U.S. DEPARTMENT of ENERGY | Federal Energy Management Program

Determining Price Reasonableness in Energy Performance Contracts

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List of Acronyms and Abbreviations

CER	cost estimating relationships
CO/KO	contracting officer
COR	contracting officer representative
DoD	Department of Defense
DOE	U.S. Department of Energy
ECM	energy conservation measure
EPACT	Energy Policy Act of 1992
EPC	energy performance contract
ESCO	energy services company
ESPC	energy savings performance contract
FAR	Federal Acquisition Regulation
FEMP	Federal Energy Management Program
FPE	federal project executive
GSA	General Services Administration
IDIQ	indefinite-delivery, indefinite-quantity
IDS	investor deal summary
IGA	investment grade audit
IGCE	independent government cost estimate
M&V	measurement and verification
NOITA	notice of intent to award
NOO	notice of opportunity
O&M	operations and maintenance
PA	preliminary assessment
PF	project facilitator

PNM	price negotiation memorandum
R&R	repair and replacement
RRP Matrix	risk, responsibility, and performance matrix
SFO	standard financing offer
TO	task order
TO RFP	task order request for proposal
UESC	utility energy service contract

Executive Summary

This document provides recommendations concerning fair and reasonable price determination in federal energy performance contracts (EPCs), which include Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs). It reflects the experiences, lessons learned, and best practices of agencies implementing energy performance contracts, and is consistent with FEMP's training on this subject.

This document is an update of a 2005 document Determining Price Reasonableness in Federal ESPCs, last revised in 2015, which reported the findings and implementation recommendations of the Price Reasonableness Working Group to the Federal ESPC Steering Committee. The working group was formed at that time to address concerns of agencies and oversight organizations related to pricing and fair and reasonable price determination in federal ESPCs.

Federal Acquisition Regulation (FAR) 15.404-1 Proposal analysis techniques provides proposal analysis methods to ensure that the final agreed-to price is fair and reasonable and many of the techniques specified are useful for assuring price reasonableness in energy performance contracts. Therefore, FAR 15.404-1 forms the basis for this document.

Continuous improvement in the application of these practices will continue to increase confidence in agencies' abilities to complete robust price reasonableness determinations for their energy performance contracting projects. Continued and updated guidance is needed as still more agencies embark on new EPC projects.

The policy and information presented in this document can help ensure that agencies obtain prices that are fair and reasonable and provide best value for the government.

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1 Introduction

This document discusses analysis techniques to assist with fair and reasonable price determinations in federal energy performance contracts (EPCs). It reflects the experiences, lessons learned, and best practices of agencies using the Department of Energy (DOE) ESPC indefinite-delivery, indefinite-quantity (IDIQ) contracts and federal UESC projects, as documented by the Federal Energy Management Program (FEMP), and is consistent with FEMP's training on this subject.

The focus of this document is to provide federal agencies with a ready reference tool they can use to assist with review of EPC contractor pricing proposals. The policy and information in this document can help ensure that agencies comply with the FAR when negotiating and awarding EPCs, obtaining fair and reasonable prices and best value for the government.

The resource includes:

- A review of federal regulations applicable to determining price reasonableness of federal EPCs (Section 2),
- Brief descriptions of the techniques described in FAR 15.404-1 and their applicability to EPCs (Section 3), and
- Recommended strategies and procedures for cost-effectively completing and documenting price reasonableness determinations (Sections 4 and 5).

1.1 Need for Guidance

Fair and reasonable price determination in EPCs has sometimes been a challenge for agencies, primarily when this financing vehicle was relatively new and relatively rare in the federal sector. All branches of the government have experience in implementing appropriations-funded contracts and there are a number of effective methods to determine price reasonableness in these contracts. Implementing an EPC typically includes third party financing and is fundamentally different from the process used in more conventional contracting mechanisms, however the methods of determining price reasonableness are similar.

Federal EPC projects are implemented with methods of price competition that are somewhat different from typical appropriations-funded projects. A perception that prices are higher in EPCs than appropriations-funded projects may result if only a direct comparison is considered. However, direct comparisons of EPC projects and appropriations-funded energy conservation projects are not appropriate. Most agency-level appropriations-funded energy conservation programs are carried out in two stages: surveys and design/implementation. Funding is first provided for detailed surveys and studies of a broad range of competing projects at different facilities. Program managers then select the projects with the best economics and provide funds for design completion and equipment installation when available appropriated funds are all

allocated. Although the expense of the cost-benefit analyses for all measures found to be not cost-effective or were not funded for other reasons is very real, it is not included in the price of the projects selected for implementation. In EPCs, on the other hand, it is the Contractor (ESCO or utility) that performs cost-benefit studies, eventually proposing measures that are the most economically viable, and all of the survey and study costs are included in the price of the project. Because the costs of feasibility studies and project development are included in EPCs but excluded from the prices of these agency-funded projects, the measures installed under EPCs appear more expensive.

Another misperception is that EPCs are always less cost-effective than appropriations-funded energy projects because private-sector financing is more expensive than what can be obtained by the U.S. Treasury. In fact, careful comparisons of the costs of projects implemented through EPCs and appropriations-funded programs with the two-stage process described in the paragraph above show that in many cases, EPCs are the better value. Often appropriations-funded projects must wait years to be implemented, resulting in lost energy and cost savings and increased prices; these costs can quickly exceed the cost that interest payments add to the EPC project (Hughes, Shonder, Sharp, and Madgett, 2003).

EPC projects are similar to design-build contracts, except that the contractor (i.e., the utility in the case of UESC, and the energy services company (ESCO) in the case of ESPC) generally develops a firm-fixed-price proposal when the design is less than 100% complete (typically only about 30 – 60%). Without a completed design package, it is difficult for the government to perform traditional cost analyses or to develop an independent government cost estimate (IGCE) to compare with the price proposal. Unable to rely on customary methods, some agencies have struggled with how to perform timely, cost-effective price reviews of EPC projects. The federal requirements for determining price reasonableness in ESPCs are reviewed in Section 2.

1.2 Importance of Price Reasonableness in EPCs

The responsibility to ensure that the government pays fair and reasonable prices for the goods and services it buys is critical in EPCs, where the procurement is usually financed over time. There are several elements that require review in determining price reasonableness, as depicted in Table 1 for ESPCs and UESCs. Elements that should be reviewed in making a price reasonableness determination will be discussed in subsequent sections of this document. Section 5 includes a model price negotiation memorandum that agencies can be used to assist in documenting the results of their analysis and incorporates the pricing elements from Table 1.

Table 1. Cost Elements of ESPCs and UESCs

Cost Element	ESPCs	UESCs
Project Development	- Up-front costs such as Preliminary Assessment (PA) not paid by agency unless a contract is awarded - Investment Grade Audit (IGA) with measurement & verification plan, and other development costs not paid by an agency unless a contract is awarded	- Preliminary Assessment (PA) typically not paid by agency unless a contract is awarded - Investment Grade Audit (IGA) with performance assurance plan, and other development costs may be paid by agency prior to contract award.
Costs of Goods and Services	Direct (base) construction costs - By ECM (on Schedule 2a) - By Project (for DOE ESPC IDIQ contract on Schedule 2b), including subcontractor costs, measurement & verification (M&V) equipment installed during construction, contractor self-performed work, and other direct purchases of equipment, material, supplies	Direct (base) construction costs by ECM on Schedule 2a.
Project Implementation Delivery Charge (markup)	Project costs related to design, project management, commissioning, training, and M&V services, performance and payment bonds, overhead, and profit.	Overhead and profit for implementation expenses and performance period services.
Financing	Financing procurement costs, project interest	Financing procurement costs, project interest
Performance Period Services	Contract administration, performance period management, M&V, operations and maintenance, repair and replacement, etc.	Contract administration, performance period management, performance assurance, operations and maintenance, repair and replacement, etc.

Figure 1 shows the total contract costs by cost category of a representative ESPC project; the distribution will be similar for UESCs. In this example project, the implementation price, which is the installed cost of energy conservation measures, accounts for the largest share of the total, about 48%. The financing-related costs, including interest, account for another 28%. These financing-related costs depend directly on the prices of energy conservation measures (ECMs). As the figure shows,

when the package of ECM prices in the representative EPC project is increased by 10%, the total sum of payments over time increases by 21%.

