Activities\*](#).

### 4.3 Contract Modifications

Although ESPCs are awarded using different procurement methods, FEMP's general guidance is to keep the potential scope of the project broad and general in order to include all possible ECMs and other systems that support ECM performance. This can be accomplished in an ordering agency's Notice of Opportunity (NOO), whether they use the Selection Based on Qualifications (SBQ) or Selection Based on PAs (SBPA) method and may allow for many future changes to be considered 'in scope'. That is, at the time of fair opportunity to be considered, all contractors know or should have known that any ECM could be part of the project. Whether a modification is within scope can be dependent on the specific circumstances of a TO and requires an evaluation by the cognizant staff at the particular ordering agency.

#### 4.3.1 Common audit finding on Contract Modifications

Past audit reports have challenged certain ESPC TO modifications as to whether changes are in or out of scope. For example, in one project, O&M on equipment not installed in the ESPC was awarded to the ESCO via TO modification. The CO, working with their contracting officer's representative (COR), determined that this work was integral to the performance of the ESPC. Awarding it to a different contractor could result in a loss of ESPC performance, relieve the ESCO of guaranteeing performance, and shift that risk to the ordering agency. Where auditors found this type of work to be out of scope and to require new competition, there was no recognition of the CO's evaluation under and application of the FAR.

#### 4.3.2 Evaluating Modifications

This discussion is aimed at SBQ ESCO selection. The auditor may apply this to non-SBQ ESPCs by altering the evaluation method or criteria to fit the procurement method used.

Audit findings that challenge CO decisions about competition in ESPCs could, contrary to ESPC law, result in actions that inappropriately shift risk from the ESCO to the government. ESPCs present special challenges to determining what change is in or out of scope. Further, FEMP is unaware of any guidance providing a "brightline" test for determining what is in scope vs. that

which requires new competition per the Competition in Contracting Act of 1984 (CICA). Auditors must also factor in several ESPC procurement attributes:

- Most ESPC procurements (i.e., all those that use the predominant SBQ method) are nondefinitive. They ask the selected contractor to propose a wide range of ECMs based on a broad and comprehensive list of possible ECMs.
- The DOE ESPC IDIQ contract, which is part of the award documents, has a broad scope, including all known technology categories. An NOO issued consistent with FEMP recommended practice informs the field of competition (i.e., all DOE ESPC IDIQ ESCOs) that any of the ECMs listed may be included in the original award or, at a later date, by contract modification.
- ESPC legislation requires the ESCO to be “responsible for maintenance and repair services for any energy-related equipment, including computer software systems” (42 U.S.C. § 8287(a)(2)(A)) Because the ESCO is delivering not only hardware but also performance, work that impacts contracted-for performance can be considered in scope.

ESPC projects often include several intertwined measures and must guarantee their performance. Because some equipment and systems not directly implemented in the ESPC project can impact performance, FEMP considers the O&M of these related equipment and systems to be in scope. In order to determine whether work should have been competed, the auditor should determine whether the work could compromise the performance of the ESPC and any of the ECMs thereby implemented to determine the reasoning behind the CO’s decision. The auditor may need to seek expert advice for this technical determination. The intent of the ESPC statute is to assign responsibility, and thereby risk, to the ESCO. Any failure in ECM performance is then clearly on the part of the ESCO, and the government is insulated from any loss. The CO and, ultimately the auditor, must consider whether assigning work to a third party could shift that risk from the ESCO to the government.

To determine whether work is in scope, the auditor must first ascertain the contractor-selection method that was used for down selection. Modifications to a project in which the competition process used defined requirements (e.g., a solicitation that specified specific equipment) may be more restricted than modifications to a project in which the competition process was nondefinitive. The next step is to determine how awarding related work (e.g., a larger number of light fixtures or steam traps than planned, O&M of interconnected systems, etc.) to a different contractor may affect the performance of ECMs.

#### ***4.3.2.1 Scope of Modifications***

When Contractor selection has been done by FEMP’s SBQ method under its ESPC IDIQ contracts, contracting officers often find that post award modifications which add to the amount or type of ECMs are within scope, because all potential ECMs are included in the competitive scope. For example, some ESPCs are modified to take advantage of new or more efficient

technologies related to the ECMs in the project. Projects may also be implemented in phases because of the time needed to develop individual components of the project.

FEMP is aware that certain audits found that agencies failed to complete additional work included via post-award contract modification. It is unclear whether in some of these audits the unique attributes of ESPC contracting were fully considered. With any federal contract, determining whether additional work is in or out of scope, or whether such work requires new competition per CICA standards, is based on an evaluation conducted by the CO—often with the guidance of the ordering agency legal counsel.

When reviewing a contract modification, it is highly advisable that an auditor seek assistance from FEMP about the elements of contractor selection and scope of work that are specific attributes of ESPCs—especially ESPCs awarded using a qualifications-based process under a multiple award contract. Most ESPCs awarded under FEMP’s ESPC IDIQ contracts use the SBQ method. As discussed, under FEMP best practice, the NOO will reference the broad and comprehensive list of ECMs in the ESPC IDIQ contract. FEMP includes the following in its standard ESCO (contractor) Selector<sup>5</sup> template:

“The scope of any task order (TO) awarded for this project is the buildings and facilities as identified in this notice. While certain energy and water conservation measures (ECMs) will be included at the time of the original TO award, [Agency Name] may, at any time during the performance period, request the selected ESCO to do further analysis to determine whether expansion of ECMs included in the original TO or additional ECMs for the identified buildings and facilities are feasible. If deemed viable and desirable, [Agency Name] may incorporate the additional ECMs into this project by way of TO modification.”

#### 4.4 Fair and Reasonable Pricing

Properly performing and documenting price reasonableness as per FAR 15.404-1 is required for ESPCs, and lack of this process has been found by some ESPC audits. The most preferred methods for determining price reasonableness, such as adequate price competition, do not apply at the prime contractor (ESCO) selection stage for ESPCs; this process typically occurs during negotiations in the project development phase before awarding the TO. Documentation of this task should be available for each ESPC contract and modification.

Costs of implementation, including performance period services, such as M&V, can vary greatly depending on the specific ordering agency, site requirements, ECM attributes, etc. A key ESPC resource document to support determining price reasonableness is FEMP guidance titled *Determining Price Reasonableness in Federal ESPCs*. This guidance details how to apply FAR analysis techniques to ESPC projects and where in the ESPC process this review should occur.