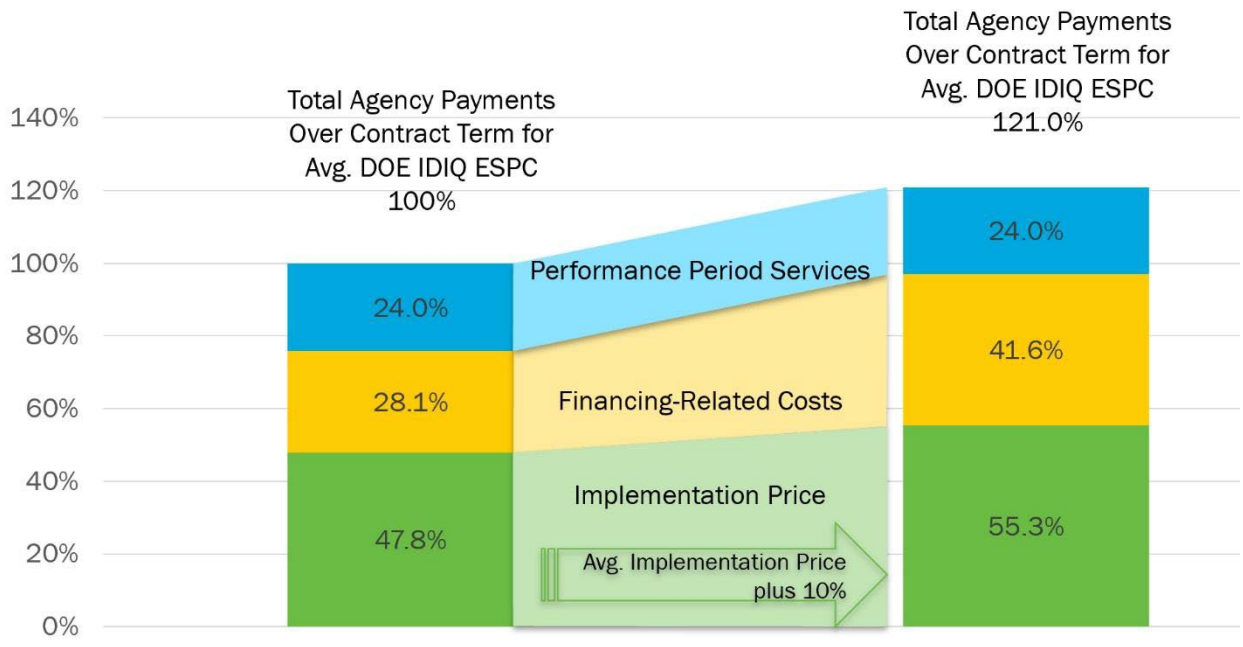

Figure 1. Impact of fair and reasonable pricing in EPCs.

Determining fair and reasonable pricing is perhaps more important in financed contracts such as ESPCs and UESCs than in conventional contracts. If the implementation price for the average EPC project increases by 10%, total agency payments over the term of the contract increase by 21%. Chart from Pricing in ESPCs FEMP training.

Performance-period services can account for a significant cost component of an EPC project; in this example, approximately 24% of the total costs over the life of the project. Ensuring that prices for these services are fair and reasonable is also important. While these costs are not financed, they have an indirect effect on financing costs: A 10% increase in the cost of performance-period services increases total costs over the term of the ESPC in this example by 6% due to impacts on the annual payments and cashflow.

2 Federal Requirements for Determining Fair and Reasonable Pricing in EPCs

The ESPC and UESC enabling legislation does not exempt federal agencies from procuring energy performance contract services from responsible sources at fair and reasonable prices. EPCs must comply with the FAR's pricing competition requirements. The fact that EPCs are paid from savings does not exempt agencies from making sure that they're getting reasonable prices on their projects. Likewise, the requirement to consider life-cycle cost does not replace or supersede the requirement to comply with FAR 15.4 and to perform fair and reasonable price determinations with due diligence.

The prices paid for all equipment installed under the EPC should be fair and reasonable, and aligned with prices paid for similar equipment in the private sector.

2.1 Considerations for Determining Fair and Reasonable Pricing in UESCs

UESCs do not have a specific exemption from certified cost and pricing data. Adequate price competition is necessary for contracting officers (COs/KOs)[1] to exempt a firm-fixed-price contract from requirement of certified cost and pricing data (FAR 15.403-1). It is the CO/KO who determines if the utility has provided the necessary documentation and pricing details to meet a threshold of "adequate price competition."

2.2 Considerations for Determining Fair and Reasonable Pricing in ESPCs

The National Energy Conservation Policy Act, as amended, establishes the authority for the government to enter into the guaranteed-savings contract of ESPCs (42 U.S.C. 8287 – 8287d). The Secretary of Energy is directed to "establish appropriate procedures and methods for use by Federal agencies to select, monitor, and terminate contracts with energy service contractors in accordance with laws governing Federal procurement that will achieve the intent of this section in a cost-effective manner." (42 U.S.C. 8287(b)(1)).

As specified in Title 10 of the Code of Federal Regulations (CFR) Section 436 Subpart B, Methods and Procedures for Energy Savings Performance Contracting, the heads of procuring activities shall waive the requirement for submission of certified cost or pricing data for ESPCs (10 CFR 436.33(c)(2)). However, offerors are not exempted from submitting information (including pricing information) required by the Federal agency to ensure the impartial and comprehensive evaluation of proposals (Id.). Agencies can and should still request from the ESCO all the information they need to determine whether prices are reasonable. 10 CFR 436.33 does not specify how agencies are to determine price reasonableness.

ESPCs must be approached in the same way an individual approaches the purchase of a home or an automobile — by first seeking a fair price for the item and then seeking the best available financing. Seeking a fair price is the objective of a price reasonableness determination and is the focus of the remainder of this document.

10 CFR 436 does not address UESC's and does not specify how price reasonableness of UESCs should be determined. Accordingly, agencies should use the FAR as the benchmark for performing pricing evaluations. FEMP may provide assistance, tools, and best practices specific to ESPCs to help assure price reasonableness.

[1] Note contracting officer is abbreviated as CO in civilian agencies and KO in defense agencies.

3 Bedrock Requirements — FAR 15.404-1

3.1 Applying FAR 15.404-1 to EPCs

ESPCs and UESCs, as government procurements, are required to comply with FAR Subpart 15.4, *Contract Pricing*. Price reasonableness determinations are required for all price components, including project development, ECMs, performance-period services, and financing.

The FAR requires COs/KOs to purchase supplies and services from responsible sources at fair and reasonable prices. Although the FAR does not define what constitutes a fair and reasonable price, the term is understood to mean the price that would be paid by a prudent person considering the current market environment.

FAR 15.404-1, *Proposal Analysis Techniques*, describes the techniques COs/KOs are to use to ensure that final agreed-to prices are fair and reasonable. The main techniques are provided in Table 2. *Note that FAR 15.404-1(b)(3) indicates that comparison of proposed prices in response to the solicitation and comparison of proposed prices to historical prices paid are the preferred techniques*. Where not practicable or feasible, other analysis techniques in FAR 15.404 should be used either individually or in combination.

Table 2. Main FAR Proposal Analysis Techniques

Technique	Abbreviated Summary from FAR 15.404-1
Price analysis	the process of examining and evaluating a proposed price without evaluating its separate cost elements and proposed profit.
Cost analysis	the review and evaluation of any separate cost elements and profit in a contractor's proposal, as needed to determine a fair and reasonable price or to determine cost realism.
Cost realism analysis	the process of independently reviewing and evaluating specific elements of each offeror's proposed cost estimate to determine whether the estimated proposed cost elements are realistic for the work to be performed; and reflect a clear understanding of the requirements.
Technical analysis	CO/KO request that personnel with specialized knowledge, skills, experience, or capability in engineering, science, or management perform a technical analysis of the proposed types and quantities of materials, labor and other associated factors

These techniques, discussed in section 3.2 below, can be used singularly or in combination.

Price analysis typically requires less information than cost analysis, but where price reasonableness cannot be established through price analysis alone, cost analysis may

be warranted. For EPCs, these are firm-fixed price contracts, where the various price analysis techniques outlined in FAR 15.404 should be adequate to determine adequate determination of price reasonableness.

Cost analysis is a more detailed assessment of the need for and reasonableness of each of the individual cost elements that make up the offeror's price proposal, including labor, materials, and overheads, etc. and tends to be more costly and time-consuming than price analysis. Although cost analysis provides a more detailed analysis of a proposal, the final price reasonableness determination should be made on the basis of overall price. Overall price includes all cost elements as a total turnkey price proposal; each cost element does not have to be evaluated individually to determine reasonableness. This analysis technique should be used if other proposal analysis techniques are not sufficient to determine reasonableness.

Cost realism may be used on competitive fixed-price-type contracts when new requirements may not be fully understood by competing offerors, there are quality concerns, or past experience indicates that contractors' proposed costs have resulted in quality or service shortfalls. Results of the analysis may be used in performance risk assessments and responsibility determinations.

COs/KOs may request that personnel having specialized knowledge, skills, experience, or capability in engineering, science, or management perform a technical analysis of the proposed project scope, including types and quantities of materials, labor, processes, subcontracts, special tooling, equipment or real property, the reasonableness of scrap and spoilage, and other associated factors set forth in the proposal(s) in order to determine the need for and reasonableness of the proposed resources, assuming reasonable economy and efficiency.

3.2 FAR Analysis Techniques

3.2.1 Price Analysis

Price analysis is defined in the FAR as "the process of examining and evaluating a proposed price without evaluating its separate cost elements and proposed profit." This encompasses a number of different techniques. Many of these techniques are directly applicable to EPC and are discussed in sections 3.2.1.1-3.2.1.7 below.

3.2.1.1 Adequate Price Competition

Comparison of proposed prices received in response to the solicitation. Normally, adequate price competition establishes a fair and reasonable price. — FAR 15.404-1 (b)(2)(i)

Adequate price competition provides a comparison of proposed prices received in response to a solicitation. FAR 15.404-1 (b)(2)(i). In EPCs the contractor (i.e., ESCO or utility) is often selected before the project is defined sufficiently to support a full and open price competition (e.g., final ECMs may not be known at the time of solicitation). Adequate price competition can be used under EPC projects by comparing competitive

bids obtained by ESCOs or utilities from potential subcontractors and financiers. This technique, comparing competitive bids, should be the first method of supporting the selection of subcontractors and financiers on the basis of price or overall value.

3.2.1.2 Comparison to Historical Prices Paid

FAR 15.404-1(b)(2)(ii) provides the basis for use of prior prices paid for the same or similar items. It also includes the following details:

- The prior price must be a valid basis for comparison. If there has been a significant time lapse between the last acquisition and the present one, if the terms and conditions of the acquisition are significantly different, or if the reasonableness of the prior price is uncertain, then the prior price may not be a valid basis for comparison.
- The prior price must be adjusted to account for materially differing terms and conditions, quantities, and market and economic factors. For similar items, the CO/KO must also adjust the prior price to account for material differences between the similar item and the item being procured.
- Expert technical advice should be obtained when analyzing similar items, or commercial products or services that are "of a type" or requiring minor modifications for commercial products, to ascertain the magnitude of changes required and to assist in pricing the required changes.

Generally, ECMs installed under EPCs have a history of the installation of similar technologies at other locations either in previously awarded EPCs or in appropriations-funded energy conservation programs. Prices paid in the past can be used to determine whether the prices offered for similar equipment and services are fair and reasonable.

The project team often has access to a great deal of information on past pricing for similar ECMs from its own site or from agency-level service organizations. FEMP maintains a database of prices for all of the ECMs installed under its IDIQ ESPCs and makes the information available as requested to project teams installing similar ECMs in other projects.

For comparisons to be valid, adjustments in the data are required. The comparisons would ideally be made against prices from past EPCs (as opposed to standard procurements). The combination of partial design and required performance guarantee adds an element of risk to the ESCO that is not typically present in design-bid-build procurements. Additionally, prices are affected by site-specific factors such as safety and security requirements and the cost of labor in the local economy. Likewise, no two contracting mechanisms are identical. Caution should be exercised when comparing prices offered in EPCs, which are design-build contracts with performance assurance or guarantees, to prices received for previous projects in which the site may have received

funding for partial design from an agency energy conservation program. Adjustments for general inflation must be made as well.

3.2.1.3 Estimating Methods

Use of parametric estimating methods/application of rough yardsticks (such as dollars per pound or per horsepower, or other units) to highlight significant inconsistencies that warrant additional pricing inquiry. — FAR 15.404-1 (b)(2)(iii)

Terms for such yardsticks include cost estimating relationships (CER) and price benchmarks. CERs and price benchmarks are mathematical relationships, usually based on statistical analysis, between price as the dependent variable and one or more physical characteristics of the item or system purchased as independent variables. CERs can be used to extend the technique of comparing proposed prices with previously proposed prices described above.

Most CERs and price benchmarks are based on extensive data and require corrections for project scope, general price inflation, and geographical location, as well as statistical analysis to determine the relationship itself. However, information on past pricing from the site, the agency, or other sources can be used by acquisition teams to develop their own CERs.

Appendix B provides details on using benchmarks in price analysis.

3.2.1.4 Competitive Published Prices

Comparison with competitive published price lists, published market prices of commodities, similar indexes, and discount or rebate arrangements. — FAR 15.404-1 (b)(2)(iv)

This refers to catalog prices and General Services Administration (GSA) schedules, as well as cost-estimating guides published by firms such as RS Means, Marshall and Swift, and Craftsman. These lists and guides provide pricing for specific commercial items such as boilers and chillers. EPC projects often involve demolition of existing equipment as well as installation of new equipment, and so the ECM price will include more than just the commercial cost. For this reason, price lists and guides are used more in cost analysis than in price analysis.

3.2.1.5 Independent Government Cost Estimates

Comparison of proposed prices with independent Government cost estimates. — FAR 15.404-1 (b)(2)(v)

An independent government cost estimate (IGCE) can also be used to establish price reasonableness in EPCs if the necessary resources are available. The IGCE is the government’s estimate of the resources needed and the estimated cost of those

resources that a prudent contractor would incur in the performance of a contract. The estimate includes both direct costs (e.g., labor, supplies, equipment, and transportation) and indirect costs (e.g., labor burden, overhead, general and administrative expense, and profit or fee).

Agencies often have an IGCE done as part of acquisition planning and preparing a procurement request. At this stage agencies use an IGCE to establish costs at a rough order of magnitude and the required level of review for the potential procurement. To support reviews required for approval of pursuing an EPC procurement, agencies may reach out to FEMP, which can help by providing information on ECM prices based on data from previous EPC projects. This can give the agency an indication of whether estimated prices are within a reasonable range.

A recommended best practice is to use an IGCE to strengthen agency resources for determining price reasonableness going forward. After reviewing the final proposal, the agency should revisit the IGCE and consider any updates to the policies and procedures they established during the acquisition planning phase, in preparation for future projects. They can build a database of their own that tracks what ECMs cost at award for the project and use that information to establish realistic cost ranges for the next EPC.

3.2.1.6 Market Research

Comparison of proposed prices with prices obtained through market research for the same or similar items. — FAR 15.404-1 (b)(2)(vi)

In some cases, useful pricing information can be obtained through market research. An example would be the solicitation of price quotes from other suppliers. However, as with the use of price lists and guides, the information obtained usually applies to specific commercial items. Again, because EPC projects often involve demolition and construction, information obtained through market research tends to be more useful in cost analysis than in price analysis.

3.2.1.7 Analysis of Pricing Information Provided by the Offeror

Analysis of data other than certified cost or pricing data (as defined at 2.101) provided by the offeror — FAR 15.404-1 (b)(2)(vii)

Prices proposed by the offeror to other customers can also be used to establish price reasonableness. FAR 15.402 (a)(2)(ii)(A) lists the preferred source of information to be that which is available within the government, followed by that which is available from sources other than the offeror. Information provided by the offeror is only to be used if necessary.

3.2.2 Cost Analysis

In addition to use of the price analysis techniques described above to establish price reasonableness, CO/KOs may use cost analysis, defined in FAR 15.404-1(c)(1) as:

> [T]he review and evaluation of any separate cost elements and profit or fee in an offeror's or contractor's proposal, as needed to determine a fair and reasonable price or to determine cost realism, and the application of judgment to determine how well the proposed costs represent what the cost of the contract should be, assuming reasonable economy and efficiency.

For a cost analysis, the CO/KO needs a detailed breakdown of the offeror's price into material, labor, and overhead costs. While several different cost analysis techniques are listed in FAR 15.404-1(c), the process comes down to verifying the necessity for and reasonableness of each of the elements in the offeror's cost proposal. Many price analysis techniques are also applicable in cost analysis to assess the reasonableness of individual cost elements. For example, proposed costs of individual pieces of capital equipment can be compared with previously proposed prices for similarly sized equipment. Price benchmarks can also be used at the level of individual costs. Price lists, catalogs, and cost estimating guides are generally most useful in cost analysis.

It should be noted that the more detailed, in-depth review carried out in a cost analysis does not necessarily assure price reasonableness. For example, consider the procurement of a computer. An offeror could submit a detailed price proposal including all of the materials and labor required to fabricate each individual electronic component and combine them together on circuit boards. While cost analysis might judge each individual cost to be fair and reasonable, the overall price of building a computer from scratch would be much higher than purchasing one on the open market. For this reason, the FAR specifies that even where cost analysis is used, price analysis should also be used to verify that the overall price is fair and reasonable. FAR 15.404-1(a)(3).

3.2.3 Cost Realism Analysis

Since EPCs are firm-fixed price and not cost-reimbursement contracts or fixed-price incentive contracts, cost realism is rarely used (FAR 15.404-1(d)(3)).