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<sup>5</sup> <https://esco-selector.ornl.gov/>



## 4.5 Construction/Project Implementation Period Adjustments for Changed Circumstances

The construction/project implementation phase for large ESPC projects may generate minor or substantive changes to the original statement of work that warrants TO modifications. Risk and responsibility for certain changes can be negotiated before award to serve the best interest of the government. Some changes that add cost are justifiable as they can, among other justifications, be a legitimate baseline adjustment. For example, the cost of unforeseeable asbestos abatement can be borne by the ordering agency as it may be a necessary cost with or without an ESPC.

Alternatively, an ordering agency may choose to assign this risk to the ESCO. Specific issues that have arisen in past audits are failures to mitigate adverse conditions before awarding an ESPC. Encountering legacy infrastructure issues or hazardous field conditions can cause project implementation delays that incur additional costs associated with the ESPC. The current contract (Gen 4) Section H.15 provides language on how to handle unknown hazardous materials.

Determining which cost components of a project must be covered by the ESPC savings has generated audit findings with regards to unknown issues or site-specific requirements. As part of the technical proposal, the ESCO describes any ordering agency support required during ECM implementation for each proposed ECM. Documentation of decisions to include or exclude the cost of site-specific requirements in the ESPC should be included in the contract file.

## 4.6 Inadequate Contract Administration

### 4.6.1 Contract Management

Many audits have identified inadequate oversight and incomplete contract files as a major contributor to unverified savings. Maintaining an adequate contract file can be challenging because ESPC projects have performance period services and guaranteed savings that are administered throughout the contract term, which can be up to 25 years. From an auditing perspective, additional complexity may be added because contract management policies and procedures will vary between agencies.

In most cases, FEMP has found that audit findings regarding incomplete files can be easily corrected. It is important to note that incomplete files do not necessarily equate to a lack of savings. In most cases FEMP has found that there has been adequate M&V reporting, but that this fact was simply not certified by the COR (or other assigned staff) to the CO. A retrospective review can be done to determine whether guaranteed savings have been met.

### 4.6.2 Annual Performance Verification

Many audit findings involve the lack of affirmation in the contract file for completing and documenting required M&V, witnessing, O&M, R&R, and other performance period services. The annual review and acceptance of the post-installation report and annual M&V reports may be subject to ordering agency-specific policies and procedures; however, the core objective is to ensure that the M&V plan and performance period services are executed effectively and documented. Some agencies require a project specific QASP or other steps, such as multi-step

review and approval of the annual M&V report. FEMP guidance, such as the [\*DOE IDIQ ESPC Contract Management Plan: Site-Level Contract Management for the Performance Period\*](#), can help agencies form effective policies and procedures for managing ESPC projects.

Checking for required witnessing and savings substantiation may require a second step of analysis and a recheck of the original IGA and project proposal. In certain instances, past audit findings characterized savings as unsubstantiated. However, the annual M&V reports do not always reiterate savings established in development of the baseline. In some circumstances, savings were established with details and correctly substantiated in the original IGA (e.g., energy-related cost savings associated with longer life lamps and reduced material purchases associated with a lighting ECM) but were not mentioned in the annual reporting. Current contract guidelines recommend including all the necessary information to substantiate savings in the annual M&V report, but previous guidelines were not as prescriptive. The annual M&V report is a work product from the ESCO that documents the activities and results of the project-specific M&V plan. Deliverables should comply with the applicable guidelines and contract in force at the time of award. However, the formatting and presentation of the annual M&V report can vary greatly between ESCOs, and the guidelines provide federal agencies and ESCOs flexibility in how the required M&V information is presented. Having a full understanding of the contract file, especially the proposal response for the TO RFP, will ensure that witnessing requirements and savings justifications are substantiated.

The subject of witnessing has caused confusion on some audits. FEMP recommends witnessing of M&V activities to assure contractor data gathering is accurate. However, there are times when this may not be strictly needed. For example, a building manager may already be fully aware of relevant data. For example, the manager may already know exactly what materials were used for maintenance (e.g., voltage of lamps) and may have reviewed building controls data and thus knows elements like hours of operation, set points, etc. In such cases it may not be beneficial to physically observe the data gathering. A key ESPC resource document to support contract management is the [\*DOE IDIQ ESPC Contract Management Plan: Site-Level Contract Management for the Performance Period\*](#).

## 4.7 Understanding Risk and Risk Management

The ESPC savings guarantee entails, in part, certain factors that must be negotiated between the ESCO and the federal ordering agency to achieve a realistic savings goal. FEMP's Energy Savings Performance Contract Risk, Responsibility, and Performance Matrix highlights these factors for consideration. Versions of the current and past RRP Matrix are located on the [\*FEMP Resources webpage\*](#), under Project Risk and Responsibility. Past audits have discovered failures to meet or verify the savings guarantee because of inadequate oversight. Ordering agency responsibilities that impact the savings guarantee must be upheld to ensure that ESPC projects are cost-effective. If ordering agency responsibilities cause a shortfall in savings, an effective quality assurance plan should document the response to the shortfall in the contract file.



## 5 ESPC Procurement and TO Modifications

This section provides information and references that may be useful when considering methodology and justification for ESPC procurement and TO modifications. The [FEMP website](#) provides an overview with links to the different types of federal ESPCs. Each type of ESPC may follow a customized procurement methodology. This guide is primarily for DOE ESPC IDIQ contract awards; however, many of the underlying concepts may apply to other ESPCs. Understanding which procurement methodology applies can help navigate contract-specific requirements and inform the selection of a portfolio of projects for audit. Federal ESPC types are:

- DOE IDIQ ESPCs,
- DOE ESPC ENABLE,
- U.S. Army Corps of Engineers ESPCs,
- U.S. Department of Veterans Affairs ESPC Program, and
- Stand-alone ESPCs

Part 1 of the *2017 DOE ESPC IDIQ Ordering Guide* outlines the authorization of ESPCs and summarizes the applicability of the following provisions:

- 41 U.S. Code § 3301, “Full and open competition”;
- 42 U.S. Code § 8287, “Authority to enter into contracts”;
- FAR 16.505, “Ordering”;
- FAR Part 2.101, “ESPC definition”;
- FAR Part 23.205, “ESPCs”;
- 10 CFR 436.30, “Purpose and scope”;
- 10 CFR 436.31, “Definitions”; and
- FAR Subpart 33.1, “Protests.”