3.2.4 Technical Analysis

In technical analysis, the CO/KO seeks the opinion of individuals with specialized knowledge of the equipment or services being procured [FAR 15.404-1(e)]. These individuals would generally be individuals with technical and cost expertise relevant to the proposal who would examine, at a minimum, the types and quantities of materials proposed and the need for the types and quantities of labor hours and the labor mix. Also, agency or site-level engineering staff are usually integral members of the EPC project team, and their analysis of cost proposals is carried out as a normal part of the

review process. Less common or more complex ECMs such as geothermal heat pumps, renewable energy installations, or combined heat and power equipment may require review by independent experts such as DOE National Laboratory personnel.

3.2.5 Summary of Applicable FAR Proposal Analysis Techniques

The recommended techniques and their application to federal EPCs are summarized below in Table 3.

Table 3. FAR Techniques and Application to Federal EPCs

FAR Technique	Application to Federal EPCs
1. Price analysis — Analyze price of each ECM, each performance-period service, and financing individually.	Is preferred over, and requires less information than, cost analysis
a. Adequate price competition	Contractor should compete subcontracts and document results
b. Comparison of proposed prices to historical prices paid	Can be applicable if data are available. Data may be available from agency records. FEMP may also be able to provide comparable data on some ECMs
c. Parametric estimating methods — An extension of comparing proposed and past prices — cost estimating relationships (e.g., dollars per ton of chiller capacity) calculated from past pricing data	May be used to supplement other methods as needed
d. Comparison with competitive published prices	Can be used for equipment installations when equipment sizes and quantity are known
e. Comparison of proposed prices with independent government cost estimates	Can be a useful tool depending on completeness of the ECM design
f. Market research	Can be used to determine prices paid for similar equipment in the past
g. Analysis of pricing/cost information provided by offeror (data other than certified cost or pricing data)	Using information from within government is preferable to using information from offeror
2. Cost analysis — Analyze various cost elements of each ECM, each performance-period service, and financing individually	May be used when a fair and reasonable price cannot be determined using price analysis techniques alone
3. Technical analysis — Consultation with individuals with specialized knowledge of equipment or services being procured, who examine, at minimum, types and quantities of materials and labor requirements and costs	Depending on the type of expertise needed, may be provided by site or agency engineering staff, independent experts (e.g., DOE National Labs), or others

4 Recommended Strategies for Cost-Effective Assurance of Fair and Reasonable Pricing

4.1 Introduction

The strategies recommended for price reasonableness determination in federal EPCs follow best practices and lessons learned documented by FEMP and the community of federal EPC users. These best practices can help agencies navigate the process and the analysis in price reasonableness determinations.

The recommended process for determining price reasonableness in federal EPCs complies with the FAR's direction on proposal analysis and relies on the techniques described in FAR 15.404-1. Undoubtedly, many of these activities are routinely carried out by agencies in some form.

The following are some key points about pricing in EPCs:

- The agency is responsible for determining that the contract price is fair and reasonable in accordance with FAR 15.4.
- For task orders issued under a DOE ESPC IDIQ contract, pricing is summarized in the financial schedules in the price proposal – in the Summary Schedule, Schedule TO-2a, Schedule TO-2b, and Schedule TO-3. Similar financial schedules may be used for UESCs as well; with the exception of Schedule 2b, which is required for task orders under DOE ESPC IDIQ contracts.
- The contractor must provide information supporting ECM and project pricing consistent with the DOE ESPC IDIQ contract and as specified by the ordering agency in the task order request for proposal (TO RFP); ordering agencies should define supporting pricing information needed for UESC proposals in the IGA scope of work.
- Analysis is required to ensure that agencies are paying a fair and reasonable price.

4.2 FAR 15.404 Applicability to EPCs

The key elements of FAR 15.404 that apply to federal EPCs are as follows:

- Price reasonableness determinations are required for all EPC price components, including ECMs, performance-period services, and financing costs. Pricing of each ECM and each service should be considered individually.
- The procurement process used in federal EPCs tends to favor price analysis over cost analysis.

- Where price reasonableness cannot be established through price analysis alone, cost analysis may be used.
- Even when cost analysis is used, price analysis should also be used to verify that the overall price is fair and reasonable.

4.3 Strategies and Best Practices for Agency Price Review

4.3.1 Overall Review Strategy

Analysis and review of pricing starts with the financial schedules (a.k.a. TO schedules) in the contractor's pricing proposal.

Look for reasonableness, consistency, and back-up documentation on:

- ECM implementation price
- Performance-period expenses
- Contract/task order financing costs
- All competitive subcontractor quotes
- Completeness of total price that reflects appropriate implementation costs
- Performance-period services that are consistent with assignments per Risk, Responsibility, and Performance Matrix (RRP Matrix) (required for DOE ESPC IDIQ task orders and recommended for UESCs).

4.3.2 Supporting Information on Pricing from Contractor

The DOE ESPC IDIQ contract requires that the ESCO provide documentation to support the data in the TO schedules, as well as any ordering agency-specific requirements for price/cost details provided in the TO RFP for project development costs, implementation costs, and performance-period expenses. Ordering agencies can require similar approaches on supporting detail in UESC projects.

Subcontract pricing is valuable information and may cover a large part of the total price, and the agency may require the contractor to provide information on the competition and selection of subcontracts. FAR 15.404-3 *Subcontract pricing considerations* requires contractor analysis of subcontract prices included in proposal.

Table 4. Resources for Pricing Review

Resources for Pricing Review
• Supporting information supplied by the contractor (at whatever level agency specifies)
• IGCE
• Site- and agency-level historical purchase data
• Site- and agency-level experts

Resources for Pricing Review
• Project facilitator
• National laboratory experts on specific technologies
• For DOE ESPC IDIQ task orders, DOE Golden Field Office contracting support

4.3.3 First Steps in Pricing Review

A useful first step in a pricing review is to assess the quality and completeness of the pricing support data provided by the contractor to ensure that the agency has all the information it needs to analyze price, including data needed to assess subcontractor quotes and review the contractor's analysis of subcontract pricing (FAR 15.404-2 and15.404-3). Costs in the financial schedules should be transparent, disclosed and allocated correctly, and traceable both between schedules and to supporting price documentation. Review and thorough understanding of the proposed scope of work, implementation plan, and agency and contractor responsibilities will help the agency CO/KO as they perform pricing review.

4.3.4 Agency Resources for Pricing Review

There are many resources agencies can draw on to help with price or cost analysis. The DOE-qualified Project Facilitator (PF) (required for all ESPC projects using the DOE ESPC IDIQ contracts) can provide assistance with price review, and often can provide analysis to validate the reasonableness of prices for individual ECMs. A PF is also highly recommended for UESC projects.

Larger agencies have experts and centers of expertise who can help, and many also collect site- or agency-level data that may be useful. The technology experts at the national laboratories who are on the FEMP EPC team can help with specific technologies. The DOE Golden Field Office contracting support for the DOE ESPC IDIQ contracts can also help with this analysis. A best practice is to ask the contractor for more information if more information is needed.

4.4 Price Analysis through the EPC Process

4.4.1 Preliminary Activities

Project and acquisition planning includes initial exploration of the feasibility of a pay-from-savings project. For ESPCs using the DOE ESPC IDIQ contracts, the CO/KO notifies all ESCOs holding a DOE ESPC IDIQ contract through a Notice of Opportunity (NOO); for UESCs, the CO/KO notifies a site's serving distribution utilities that offer UESC services through a Letter of Interest (LOI) or Sources Sought Notification (SSN). The agency acquisition team, which guides the project to its completion, is also formed at this time. The agency acquisition team should establish early on that one of its key objectives is to obtain fair and reasonable prices for the equipment and services that are being procured.

The two members of the agency acquisition team that lead the effort are the ordering agency CO/KO and the ordering agency CO/KO Representative (COR). It is the ordering agency CO/KO's responsibility to determine that the supplies and services are purchased at a fair and reasonable price. The ordering agency CO/KO should make the team aware that the prices for ECMs and performance-period services received in the EPC must be fair and reasonable according to the FAR. Because the focus in developing EPCs is often on the requirement for the project to pay for itself out of the savings it generates, this concept may be unclear to some individuals on the team, so it is worth emphasizing. The agency COs/KOs should formally communicate the level of details required in the contractor's price proposal.