The requirements for competition in awarding TOs are generally based on 41 U.S.C. § 3301 and FAR 16.505. As outlined below, the ESPC statute establishes specific requirements for competition for contractor selection under a multiple-award IDIQ contract. (42 U.S.C 8287(c)), Additionally, ordering agencies may have agency-specific requirements and procedures.

### 5.1 Federal Acquisition Regulation Requirements

FEMP provides a streamlined procurement approach that is authorized and outlined in the ordering guide for the ESPC IDIQ contract. “The award of the DOE ESPC IDIQ contracts was done in compliance with FAR rules and requirements for competition. The DOE ESPC IDIQ contracts provide streamlined ESCO selection procedures authorized under 42 U.S.C. § 8287, as

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amended, that reduce an ordering agency’s evaluation efforts, such as down-selecting to one ESCO before proposal submission.”

FAR requirements for determining price reasonableness (FAR 15.404-1) and subcontractor competition must be followed for ESPC projects.

Price reasonableness is determined after contractor selection when the contractor has proposed specific ECMs. FEMP has published guidance for *Determining Price Reasonableness in Federal ESPCs* located on FEMP Resources page under Proposal Review: Pricing, to address strategies and procedures for meeting [FAR 15.404-1](#).

FAR 16.505 defines the rules for awarding TOs under multiple-award contracts. According to FAR 16.505(b)(2)(i), a contracting officer shall give every awardee a fair opportunity to be considered for a TO exceeding \$3,000 unless one of the statutory exceptions apply. If none of the exceptions to fair opportunity apply, the TO must be awarded competitively in accordance with the fair opportunity procedures outlined in the DOE ESPC IDIQ contracts.

Additional ESPC specific references for consideration are:

- Revised [42 U.S.C. § 8287](#), “Authority to enter into contracts”
- [10 CFR 436.3 Subpart B](#), “Methods and Procedures for Energy Savings Performance Contracting”
- [FAR 23.205](#) “Energy-savings performance contracts”
- [FAR Subpart 17.5](#), “Interagency Acquisitions”
- [FAR Subpart 15.4](#), “Contract Pricing” [FAR Subpart 15.4](#)
- *Determining Price Reasonableness in Federal ESPCs*
- [FAR Subpart 16.505](#), “Ordering”

## 5.2 Competition in Contracting Act Requirements

The Competition in Contracting Act (CICA) requires agencies, when procuring property or services, to “obtain full and open competition through the use of competitive procedures.” CICA, however, does not prevent modification of a contract by requiring a new bid procedure for every change. Only modifications outside the scope of the original competed contract fall under the statutory competition requirement.

An analysis of whether a modification to a task order is subject to the statutory competition requirement focuses on the scope of the entire original procurement (e.g., the IDIQ, the NOO, the method of contractor selection, the original TO) in comparison to the scope of the contract as

modified. A modification to a task order generally would not require further competition so long as the modification is within the scope of the original competitive procurement.<sup>6</sup>

As discussed previously, the recommended practice of issuing a broad NOO should adequately advise potential offerors of the potential for a task order to include any of the ECMs listed in the DOE ESPC IDIQ contract and for implementation across a range of buildings. Significantly, an ordering agency's initial selection of an ESCO is made without the Government requiring the ESCO identify specific ECMs or project size. As a result, potential offerors should reasonably anticipate circumstances such as the pre-award inclusion of an ECM listed in the DOE ESPC IDIQ contract as part of a task order implemented in a building identified in the NOO.

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<sup>6</sup> *ATT & T Communications, Inc. v. Wiltel, Inc.*, 1 F.3d 1201, Fed. Cir. (1993).

## 6 ESPC Project Development and Award Considerations

Federal agencies may enter into an ESPC for a period of up to 25 years for the purpose of achieving energy savings and benefits ancillary to that purpose.

### 6.1 Cost Savings Pay for the Project

ESPCs require the ESCO to guarantee energy and/or water cost savings from the installed ECMs sufficient to pay for the ESPC. The term *energy savings*, as defined in 42 U.S.C. § 8287c (2), includes energy cost savings, water cost savings, energy- and water-related cost savings. In addition, the statute provides for the following:

42 U.S.C. § 8287(a)(2)(E) states “Funding options. In carrying out a contract under this subchapter, a federal agency may use any combination of (i) appropriated funds; and (ii) private financing under an energy savings performance contract.”

42 U.S.C. § 8287(a)(2)(F) states: “Promotion of contracts.—In carrying out this section, a federal agency shall not—(i) establish a federal agency policy that limits the maximum contract term under subparagraph (D) to a period shorter than 25 years; (ii) limit the total amount of obligations under energy savings performance contracts or other private financing of energy savings measures; or (iii) limit the recognition of operation and maintenance savings associated with systems modernized or replaced with the implementation of energy conservation measures, water conservation measures, or any combination of energy conservation measures and water conservation measures.”

Energy cost savings can come from ECMs that reduce overall energy use, improve the efficiency of energy-using systems and equipment, and lower the consumption of outside energy utilities. Utility costs can also be decreased by operational improvements (e.g., control system upgrades and fuel switching), distribution system upgrades, and electrical peak shaving. Water cost savings can come from ECMs that reduce overall water use and improve the efficiency of water delivery systems and equipment. Keep in mind that the values (e.g., utility rates, hours of use) specified in the contract are the values used to determine the guaranteed savings. These values may differ from actual values in place at the time of the M&V reporting activities.

Energy- and water-related cost savings are from reduced expenses for the O&M or R&R of energy or water systems and equipment. O&M and R&R savings may be recurring, typically on an annual basis through the life of the contract or can be a one-time savings. These savings may involve a large sum in the ordering agency budget available for a one-time investment, such as the replacement of a large piece of equipment. If that said piece of equipment is included in the ESPC project and thereby a separate procurement is avoided, those already-budgeted funds can be contributed to the project. For example, the ordering agency may have been planning to replace a chiller using O&M/R&R funds and then decides to include the chiller replacement in the ESPC project. The appropriated money that would have been used to replace the chiller in

the absence of the ESPC project is an avoided cost that can be used to help pay for the ESPC project. Recurring, ongoing savings resulting from reduced O&M/R&R expenses may also be used to pay for the ESPC.

## 6.2 Life Cycle Cost Analysis

ESPCs are generally considered to be life-cycle cost effective. Section 10.2 of the NIST Handbook 135 2020 Edition<sup>7</sup> notes that ESPCs can bundle long- and short-payback conservation measures to achieve life-cycle cost effectiveness. The *Life Cycle Costing Manual for the Federal Energy Management Program (National Institute of Standards and Technology Handbook 135)* is supplemental and expands on the life cycle cost methods and criteria contained in the FEMP rules published in 10 CFR 436 Subpart A. The most recent version can be found on [FEMP's Building Life Cycle Cost Programs](#) webpage, under Handbook 135 and Annual Supplement to Handbook 135.

## 6.3 Energy-Related Savings Documentation

DOE ESPC IDIQ contracts describe specific deliverables in Section F, “Deliveries or Performance.” There have been changes in these from generation to generation of the DOE ESPC IDIQ contract. The DOE ESPC IDIQ contract also lists recommended deliverables for task orders in Attachment J-4.

When looking for information related to an audit of ESPC awards, key elements of energy-related savings should be documented for the deliverables required by the ESPC IDIQ contract in effect at the time of TO award. For example, the required deliverables for the Gen 4 DOE ESPC IDIQ contract are shown in Table 4.

**Table 4. Required deliverables from Gen 4 “DOE ESPC IDIQ Contract Section F – Deliveries or Performance.”**

Required Deliverable	Key Elements	Purpose
<b>Preliminary Assessment (if performed)</b>	Initial baseline assumptions	Background information for ECMs
<b>Final Proposal with IGA: Pre-Award &amp; Pre-Acceptance</b>	Energy Baseline details O&M Baseline details R&R Baseline details Implementation cost details Assumptions M&V Plan	Substantiate savings calculations with agreed upon baselines, assumptions, and historical measurements. Performance period service obligations (ESCO/Ordering Agency)
<b>Commissioning Report</b>	Commercial operation date	Verify when ECM officially begins generating savings
<b>Post-Installation M&amp;V Report</b>	Actual energy savings post installation	Verify the amount of energy savings being achieved upon commissioning
<b>Notice of Agency Project Acceptance</b>	Start of post-acceptance performance period	Commencement of post-acceptance performance period payments
<b>Annual M&amp;V Reports</b>	M&V Plan Execution Savings Guarantee	Verify guaranteed savings are achieved during performance period

<sup>7</sup> <https://nvlpubs.nist.gov/nistpubs/hb/2020/NIST.HB.135-2020.pdf>

Required Deliverable	Key Elements	Purpose
		Verify performance period services are executed per M&V Plan Documentation for annual witnessing activities (where required) Verify ESCO, agency obligations are being met

Energy savings-related documentation has been refined under the successive M&V guidelines and contract generations. If energy-related savings appear to be unsubstantiated in M&V reporting, other earlier contract documents may contain the requisite details.

## 6.4 Agency Witnessing during Project Development

During project development, the ESCO establishes the baseline energy usage that forms the basis for the resulting energy savings. A best practice identified by FEMP is that a clear understanding of current energy usage by the facility and the existing energy using systems is needed to determine the savings that will result from the installation, retrofit, or modification of the system or equipment completed as part of the ECM. Agency witnessing guidance and how it is addressed in the DOE ESPC IDIQ contract has evolved over time.

FEMP originally developed witnessing guidance in 2007 with the [\*Guide to Government Witnessing and Review of Post-Installation and Annual M&V Activities\*](#), which was prepared by the Agency Witnessing Working Group of the Federal ESPC Steering Committee and approved by the Federal ESPC Steering Committee in February 2007. FEMP updated the recommendations in the guidance in 2014 with the [\*Guide to Government Witnessing and Review of Measurement and Verification Activities\*](#), which more broadly captures activities associated with M&V from the baseline development to post-installation activities and annual M&V. Section C.4.6 of the 2008 DOE ESPC IDIQ contract (Gen 2 contract) states, “the agency should witness measurements and review calculations, records (e.g., utility bills) and other elements of the baseline, to confirm its accuracy...” Section C.4.2 of the Gen 3 and 4 DOE ESPC IDIQ contracts addresses government witnessing with the site-specific M&V plan. The instructions for M&V submittals that are required during the development of the TO award and post-award state, “This site-specific M&V plan shall include a schedule indicating M&V activities, recommended level of government witnessing for each ECM/WCM per the latest version of DOE FEMP’s *Guide to Government Witnessing and Review of Measurement and Verification Activities*”.

In more recent FEMP ESPC training, government witnessing activities have been emphasized to ensure that the agency witnesses and reviews baseline measurements during project development. Additionally, the [\*ESPC Project Development Resource Guide\*](#), published in July 2019, identifies government witnessing activities as early as the PA for M&V activities associated with the baseline, as required by the ECM or technical proposal.

## 7 ESPC Project Implementation and Post-Installation

During the project implementation phase, the ESCO completes the final design, constructs / implements the energy conservation measures, and verifies the ECMs' potential to perform. At the conclusion of the project implementation phase, the contractor submits a post-installation report to demonstrate potential to perform, summarize project implementation phase issues and outcomes, and document any energy savings achieved during project implementation. The performance phase begins once the energy conservation measures are installed, commissioned, and accepted by the government.

### 7.1 Project Installation Adjustments

The “ESPC Post-Installation Report Outline” in the DOE ESPC IDIQ contract requires documentation for any adjustments required between the final proposal at TO award and as-built conditions, including any relevant task order modifications. Changes and potential adjustments are addressed in FAR 52.243-1, “Changes-Fixed-Price,” and FAR 52.243-4, “Changes”, which are incorporated into the DOE ESPC IDIQ contract in Section I – Contract Clauses.

The cost of adjustments, if caused by the Contractor, must be borne by the Contractor. This includes all costs such as increased implementation costs, lost savings, and added financing cost. Under rare circumstances (e.g., certain unforeseen site conditions, government-initiated change orders, government-caused delays) an adjustment to the TO may be considered. Unlike appropriation funded projects, ESPC project payment schedules are time sensitive due to financing interest accrued during project implementation. If government-caused delays in the project installation timeline impact the planned project acceptance date, the payment schedule may need to be adjusted to account for the financing impact.

### 7.2 Validating Project Implementation-Period Savings and ECM Performance

#### 7.2.1 Agency Witnessing during Project Implementation and Post-Installation (and FEMP Post-Installation and Witnessing Guidance)

The Gen 4 DOE ESPC IDIQ contract states, “Inspections and measurements conducted by the Contractor for this post-installation report are to be witnessed by the ordering agency according to the approved site-specific M&V plan (Ref. Section C.4.2.c). The post-installation report shall be reviewed as recommended in the latest version of DOE FEMP’s *Reviewing Post-Installation and Annual Reports for Federal ESPC Projects*, and must be accepted in writing, by authorized ordering agency official(s).” While FEMP recommends that witnessing be required, it should be noted that the accuracy and oversight provided by witnessing can, in some cases, be achieved by means other than witnessing.