Although nothing is finalized at this stage, sites usually begin with some specific ECMs in mind, and the team should begin to consider how price reasonableness determinations will be performed for each one. Some questions to consider are:

- Are there any available price benchmarks or cost estimating relationships for these ECMs?
- Have similar ECMs been installed at this site (or another site within the agency) in the past? If so, who at the site is familiar with the work?
- Can the total installation price (including feasibility/initial design) of these previously installed ECMs be established?
- Are there conditions/regulations at the site that could make these ECMs more expensive (or less expensive) to install than at other sites?
- What type of information or assistance can the PF provide?
- Is there a need for assistance from outside sources (agency support organizations, DOE, private subcontractors)?
- Who are some likely candidates to provide the information required?
- What is the cost of using these sources?
- How much lead time is involved in obtaining them?
- What other information sources are available to make the price reasonableness determination?
- Are there any agency-specific policies on price reasonableness that must be followed?
- What type of data is necessary to determine price reasonableness?
- What type of cost/price and technical support data per ECM is the contractor to provide in the proposal?

In addition to ECM prices, the acquisition team must ensure that fair and reasonable prices are received for performance-period services such as operations and maintenance (O&M), repair and replacement (R&R), and measurement and verification (M&V) activities. The team should begin considering how the price reasonableness determinations will be made for these services. Some questions to consider include the following:

- Who will be performing O&M and R&R on the installed equipment — the contractor, site staff, or a third party?
- If similar ECMs or systems have been installed at the site in the past, is there information available on their O&M and R&R costs?
- What M&V options and methods are typically used for ECMs like these?
- What cost information is available for these M&V activities?
- Who are some likely candidates to provide the information required?
- What type of information can the project facilitator provide?
- Is there a need for assistance from outside sources?
- What is the cost of using these sources?
- How much lead time is needed in order to obtain them?
- What other information sources are available?

In the project planning stage, the main concern is to put these questions on the table so that the acquisition team recognizes the importance of price reasonableness and can begin considering how to address it.

4.4.2 Pricing Reviews for Preliminary Assessment and Proposal

The recommended process for reviewing pricing is essentially the same for both Preliminary Assessment (PA) and the final proposal submission. However, the goals of the two reviews and expected levels of effort for each are very different.

Review of pricing at the PA phase is a quick once-through to ensure that the proposed prices are realistic, as part of the effort to determine whether the proposed project is feasible and adequately addresses the ordering agency's needs and priorities prior to beginning the investment-grade audit (IGA).

The submitted proposal, based on the IGA, contains both the technical proposal and price proposal and requires more intensive price review. The price proposal contains the TO financial schedules that define the deal the ordering agency is entering into for the duration of the EPC term and is the true object of the FAR's requirements for COs/KOs to establish that prices in government contracts are fair and reasonable.

4.4.3 Appropriate Level of Review — Preliminary Assessment

The PA is intended to give the ordering agency enough information to make a confident decision on whether to proceed with the ordering process, but is not expected to reflect a complete understanding of agency- and site-specific requirements. The PA is a vehicle for establishing the potential viability of an EPC project at the facility, for reaching general agreement on the scope of a feasible project, and for deciding whether to authorize the contractor to proceed with the IGA.

The PA includes general ECM descriptions and preliminary estimates of prices and savings based on assumptions, broad guidance, and engineering calculations, but no system design or engineering will have been done, and no subcontractor quotes will have been obtained. Prices in the PA phase are estimates based on the contractor's own benchmarks, cost estimating relationships, and prices the contractor and its subcontractors have charged for previous work. Review of pricing should be commensurate with the preliminary nature of those price estimates and should correspond to the overall goal at this stage of reaching general agreements about the scope and shape of the project.

The ordering agency's price review of the PA documents should not seek a level of precision greater than the estimated prices provided during the PA phase. A detailed review would not be accurate nor cost effective. However, the ordering agency must ensure that preliminary prices are realistic in order to shape the scope of the project to meet the government's needs as completely as possible. If pricing is unrealistically high, ECMs that the agency needs may not appear to be feasible. If pricing is unrealistically low, the agency may be disappointed later to find that high-priority ECMs must be dropped to make the project pay from savings within the contract term. It is also important at this stage to have a basic understanding of what performance period services will be performed by the contractor and that those services are included in the PA. This is important as performance period services can affect the savings available to pay for ECMs and may impact the quantity and size of ECMs installed.

After completing review of estimated pricing at the PA stage, the acquisition team should submit written comments to the contractor (concerning both technical and pricing review) and require written replies. Written documentation can help avoid misunderstandings later during project development.

4.4.4 Appropriate Level of Review — Proposal

The proposal is based on the results of the IGA and includes the pricing, terms, and conditions that will be incorporated into the contract that obligates the government to make payments over a period of years, so it is critical to ensure that the prices proposed for ECMs and performance-period services are fair and reasonable. The proposal should include backup information supporting the proposed pricing. The acquisition team will be able to use this information in addition to other comparative prices to evaluate price reasonableness.

The Government acquisition proposal review team should request that the contractor provide the level of detail required to make a reasonableness determination using the various price/cost analysis tools described in this document. Any remaining questions should be documented and resolved during negotiations. All information generated during the price reasonableness determination should be documented in the contract file for reference.

4.5 ECM Pricing

4.5.1 Competition

Competition is the FAR's first preference for establishing price reasonableness. Although price competition is not typically applicable at the prime contractor level of an EPC, EPC contractors should vigorously compete the subcontracted portions of the project wherever possible and feasible. Subcontractor quotes and supporting details should be included in the contractor's price proposal. The subcontractor quotes and selection documented in the proposal can also be compared to historical or benchmark data for added confidence in the reasonableness of the selected subcontractor's bid for the proposed scope of work.

4.5.2 Price Analysis — Comparison with previously proposed prices and benchmarks

After competition, the preferred methods of determining price reasonableness are price analysis techniques that compare proposed prices with previously obtained prices for similar goods and services obtained by the government, along with parametric estimating methods using price benchmarks, cost-estimating relationships, or rough yardsticks [FAR 15.404-1 (b)(2)(ii-iii)].

Parametric estimating methods are closely related to and sometimes overlapping with price comparison techniques, and both are well suited for price review for the PA and EPC proposal. Acquisition team members may be able to use price information from past energy projects at their own facility, or pricing or benchmarking information maintained at the agency level. FEMP also has price benchmark data for a limited number of ECMs that can be made available to agencies on request and Lawrence Berkeley National Laboratory's eProject Builder has an ECM Price Benchmarking Tool that uses past DOE ESPC IDIQ task order award data. If existing data can be normalized or adjusted to make valid comparisons possible, these are the most cost-effective ways to establish price reasonableness.

Appendix B describes how price benchmarks are derived from pricing data.

4.5.3 Pricing from Previous Contracts

Not all ECMs lend themselves to the development of pricing benchmarks or rough yardsticks. However, COs/KOs usually have access to pricing from previous contracts for installation or repair of similar equipment that can prove useful. For example, a contractor proposes water systems repairs that will cost $460,000. If repairs to the water system have been made in the past, the acquisition team can compare that pricing with

the offered price of $461,494, which includes the portion of the survey costs that apply to that work. To determine whether the price is reasonable the team must consider the scope of the proposed project compared to the scope of past projects and normalize prices for regional cost differences and price inflation over time. This may require consultation with experts on the technology being proposed.

4.5.4 Technical Analysis

In addition to other pricing methods, the CO/KO may seek the opinions of individuals with specialized knowledge of the equipment or services being procured, or "technical experts." Technical experts here are understood to mean professional cost estimators or other technical specialists who support the acquisition team. In federal EPCs, technical analysis might be provided by any of the following:

- Site-level engineering staff
- Agency-level experts (e.g., the Army Corps of Engineers, Naval Facilities Engineering Support Center, GSA's Energy Division, etc.)
- FEMP EPC team members
- Independent experts with particular technologies (e.g., distributed energy, wind, solar, combined heat and power) from DOE National Laboratories or contractors
- Professional cost estimators

It generally will be most cost-effective for the technical specialists who are already supporting the acquisition team to review the information in the proposal and provide opinions on the reasonableness of the proposed costs as well as the technical merit of the design. These technical experts may use their own pricing benchmarks and rough yardsticks to support a CO/KO's determination of what is a fair price for a project of the requested size.

In some cases, the site may require a professional cost estimator to develop an independent estimate of project costs without reference to the cost information the contractor provides. This requires the contractor to develop a conceptual design (typically less than 100%) before the contract is awarded. The cost estimator should submit a written opinion as to whether the proposed ECM cost is fair and reasonable. The use of technical experts to perform cost analysis is a combination of FAR 15.404-1 paragraphs (e) and (c)(2)(i). Technical experts are of particular importance for determining labor required for a specific ECM or function and the appropriate labor mix required for the installation. Whenever possible, third-party cost estimators should attend the subcontractor site visits so they are getting the same information as the subcontractors and can assess potential installation issues unique to each facility.

4.6 Prices for Performance Period Services

Establishing that price for performance-period services (e.g., O&M, R&R, M&V) are fair and reasonable is similar to determining price reasonableness for ECMs.