The ESCO’s annual validation of project implementation-period savings and ECM performance will require varying degrees of participation from agencies during project implementation and post-installation M&V. Because of the limitations of various M&V options, which are designed to balance performance risk with M&V cost, witnessing during project implementation and post-



installation M&V may be critical for performance verification during the life of the contract. The static factors and key parameters identified for each ECM may be documented at these phases and relied upon for the life of contract.

Consider the importance of witnessing during project implementation with respect to the energy baseline adjustments when such adjustments are warranted. Without witnessing the field conditions of these important aspects of the baseline (often referred to as *static factors*), confidence in savings may be compromised or disputed in future years. Provisions in 10 CFR 436.37, which states the following, are instructive:

Part 436.37 Annual Energy Audits. –

(b) The energy baseline is subject to adjustment due to changes beyond the contractor's control, such as

1. Physical changes to building;
2. Hours of use or occupancy;
3. Area of conditioned space;
4. Addition or removal of energy consuming equipment or systems;
5. Energy consuming equipment operating conditions;
6. Weather (i.e., cooling and heating degree days); and
7. Utility rates.

M&V Option A estimates baseline and post-installation energy use using an engineering analysis of measurements of the most critical parameter. In many applications, measurements are only taken once, following installation, as part of post-installation activities. Subsequent witnessing activities may be limited to inspections to verify potential to perform. The post-installation report is therefore a critical document for projects using an Option A approach (from *Reviewing Post-Installation and Annual Reports for Federal ESPC Projects*).

Additional resources are the Guide to *Government Witnessing and Review of Measurement and Verification Activities* and “ESPC Post-Installation Report Outline” found in the latest version of “*M&V Guidelines: Measurement and Verification for Performance-Based Contracts*.” Both of these documents are updated as needed; the version that was available during project development and/or at time of award should be referenced.

## 7.2.2 ECM Commissioning Activities (and FEMP Commissioning Guidance)

The DOE ESPC IDIQ contract requires a commissioning report upon ECM installation and completion of ECM commissioning for task orders awarded. *Commissioning* is defined in the contract as “procedures undertaken, generally by the contractor, to assure that ECMs and building systems perform interactively in accordance with design documentation and intent.” The effectiveness of many ECMs depends greatly on how they perform in the context of their



environment. The commissioning activities are defined in the commissioning plan, which is submitted with the proposal response to the TO RFP.

*Commissioning Guidance for ESPCs*, which was originally published in 2007, was revised in 2013 and 2015. This guidance provides a table summarizing the ordering agency and ESCO roles and responsibilities throughout the project development process. Commissioning is viewed as a separate process from M&V and is focused on verifying that ECMs pass a functional acceptance test; however, some witnessing requirements for M&V (e.g., potential to perform) may be accomplished and documented during the commissioning process. If some aspects of witnessing are not documented in the post-installation report, consider referencing the commissioning report for evidence of the activity.

## 8 ESPC Performance Phase and Verification Oversight

During the performance period phase, the contractor is responsible for the operation and maintenance of the energy/water improvements (even if the ordering agency performs these activities), measuring the energy savings, and submitting M&V reports in accordance with the ESPC. The reports outline the calculation of energy savings and any other evaluation of costs and savings needed to determine whether the savings guarantee was met. The ordering agency is responsible for ESPC administration for the entire term of the ESPC.

### 8.1 Project Contract Management

Project contract management for ESPCs will remain active for the life of the contract. From an auditing perspective, the contract file will contain evidence corroborating the contract management activities. Agencies and sites may vary in procedures, policies, and methods for executing contract management requirements. Key elements of administering the ESPC can be found in the required and recommended deliverables in the DOE ESPC IDIQ contract.

#### 8.1.1 Site Contract Management

The DOE ESPC IDIQ contract has two sections that reference deliverables and submittals. Section F.6 of the contract describes required deliverables as shown below, and Attachment J-4 lists recommended deliverables.

- F.6 Deliverables and Submittals
  - F.6.1 – Ordering Agency Requirements – Specific ordering agency deliverables will be specified in each TO. Attachment J-4 of this IDIQ contract provides recommended deliverables for TOs.
  - F.6.2 - Unless otherwise specified by the DOE ESPC IDIQ Contracting Officer, the Contractor shall distribute the required deliverables to DOE via the EERE Project Management Center (PMC).

The ordering agency should have a CO, COR, and a PF designated for an ESPC project. A CO and COR will be needed for the life of the contract. A PF is needed through project acceptance and then again for first-year M&V report review. A PF can be re-engaged at other times such as if a problem occurs that needs technical analysis or when a major modification is developed. The contract lists the recipients for recommended deliverables in Attachment J-4. Many of the ordering agency obligations during an ESPC, such as witnessing and performance period obligations, can be managed by the COR; however, signoffs and the acceptance of key documents and milestones remain the CO's responsibility.

Section G, "IDIQ Contract and Task Order Administration of the Contract," is a general reference for the ordering agency's responsibilities and TO administration.

Section G.7 of the DOE ESPC IDIQ contract requires the ordering agency to document the contractor's performance using the Contractor Performance Assessment Reporting System.

### 8.1.2 DOE Contract Management

Section G.1 of the current (Generation 4) DOE ESPC IDIQ contract states, “Administration of this IDIQ contract shall be accomplished by the DOE/Office of Energy Efficiency and Renewable Energy (EERE) Golden Field Office.” Attachment J-7 contains project management center upload instructions and states, “The U.S. Department of Energy’s EERE Project Management Center (PMC) web portal is the official system for uploading deliverables (to DOE only) for the DOE ESPC IDIQ contracts and awarded Task Orders (TO).”

FEMP published *[Guidance and Recommendations for Streamlining Reporting for Federal Energy and Water Efficiency Projects](#)*. All necessary data fields for 42 U.S.C. § 8253(f) and 42 U.S.C. § 8258(a) reporting requirements, as well as for ESPC-related reporting, are captured by eProject Builder.

## 8.2 Annual Performance Verification

The number and type of measurements and analyses performed in developing the annual M&V report are dictated by the M&V methods specified in the M&V plan and may comprise only a subset of data examined during commissioning and acceptance. In many cases, the number of measurements may decline over time as trends emerge that can reliably indicate future performance. Often a site visit by the ESCO is needed to gather the needed data for an M&V report. At a minimum, an annual energy audit (M&V) is mandated in the legislation authorizing ESPCs ([42 U.S.C. 8287 \(a\)\(2\)\(A\)](#)).

Once the report is finalized by the ESCO and accepted by the ordering agency, a copy must be added to the contract file. Some ordering agencies have also documented M&V report acceptance via contract modification.

Contractor-claimed savings are verified by executing the M&V plan, which typically includes an annual site visit to collect data, take measurements, and facilitate the appropriate agency witnessing. The ordering agency’s review and approval of the annual M&V report and associated elements is a key step in the process to verify that guaranteed savings have been achieved. From a contractual standpoint, the M&V plan is the agreed-upon method between the ESCO and ordering agency for verifying project performance and calculating the savings.

Unless specified as an M&V option in the project-specific M&V plan, reviewing utility bill data may not be an indicator of ESPC performance. In many cases, an ECM or project may affect only a fraction of the utility bill making it difficult to discern ECM or project significance from total building energy use data. Utility bill energy usage can also be significantly influenced by other factors, such as an increase in building energy usage, energy use variations unrelated to the ESPC ECMs, weather variations, and occupancy or schedule changes. These factors can affect the appearance of a change in a utility bill or even mask a change entirely. Proving that cost savings are met is not an accounting function; the ESCO’s guarantee of cost savings applies to the project as a whole, the aggregation of ECMs, and not on an ECM-by-ECM basis.

Additionally, typically stipulated utility rates are used in the ESPC in lieu of actual utility bill

rates in savings calculations. This is done because future utility rates occurring during the performance period are outside the control of the ESCO and ordering agency. Thus, an actual utility bill 10 years into a contract may be somewhat different from one based on the contractual terms. Utility bill rates may be observed in the context noted in Section 8.2.1.

### 8.2.1 Annual Review of Project Cost Savings

Project cost savings will be relative to the established baselines and may include stipulated year-over-year rate increases (e.g., escalation rates) for individual utilities and energy-related savings. The actual energy rates experienced during a contract year of a performance period do not apply to the guaranteed savings calculations. ESCOs generally do not accept the price risk of energy market fluctuations. Building this risk into the financing procurement price would likely make ESPC projects uneconomical. ESPCs rely on estimates of future conditions; the statute allows for agencies to rely on utility rate estimates in ensuring that energy savings exceed aggregate annual payments in each year of the ESPC (42 U.S.C. § 8287(a)(2)(B)).

Attachment J-2 of the Gen 4 DOE ESPC IDIQ states, “The escalation rate is the rate of change in price for a particular good or service, such as utility tariffs or contractor/subcontractor labor rates. In determining escalation rates the contractor shall comply with the latest version of FEMP’s *Guidance on Utility Rate Estimations and Weather Normalization in an ESPC*.” This guidance **recommends** the use of [NIST’s Energy Escalation Rate Calculator \(EERC\)](#)<sup>8</sup> for domestic federal ESPCs. FEMP’s guidance also lays out recommendations for water and sewer escalation rate estimation methods.

Tools such as the EERC compute an average annual escalation rate for a specified time period, which can be used for contract payments in ESPCs. The EERC also provides the long-term general inflation rate as a logical escalator for O&M- and R&R-related savings. EERC is updated annually based on the U.S. Energy Information Administration’s latest annual energy price projections and is a key risk mitigation tool for federal ESPCs.

### 8.2.2 Annual Review and Acceptance of Reports

FEMP published its guidance, *Reviewing Post-Installation and Annual Reports for Federal ESPC Projects*, in 2007. Project cost savings will have several components to verify, including energy savings, O&M savings, and R&R savings. FEMP publishes the *Post-Installation Measurement and Verification Report Review Checklist* and the *Annual Measurement and Verification Report Review Checklist* to assist agencies during the review and acceptance process. Agencies may follow this process for review or have established their own policy for the review process.

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<sup>8</sup> EERC is a tool created by the National Institute of Standards and Technology (NIST), to take estimates of future utility rates, as determined by DOE’s Energy Information Agency (EIA) and create an annual average. This process smooths the peaks and valleys of the EIA predictions to make annual contractor payments practical. To do otherwise would create serious agency budgeting complexity. Therefore, even a perfect EERC rate will have years above and years below the actual utility rate. The goal of this process is not to perfect an escalation for each, individual year, but to estimate as accurately as possible the aggregate escalation for the term of an ESPC project.

### 8.3 Facility Changes Impacting ESPC Projects

Changes are inevitable throughout a 25-year contract term and consistent with statutory direction, instructive practices for addressing such changes are in 10 CFR 436 Subpart B Section 436.37. Managing changes effectively can be challenging in the post-installation performance period, especially as personnel turnover occurs. The performance period M&V activities are designed to detect changes that impact the ESPC project savings and notify agencies via the annual M&V report. Ordering agency review and acceptance of the M&V report may generate follow-up decisions if ESPC savings are compromised. Facility changes outside of the ESCO's control are relatively common throughout the term of an ESPC. When guaranteed cost savings are affected because of mission changes or other ordering agency priorities, the ESPC may need to be modified to make a record of these changes.

Common factors routinely noted in M&V reports include:

- mission-driven changes;
- changes to space-temperature setpoints;
- changes to operating hours;
- removal of ESCO-owned equipment;
- change of baseline conditions, such as occupancy or building use;
- closure of buildings containing ECMs; and
- demolition of buildings containing ECMs.

When one of these changes occurs, the ESCO should note the change in the annual M&V report and either characterize or quantify the effect. The purpose of quantifying the effects of changes is not to assess the quality of the contract, but to provide direction to the ordering agency. For example, if a mission-driven change creates a large, negative impact on savings, the ordering agency may decide to forgo or modify the change. In most cases, however, the need for mission-driven changes outweighs the concern for the impact of those changes on savings. While FEMP strives to develop best practices to preserve savings, in keeping with the intent of the ESPC authority, it is well accepted that these projects must not compromise agency mission.

Many ESPCs set guaranteed savings below estimated savings, which provides a savings buffer for minor changes that are likely to occur. Likewise, ECMs can outperform or generate more savings than estimated as a result of changes. The order of magnitude for a particular ECM savings shortfall and its effect on the aggregate guaranteed savings requires ordering agency judgment on how to respond. A de minimis shortfall may only be acknowledged via routine ordering agency acceptance of the annual M&V report. In the event of a significant shortfall, the ESCO is generally responsible for restoring the performance of the ECM(s) to achieve the contractually agreed-upon savings, unless the cause was agency-driven as noted above.