Assignment of who conducts performance-period services is negotiable (e.g., the ESCO, agency personnel), and the proposal should reflect the agency's decision as to who will perform these activities. In ESPCs, assignments are shown in the RRP Matrix, which is part of the TO, and TO Schedule 3 which contains proposed pricing for performance period services. These resources may also be used in UESCs if specified by the agency.

The proposal should include supporting information describing the activities to be carried out and the level of effort expected. Prices for performance-period services cover mainly labor hours. Preventive maintenance and R&R prices should also include replacement parts or components in outyears of the performance period. Note that one-time replacement costs planned for outyears of the performance period may have those costs spread out over the performance period; planned replacement costs and how costs are allocated across multiple years as part of performance period expenses should be detailed in the price proposal.

A primary standard for comparison will be the cost of previous O&M and R&R contracts at the site for similar equipment, or agency support organizations may be able to provide prices for similar contracts at other sites. Benchmark prices may also exist for some common maintenance activities.

Technical experts who review ECM designs may also need to review proposed O&M and/or R&R services to determine whether they are necessary and whether their pricing is reasonable for the level of effort proposed. The experts should provide written documentation of their opinions.

FEMP's data on ESPC projects does include average annual costs for O&M, R&R, and M&V as a percentage of guaranteed savings, which may be useful as general rough yardsticks.

M&V is a requirement in federal ESPCs to verify savings at least annually, and there is a wide range of options depending on the site's requirements, the particular ECM, and the perceived level of risk. Proposed prices for M&V can be compared with the price of M&V on similar ECMs at the same or other sites if such information is available. Prices for M&V should reflect the level of effort for the M&V plan (field work, measurements, monitoring equipment, analysis, and reporting). M&V is not required for UESCs; however, prices may be included to support performance assurance activities.

Performance-period services are a recurring cost throughout the life of the contract, and the proposals will include inflation factors that escalate the prices from year to year. These inflation factors should be no higher than the long-term inflation rate published each April by NIST in the Annual Supplement to Handbook 135, "Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis."

4.7 Reviewing Financing

Financing is a significant cost element in EPCs. The contractor borrows the money to pay for implementing the ECMs included in the project from the financier, and these

costs are included in the agency's payments over the term of the contract. Financing costs should be shown on financial schedules (eProject Builder TO Schedule 3 and the Summary Schedule).

Project interest costs are normally comprised of an index rate (or interest rate index), plus an added premium (or interest rate premium) that represents the lender's perception of risk and costs to place the loan. The index rate, or interest rate index, is based upon an applicable financial index, such as the U.S. Treasury Security indices (Yield Curve Rates) in the long-term borrowing market.

The requirement for competition in financing has made a big difference in the ESPC program and is recommended for UESC projects as well. Since the third generation of the DOE ESPC IDIQ contract, ESCOs have been required to solicit competitive bids for financing ESPCs as described in Section H.6, Requirements for Competitive Financing Acquisition for Task Orders. The added premiums for project interest rates dropped significantly after 2004 because of recommendations from a FEMP financing-cost-reduction working group to require competition in financing for ESPCs.

While the selection of the financier is the responsibility of the contractor, the competition requirement was intended to bring transparency to the process to ensure that the ESPC represents best value to the government. The process to make sure that ESPC projects receive competitive financing is defined in section H.6 of the DOE ESPC IDIQ contracts.

The contractor prepares an Investor Deal Summary (IDS) using a standardized template and sends it to financiers to solicit offers. The required content of the IDS makes sure that all the offers are based on the same parameters.

The financiers use the Standard Financing Offer (SFO) standardized template, with all its required content, to submit their offers so that received offers are all comparable and the contractor has the information they need to select the best offer.

The templates for the IDS and the SFO are Attachments J-5 and J-6 in the 2023 DOE ESPC IDIQ Generation 4 contract.

Best practices for reviewing financing start with getting assistance through a Federal Project Executive (FPE) supporting FEMP. A financing expert on the FEMP EPC team as well as the PF can review financing offers. Agency or FEMP EPC team reviewers will need to understand the details of the TO financial schedules, the SFO, and all components of the offer.

Reviewers can compare the offer with recent awards, check the calculation of construction-period interest, draw schedule, and other elements of the financing procurement price in the premium, and ensure that all the required documents are in place.

The required IDS, SFO, and a certified selection memorandum from the contractor document the financing details and confirm that the contractor solicited offers from

multiple financiers. There should be no difference between the accepted financing offer to the contractor and their offer to the government.

5 Documenting the Price Analysis

Once the evaluators complete their work of evaluating the various aspects of the contractor's proposal, the CO/KO must document the results in preparation for negotiations. Negotiations provide the CO/KO and contractor the opportunity to reach agreement on a fair and reasonable price.

Using a systematic and process-oriented approach for documenting the pre-negotiation position as well as the results of any negotiations helps tie together the various analysis techniques described in this document and assists the government acquisition team in performing their due diligence in determining price reasonableness. This approach also provides a useable roadmap for evaluation and documentation of the various elements that comprise an EPC price proposal.

The systematic approach for documenting EPC price analysis incorporates the following:

- A sample price negotiation memorandum template for documenting the results of the initial price analysis. This template is included as Appendix A to this document.
- A chart that includes the various price elements, a contractor proposed position, the Government's initial (pre negotiation position) and the Government's post negotiation (revised) position.
- Sample boiler plate introductory and closing remarks for inclusion in the price negotiation memorandum. The boiler plate information is included as italicized text in the template.
- The price negotiation memorandum, which should typically include a background of the acquisition and summary of the project including ECMs included in the project, brief history of the contractor selection process, technical evaluation summary, details of the price and or cost analysis, financial analysis, a pre-negotiation position, any changes as a result of negotiations, and a determination of reasonable pricing and recommendation to award the contract.
- When/if multiple sets of TO Schedules are generated throughout the IGA process and negotiations, it is best practice to keep a running record of primary changes from each set in the price negotiation memorandum (PNM) to avoid confusion at the end of the negotiation process.

6 Conclusions

Determining price reasonableness in EPCs presents challenges to agency staff as these procurement vehicles have features that differ from more conventional contracting methods. Following the methods and process provided in this document along with taking a structured approach to analyzing the contractor's pricing will help determine whether prices proposed are fair and reasonable and the project is sustainable throughout the performance period.

As with most government procurement, the FAR applies, and FAR 15.404-1 provides a detailed description of the techniques to be used to ensure that the prices paid are fair and reasonable. This document provides recommendations for using the proposal analysis techniques of FAR 15.404-1 in EPCs, including how to integrate price reasonableness considerations during review of the PA and final proposals. Though several requirements are specifically for federal ESPCs, they may also be used with UESCs.

EPC contracting is a team effort; engaging the agency technical team, the EPC contractor, and the FEMP team as needed will help to provide a comprehensive analysis. Providing accurate and complete documentation of the results is necessary to memorialize both the analysis and any determinations or changes to the Government's position post negotiation.

Appendix A. Price Negotiation Template for ESPCs

Sample language included in italicized

Instructions should be removed for final price negotiation memorandum (PNM).

1. Summary of Key Documents and Attachments

- List of Attachments: (Agency modify as needed for their specific site)
- Attachment (1) Acquisition Plan (for site/project)
- Attachment (2) Notice of Opportunity (NOO/LOI)
- Attachment (3) Contractor Evaluation report
- Attachment (4) PA report (dated day/month/yr)
- Attachment (5) PA assessment review comments
- Attachment (6) Notice of Intent to Award letter
- Attachment (7) IGA (dated day/month/yr)
- Attachment (8) Government comments and contractor resolution for the IGA
- Attachment (9) Contractor Final Proposal
- Attachment (10) Final Task Order Schedules

2. Acquisition Purpose /Procurement History

Provide a description of the procurement, and a summary of the contractor competition/selection, and significant facts during the PA and IGA phases of the project.

The following is sample language for this section. Tailor as necessary to the specifics of the procurement, including replacing text with brackets [ ] with agency-, site-, and project-specific language as needed.

In order to meet the requirements of the [EPACT, Energy Act of 2020, etc.], the [project site engineering office] has requested that a project is pursued to reduce energy consumption for [project site name, buildings, systems, and location]. This request was based on research of energy consumption at these facilities conducted by [project site engineering office]. The [project site engineering office] and the Acquisition team developed an acquisition plan (Attachment 1) that included various alternatives reviewed for execution of the energy work. An energy savings performance contract (ESPC) executed under the current DOE ESPC IDIQ contract vehicle was determined to be the best alternative to pursue for this work and the Acquisition Plan was signed [date acquisition plan approved]. An NOO (Attachment 2) was sent to all of the contractor holders under the 2023 DOE ESPC IDIQ contract. Additionally, the NOO was advertised on the Governmentwide point of entry, sam.gov. [Insert number of

ESCOs] ESCOs responded expressing interest in the opportunity. [Insert number of ESCOs] ESCOs did not respond and [insert number of ESCOs] responded that they were not interested in the opportunity. [Include any anomalies noted and actions taken if responders took exception to anything in the NOO]. A site data package (SDP) was forwarded to all of the respondents expressing interest in the opportunity on [insert date SDP was sent out if none in addition to the NOO, so note]. An evaluation team reviewed the contractor responses to the SDPs and selected one contractor to pursue the energy project work. The results are documented in the contractor evaluation report (Attachment 3).

[Insert Contractor Name and DOE ESPC IDIQ contract number] was competitively selected to pursue energy conservation work using procedures established under 42 U.S.C. § 8287, et seq.. The government identified a broad range of ECMs with a focus on certain ECMs for the contractor to investigate based on its knowledge of existing conditions and allowed the contractor to fully assess the facilities to identify all potential ECMs.

A kickoff meeting for the PA was held on [insert PA kick off date]. The contractor performed the PA and submitted the PA report on [insert date PA was submitted]. The government acquisition team reviewed the PA and provided written comments to the contractor (Attachment 5). All comments were either resolved by the contractor/government team or tabled for inclusion in the IGA. The contractor was provided a Notice of Intent to Award (NOITA) on [insert date NOITA sent to the contractor] (Attachment 6) with authorization to proceed to the IGA. The contractor completed the IGA on [insert date IGA completed] and submitted the IGA on [insert date of IGA submission] (Attachment 7). The government reviewed the IGA and provided comments (Attachment 8) on [insert date government comments were sent to the contractor]. The contractor/government team adjudicated all comments and requested the contractor submit a final proposal. The contractor submitted the final proposal to the government on [insert date of final proposal, include any revisions to the final proposal and a list of TO schedules submitted by the ESCO and major pricing changes with reasons for changes] (Attachment 9). The proposal technical review team reviewed and analyzed the contractor's final proposal. The team concluded that the proposed measures had the potential for reducing energy consumption and that the estimated cost of construction would be less than the potential savings to be derived. See attachment (10) for details on results of the technical analysis.

(The following is sample language to summarize the technical proposal and significant analysis findings that show project savings guarantees are obtainable, and contractor used prudent methods in determining savings guarantees. This section should be modified as needed by the agency acquisition team)

The technical team analyzed the details of the proposed ECMs to determine if the proposed work was appropriate for the various facilities and if the measures would enhance the efficient operation of those facilities. In addition, the team reviewed the ESCO's projection of energy savings to be derived from the installation of the proposed equipment. The team concluded that the measures proposed were appropriate for the facilities and should result in the guaranteed savings indicated by the ESCO at the facilities. Contractor and government personnel participating in the negotiation: [add all participants, agency and contractor that were party to the negotiation process]

Negotiation Contacts

Name	Position	Organization

3. Evaluation/Analysis and Objective

Provide status of any contractor business systems (e.g., purchasing, estimating, accounting, and compensation) to the extent they affected and were considered in the negotiation.

ESPC regulations under 10 CFR 436 Subpart B provide an exception to the requirement to obtain certified cost or pricing data. This exception needs to be identified in the price negotiation memorandum. The following is sample language to include in the price negotiation memorandum:

10 CFR Part 436 Subpart B provides Methods and Procedures for Energy Savings Performance Contracting. This regulation under 10 CFR 436.33 (c)(2) provides an exception to the requirement to obtain certified cost or pricing data. Therefore, certified cost or pricing was not requested or required for this negotiation. Other than certified cost or pricing was provided by the contractor to determine fair and reasonable pricing. The following is an excerpt from 10 CFR 436.33: (c) Certified cost or pricing data. (1) Energy savings performance contracts under this part are firm fixed price contracts. (2) Pursuant to the authority provided under section 304A(b)(1)(B) of the Federal Property and Administrative Services Act of 1049, the heads of procuring activities shall waive the requirement for submission of certified cost or pricing data.

Provide the most significant facts or considerations controlling the establishment of the pre-negotiation objectives and the negotiated agreement including an explanation of any significant differences between the two positions.

Document to the extent such direction has a significant effect on the action, a discussion and quantification of the impact of direction given by Congress, other

agencies, and higher-level officials (i.e., officials who would not normally exercise authority during the award and review process for the instant contract action).

Provide a summary of the contractor's proposal, any field pricing assistance recommendations, including the reasons for any pertinent variances from them, the government's negotiation objective, and the negotiated position. Where the determination of a fair and reasonable price is based on cost analysis, the summary shall address each major cost element. When determination of a fair and reasonable price is based on price analysis, the summary shall include the source and type of data used to support the determination.

The following tables depict the contractor's proposal government pre-negotiation position and final negotiated amount for each of the major elements of the proposal, organized by task order schedule.

Table 5. Summary Schedule for ESPCs

Description of item evaluated	Contractor proposed amount	Government pre negotiation amount	Final negotiated Amount
Project Interest Rate			
Financing Procurement Price			
Other Financing Expenses (if applicable)			

Table 6. Negotiation Amounts by ECM for ESPCs (Schedule 2a)[1]

Description of item evaluated	Contractor proposed amount	Government pre negotiation amount	Final negotiated Amount
Project Development Price (Technical Energy Audit, i.e., Investment Grade Audit (IGA) and Project Proposal)			
ECM 1 Implementation price (cost of goods, project implementation delivery charge)			
ECM 2 Implementation price (cost of goods, project implementation delivery charge)			
ECM 3 Implementation price (cost of goods, project			

Description of item evaluated	Contractor proposed amount	Government pre negotiation amount	Final negotiated Amount
implementation delivery charge)			
Total Project Implementation Price			

[1] Expand the table as needed to include all ECMs provided in the contractor's proposal.

Table 7. Negotiation Amounts for ESPC Project Implementation (Schedule 2b)

Description of item evaluated	Contractor proposed amount	Government pre negotiation amount	Final negotiated Amount
Design			
Project Management			
Performance and Payment Bonds			
Commissioning and Training			
Measurement and Verification			
Overhead Costs (as a percent of Cost of Goods and Services)			
Implementation period profit (as a percent of Cost of Goods and Services)			
Total Project Delivery Implementation Charge			

Table 8. Negotiation Amounts for ESPC Performance Period Services (Schedule 3)

Description of item evaluated	Contractor proposed amount	Government pre negotiation amount	Final negotiated Amount
Total Debt Service			
Performance Period Expenses			
Management/Administration Costs			
Operation Costs			
Maintenance Costs			
Repair and Replacement Costs			
Performance Assurance Costs			
Mark-up (Overhead and Profit)			
Total Project Payments			

The evaluator should assess each of the above elements for price reasonableness. The various techniques discussed in this price evaluation guide should be used as appropriate to determine price reasonableness for each element. The following descriptions of the elements may be helpful when performing the price evaluation.

Summary Schedule

Project Interest Rate (Index Rate and Added Premium): Contractors should provide the IDS provided to the financiers with the final proposal that includes the SFOs and results of any competition the contractor held with potential financiers. This should also include an analysis of the contractor's competition and justification for the chosen financier. The project interest rate includes the index rate be based on the current treasury rates with a maturity equal to the post-acceptance performance period term and a premium as basis points above the treasury rate (100 basis points equals 1% of finance charges). The index rate fluctuates with the long-term borrowing market; the added premium is competed. FEMP can provide an analysis of recently awarded projects to see how closely the project premium aligns with the awarded project.

Financing Procurement Price: Finance procurement costs (e.g., capitalized construction interest) are pass through costs to the contractor and should not include any applied contractor overhead or profit. Implementation period interest is the accrued interest required to finance the construction/implementation of the ECMs prior to project acceptance. Pay particular attention to ECM construction period length and ensure this is aligned with scope of work provided with the proposal. The project team should be in agreement with the implementation period length and the financing procurement price should reflect this period.

Schedule 2a Implementation Price by ECM

Project Development Price: The project development price is a separately priced item and encompasses the development costs for performing the technical energy audit (a.k.a. IGA) and final proposal for award. The IGA often includes some amount of costs for preliminary design and evaluators should make sure any design costs required as part of the IGA are not also included in the final project design (included in project implementation delivery charge). The contractor either performs the IGA in house or contracts to a third party. If performed in house, pay particular attention to direct labor hours attributable to IGA costs by senior/front office staff. Ensure these labor hours are not also included in the overhead costs. A proposed cost for the IGA is provided with the PA. Make sure any cost variance for the delivered IGA that is different from the proposal submitted with the PA is justified and documented.

Project Development: Costs include any contractor costs associated with the effort required to develop the ECMs during the IGA phase of the project. Pay particular attention to number, length of trips associated with the effort. Also, ensure the labor mix and associated hours are appropriate for the effort. ***salary.com*** and the GSA professional schedule are good resources to validate contractor salaries for the various labor categories.