Documenting an appropriate response in the contract file will ensure that the cost effectiveness of the ESPC over the term of the contract is not overlooked.

*The Practical Guide to Savings and Payments in FEMP ESPC Task Orders* notes that 42 U.S.C. § 8287(a)(2)(B) establishes that, “Aggregate annual payments by an agency...under an energy savings performance contract may not exceed the amount that the agency would have paid for utilities without an energy savings performance contract...during the contract years.” The guide further states, “The ESCO’s guarantee of cost savings is a wholesale guarantee that applies to the aggregate of implemented ECMs and by implication to the overall bottom line on the affected energy and energy and water related O&M and R&R accounts—but not to any one account or ECM in particular.”

The pre-installation baseline should also identify factors beyond the contractor’s control that influence post-installation energy use (e.g., building occupancy, weather, plug load creep). The contract should then establish agreed-upon values for these variables. For example, if TMY (typical meteorological year) is agreed to as a key factor in calculating equipment load, run time, etc., and thus savings, regardless of if a future year is hotter or colder than TMY, guaranteed savings will be calculated as though the TMY is being experienced. The categories of changes to which this principal applies are enumerated in the M&V section of the ESPC federal regulations (10CFR 436.37(b)). This section of regulations identifies these said categories as “changes beyond the contractor’s control” and provides that guaranteed savings will be calculated per the agreed-to contract values and not the actual value at the time of M&V analysis. Such adjustments make it easier to present the actual savings. The Risk, Responsibility, and Performance Matrix (RRP Matrix) will guide the identification of factors on which agreements may need to be reached.

## 9 ESPC Risk, Responsibility, and Performance Matrix and Quality Assurance

A link to the RRP Matrix is provided on the FEMP Resources webpage and is required to be submitted as part of the ESCO's technical proposal. Many independent variables could affect the energy savings guarantee for an ESPC, and the RRP Matrix summarizes how various contract elements may affect costs and savings. A completed RRP Matrix is an important document that helps explain whether the ESCO or ordering agency is responsible for key elements that can impact the performance of the ESPC. For the Gen 2 and Gen 3 DOE ESPC IDIQ contracts, FEMP published guidance, *Recognizing and Assigning ESPC Risks and Responsibilities Using the RRPM*, which can be accessed from the [FEMP ESPC resources webpage](#). Similar resources for the Gen 4 DOE ESPC IDIQ contract will be published on the FEMP ESPC resources page when available.

The RRP Matrix divides risks and responsibilities into three categories: financial, operational, and performance. Risks and responsibilities associated with each category are listed in Table 5. The RRP Matrix is part of the technical proposal and TO and is a reference for responsibilities and risk management throughout the contract term.

**Table 5. Risks and responsibilities for ESPC projects by category from the Gen 4 DOE ESPC IDIQ Contract.**

Financial	Operational	Performance
Interest rates	Operating hours	Equipment performance
Energy prices	Load	Operations
Construction/Project Implementation costs	Weather	Preventive maintenance
Hazardous materials	User participation	Equipment R&R
M&V confidence	—	—
Energy-related (one-time) savings	—	—
Delays	—	—
Major facility changes	—	—

In the event either the ordering agency or the ESCO fails to perform a specific obligation, remedial actions under an ESPC must satisfy all applicable legislative and regulatory requirements. Regardless of who performs the operations, maintenance, or repair and replacement, the ESCO bears ultimate risk of these activities, as well as assuring all guaranteed energy and/or water savings. FEMP guidance has explicitly included language to capture the ESCO's responsibilities with the Gen 4 DOE ESPC IDIQ, Gen 4 RRP Matrix, and FEMP M&V version 5.0. Meeting and sustaining the project cost savings requirements to cover the ESPC payments will depend on successfully evaluating and assigning risks for the project performance.



## 9.1 Quality Assurance in ESPCs

FEMP incorporates quality assurance throughout the ESPC process to establish how the government will ensure that the contractor performance is monitored and evaluated and that the contract terms, including guaranteed savings and performance, are met. FAR 37.601(b)(2) requires that performance-based contracts for service include measurable performance standards and a method of assessing contractor performance against those performance standards. As described in [FAR 37.603\(a\)](#), “performance standards establish the performance level required by the Government to meet the contract requirements. The standards shall be measurable and structured to permit an assessment of the contractor’s performance.” The FAR-described performance standards may fall under an ordering agency’s Quality Assurance Surveillance Plan (QASP), as defined in FAR 37.604. A QASP generally identifies what will be inspected, the inspection process, and who will perform the inspection. The DOE ESPC IDIQ contract incorporates many aspects of a standard QASP. FEMP guidance, tools, and templates have been developed as resources for quality assurance in ESPCs. Many of the FEMP templates and checklists will directly satisfy ordering agency QASP requirements. Table 6 shows general QASP sections with the corresponding elements of an ESPC.

**Table 6. QASP sections and corresponding ESPC elements.**

QASP section	ESPC element
Purpose	Defined in 42 U.S.C. § 8287 as “solely for achieving energy savings and benefits ancillary to that purpose”
Roles and responsibilities	Section G: IDIQ contract and TO administration of Gen 4 DOE ESPC IDIQ Contract
Performance requirements and assessments	Technical proposal: M&V plan, O&M plan, R&R plan Design and construction package: Implementation schedule, Installation plan, Quality control inspection plan, Commissioning plan
Performance reporting	Post-installation report, Annual M&V report

Agency-specific QASPs may have different formats, layouts, and content. Section J, “List of Documents, Exhibits, and Other Attachments,” in the DOE ESPC IDIQ contract can be used to satisfy many fundamental elements of an agency-specific QASP. Section J of the 2023 (Gen 4) DOE ESPC IDIQ comprises the following subsections:

- J-1, “Acronym List”;
- J-2, “Definitions of Applicable Terms”;
- J-3, “ESPC Technology Categories”;
- J-4, “Recommended Deliverables for Task Orders”;

- J-5, “Investor Deal Summary Template”;
- J-6, “Standard Finance Offer Template”;
- J-7, “Project Management Center Upload Instructions”;
- J-8, “eProject Builder System Instructions”;
- J-9, “Small Business Subcontracting Plan – Approved”; and
- J-10, “References and Web Links.”

## 10 Summary

This guide was developed for those tasked with conducting, assessing, or reviewing a performance audit of an ESPC, to support accurate reports with meaningful findings and recommendations by outlining key considerations including generation of the DOE ESPC IDIQ contract that applies to the TO award, FEMP guidance and resources available at the time of TO award, and activities related to project oversight and documentation. However, even with this guide and other resources, FEMP strongly advises auditors to seek FEMP ESPC expert assistance from the FEMP ESPC program manager and or federal project executives. Something as important and basic as determining whether a project achieved its guaranteed savings can require a high degree of ESPC expertise. Although uncommon, there are instances in which a missed activity or documentation makes this expertise necessary, such as determining whether missing documentation is a fatal flaw or simply poor record keeping of information that can be found elsewhere. Multiple instances exist in which an audit report asserted that payments were made in the absence of assurance that savings were achieved only to find after FEMP review that savings were validated as achieved and even, in some instances, exceeded.

This guide is intended to help inform ESPC project and performance auditors of the mechanics, guidance, and requirements for DOE ESPC IDIQ projects and provide the context for supporting the assessment of project performance, leading to more beneficial projects. The evolution of ESPC documents and guidance over the history of the program has changed and improved the requirements, guidance, and best practices identified in early contracts. When auditing ESPC projects, the appropriate project-specific guidance in force at the time of award should be referenced, which may be documented in the project's TO RFP, technical proposal, or pricing proposal. FEMP training, website resources, contract and project requirements, and other project resources are updated periodically to communicate best practices and improved guidance for agencies. The FEMP webpage "[Resources for Implementing Federal Energy Savings Performance Contracts](#)" contains a comprehensive overview of the resources for ESPCs organized by project phase. Most of these resources are dated so that specific versions can be traced to the dates when specific projects occur so that the requirements in effect when the project under review was implemented can be identified. Key resources with respect to past ESPC audit findings that could assist auditors are also highlighted in the context of this guide. When evaluating an agency ESPC program, determining the agency's current procedures and protocols is crucial, while still considering the guidance and procedures in effect during pre- and post-award phases for selected projects with respect to the specific influence of the project during the life of the contract. As a result of both internal lessons-learned-driven improvements and changes to FEMP guidance, an agency may modify its procedures. If the awarded contract allows Even a project awarded one year ago may be a faulty representation of the current program.

Understanding whether the root cause of an issue is pre-award or post-award will help in crafting effective recommendations. FEMP develops and encourages the use of guidance documents.

Furthermore, provisions may be modified by the ordering agency in the TO RFP, even if they are mentioned as “required” in the IDIQ contract. The required deliverables under the DOE ESPC IDIQ contract represent critical aspects that are needed by DOE to fulfill its administrative obligations. Recommended deliverables highlight areas of ESPC management that may vary in execution because of ordering agency-specific policies and procedures; however, they are generally accepted practices for project management that are likely to be required by other agency rules and regulations. The ordering agency and their CO and/or legal counsel are responsible for interpreting rules and regulations and making determinations for the ordering agency.

Guidance changes with lessons learned. Given the 25-year allowable term of ESPC task orders and the life-of-contract services and quality assurance activities supported by FEMP, the current best practices that are being shared with ordering agencies, ESCOs, and DOE PFs can be learned by communicating with FEMP and its ESPC team. Verbal guidance and feedback regarding ordering agency needs is routinely incorporated into new iterations of guidance, tools, training, and resources made available to provide continuous improvement to ESPC projects and processes for agencies.

## Glossary

<b>Annual M&amp;V Report or Annual Energy Audit</b>	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 [M&V]).
<b>Commissioning Report</b>	Summarizes for each ECM the intended operational performance, equipment installation, testing equipment and specifications, results of functional performance tests, any operational deficiencies identified and course of action to remedy and compliance with project intent. Ensures that ECMs and building systems perform interactively in accordance with design documentation and intent.
<b>Energy Baseline</b>	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.
<b>Energy Savings Performance Contract</b>	A firm-fixed-price contract meeting the statutory requirements of 42 U.S.C. §§ 8287, et seq., for the purpose of achieving energy and/or water savings and benefits ancillary to that purpose, which provides for the provision of supplies or the performance of services for the design, acquisition, installation, testing, measurement and verification, and, where appropriate, operation, maintenance, repair or replacement, of an identified energy conservation measure, water conservation measure, or series of energy conservation measures or water conservation measures at one or more locations. An ESPC requires no up-front capital costs or appropriations and the term of the ESPC may not exceed 25 years. Under an ESPC, the contractor must provide a performance guarantee (including guaranteed annual energy and/or water cost savings) to the federal agency.
<b>Estimated Energy Cost Savings</b>	Estimated energy cost savings are the contractor-estimated energy cost savings in dollars per year for each energy conservation measure (ECM), and equal to 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. The established energy prices are based on the energy tariffs or rate schedules in effect at the time the project is being developed. Because energy cost savings occur each year after ECMs are implemented, they are a recurring cost savings. Estimated energy cost savings by ECM are entered into Schedule TO-4, column (e).
<b>Guaranteed Annual Cost Savings (Guaranteed Savings)</b>	The guaranteed annual cost savings are the levels of annual cost savings the contractor is willing to guarantee for a TO project. The final values are presented in Schedule TO-1 for Gen 1 and Gen 2 contracts, column (e), and "Sch 1 Ann Cost Sav & Pymts" tab in eProject Builder for Gen 3 and 4 contracts, column (e). The guaranteed annual cost savings must exceed the annual contractor payments (Schedule TO-1 for Gen 1 and Gen 2 contracts), column (f); "Sch 1 Ann Cost Sav & Pymts" tab in eProject Builder for Gen 3 and 2 contracts column (f)) in each year of the TO post-acceptance performance period. For the first interval (generally 12 months) after

	<p>government acceptance of project implementation, 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. The project as a whole is guaranteed, not the savings of individual ECMs. An over-performing measure may compensate for one that is under-performing. The net benefit to the site is that it is realizing the savings.</p>
Investment Grade (Energy) Audit	<p>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.</p>
Post-Installation M&V Activities	<p>Post-installation measurement and verification (M&amp;V) 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 ensures 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 ordering agency.</p>
Reported Savings	<p>Savings as verified and reported by the ESCO as part of the Annual M&amp;V report, after completing M&amp;V activities outlined in the M&amp;V plan, contained within the technical proposal.</p>
Task Order Request for Proposal (TO RFP)	<p>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 [IDIQ] contract).</p>