ECM Implementation Price: The evaluation team should separately evaluate each of the ECMs for price reasonableness. For each ECM, the ECM Implementation Price is comprised of the Cost of Goods and Services (Base Construction), Project Implementation Delivery Charge and Applied Incentives. Contractors normally subcontract most if not all of the design and installation of ECMs. **Cost of Goods and Services:** Contractors should be competing ECM work whenever possible and providing the competition results as part of their price proposal. Review any subcontractor quotes and pay particular attention to areas where there is a large price discrepancy between subcontractors. The Costs of Goods and Services is comprised by subcontractor costs, contractor self-performed work, and direct purchases by the contractor. (Note that these components are summarized at the project level in Schedule 2b). Direct purchases of equipment, materials and supplies, such as any large equipment (CHP, boilers, chiller plants etc.) are normally purchased by contractors themselves. Similarly, the contractor may self-perform specific scopes of work. Look for price competition for these items and ensure the quotes are for the equipment being installed in conjunction with your project including size and quantity of each. Resources including RS Means estimating guides and GSA schedules are good sources for establishing ballpark prices for these items. Prices paid for similar items by your or other agencies may also be helpful in obtaining a reasonableness determination for these items. If these are used as a benchmark, evaluators should ensure the prices were previously determined to be reasonable and the scope of work is comparable. **Project Implementation Delivery Charges** are applied to each ECM in Schedule 2a; Project Implementation Delivery Charges for the project are broken out by components in Schedule 2b. **Applied Incentives** are subtracted from the Cost of Goods and Services plus Project Implementation Delivery Charge, reducing the ECM Implementation Price.

Schedule 2b Project Implementation Pricing Worksheet (required for the DOE ESPC IDIQ Contract)

Schedule 2b provides a summary of implementation costs for the project as a whole and reflects the summary of categories (Cost of Goods and Services, Project Implementation Delivery Charge, Applied Incentives) in Schedule 2a. Cost of Goods and Services in Schedule 2b is the summation of all ECM Cost of Goods shown in Schedule 2a. Similarly, the Project Implementation Delivery Charge is itemized by categories described below to arrive at the Project Implementation Delivery Percentage and corresponding total Project Implementation Delivery Charge which is the summation of all ECM Project Implementation Delivery Charges shown in Schedule 2a.

The categories below are components of the Project Implementation Delivery Charge for the entire project: Design Costs; Project Management Costs; Performance and Payment Bonds; Commissioning and Training; M&V Costs; Overhead and Profit. Each of these is calculated as a percentage applied to the Cost of Goods and Services for the entire project.

Design Costs: This cost incorporates costs to complete the final ECM design after TO award, which is over and above the design included in the IGA. Look for the types and

quantities of labor required for the design effort and evaluate whether the effort is appropriate for the various ECMs. Ensure design costs and efforts are appropriately allocated for all ECMs. Review to ensure there is no duplication of effort with proposed ECM implementation or IGA development costs.

Project Management Costs: This includes the contractor's effort to manage the overall ESPC project. Contractors normally perform this function in house; however, the function is occasionally subcontracted. Ensure the labor mix is appropriate for the effort and the requisite trips and oversight is aligned with the overall ESPC scope. Many ESPCs require dedicated site managers, safety personnel, etc. Ensure the contractor has accounted for this in the proposal. Some contractors often account for all of their labor including front office staff, as a direct cost in their proposals. Ensure these costs are not accounted for elsewhere in the proposal or as part of their overhead costs. Resources that can be used to validate project management labor costs include RS Means and ***salary.com***.

Performance and Payment Bonds: Performance and payment bonds are required for all ESPCs, and the costs are normally established as a percentage of the costs of goods and services. They are a pass-through expense.

Commissioning and Training: Costs under this category should include contractor and subcontractor costs to develop and administer the commissioning plan, including ECM startup and commissioning once ECM installations are complete. Contractors either perform commissioning with in-house staff, or they subcontract the effort out to a third-party, and in either case the work should be performed by a commissioning agent. If done in-house, pay attention to the labor mix and hours required to perform the commissioning effort. This should be aligned with the commissioning approach submitted with the proposal. Costs of any training required to train government personnel in use and maintenance of installed ECMs should also be provided.

M&V Costs: This includes the contractor's effort to establish the post-installation ECM performance and may be done in conjunction with the commissioning effort. These costs should reflect the agreed-upon M&V option, level of effort to verify performance, and development of the post-installation report.

Overhead: Overhead costs are the contractor's indirect costs or fixed expenses of operating the contractor's business and are applied as a percentage to the proposed costs of goods and services (Base Construction). Overhead is a subset of indirect costs and refers to the associated burdens applied to material and labor. Each comprises a separate overhead pool. Other common indirect costs include fringe costs (employee benefits) applied to labor cost, and General and Administrative (G&A) costs to operate the home office or corporate office. Because contractors vary in the methods used to account for costs the accounting of indirect cost including associated bases and pools should be described in the company's disclosure statement. There should be no duplication of costs between direct project costs or labor and the project overhead costs.

Profit: Profit is calculated as a percentage of the contractor's costs of goods and services (Base Construction) for the project. Reviewers should use a structured approach in accordance with FAR 15.404-4. The record of weighted guidelines format provided by DD form 1547 is used for Department of Defense (DOD) projects and may be a useful tool for determining profit by civilian agencies. The form assigns risk-based weighting based on complexity and other project specific factors.

Schedule 3 Performance Period Cash Flow

Total Debt Service Payment: Project principal repayment, any dollar savings retained by the customer and interest charges, minus performance period incentives and other revenue. The total debt service is amortized over the total project performance period.

Management/Administration Costs: The contractor's effort to administer any performance period activities and the contract during the performance period. There should be no duplication of costs between M&V costs and associated data and reporting requirements and management/administration costs.

Performance Period ECM O&M and R&R costs: The contractor effort required to maintain and repair the ECMs once commissioned and accepted. Contractor effort for O&M/R&R is normally agreed to during the IGA phase of the project. Ensure all government stakeholders understand and agree to the effort that will be performed by the contractor and the effort required of the government. The contractor should provide a breakdown of what will be provided on an annual basis, and costs should reflect the proposed level of service. Pay particular attention to the types and quantities of any major equipment repair and any programmed replacements throughout the performance period. Ensure the performance guarantees match the proposed effort during the performance period. It may be helpful to include any major spare parts items or programmed replacement items in the TO award.

Performance Period M&V Costs. The contractor's M&V activities which occur throughout the TO performance period on at least an annual basis. This includes ECM performance verification, reviewing O&M/R&R activities, travel to the site for data collection, and developing the M&V report. Costs should reflect the level of effort and expertise required to perform these activities in accordance with the M&V Plan.

Performance Period Delivery Percentage: Performance period markup will be shown as a percentage and applied to the performance period expenses. This amount reflects the contractor's profit and overhead during the performance period. A structured approach similar to the methods identified for analyzing profit should be used to determine reasonableness of this element.

Total Performance Period Price: The summation of all of the performance period expenses along with the performance period delivery charge.

Total project payments: The sum of the total of the debt service payment and the performance period expenses. This amount reflects the total contract price at the conclusion of the project performance period.

Additional considerations for completing price analysis prior to award include:

Congressional or other higher-level direction: To the extent such direction has a significant effect on the action, a discussion and quantification of the impact of direction given by Congress, other agencies, and higher-level officials.

Field pricing assistance: Whenever field pricing assistance has been obtained, the CO/KO shall forward a copy of the negotiation documentation to the office(s) providing assistance. When appropriate, information on how advisory field support can be made more effective should be provided separately.

Documentation of fair and reasonable pricing: Provide summary results for the various categories provided in Table 5, Table 6, Table 7, and Table 8. Provide a summary of the government's pre-negotiation position and a summary of any pre-negotiation objectives.

Provide a summary of results of the negotiation. Summarize and provide a brief explanation of any changes to the government's pre-negotiation position as a result of contractor negotiations.

4. Recommendation for Award

The following is sample language for recommending the ESPC task order for award. Tailor as needed in accordance with agency specific requirements.

In accordance with the criteria for award of ESPC, the cost of the project must not exceed the savings generated by the installation of the ECMs identified for the project. A graduated payment structure is planned so that each payment will be less than the savings projected for the payment period. The project, therefore, meets the criteria for award. The pricing has been determined to be fair and reasonable based on the data presented by the ESCO, as well as based on competition among subcontractors and detailed price breakout where competition was not available. It is recommended to proceed with award of the ESPC project.

Appendix B. Price Negotiation Template for UESCs

Sample language included in italicized

Instructions should be removed for final price negotiation memorandum (PNM).

1. Summary of Key Documents and Attachments

- List of Attachments: (Agency modify as needed for their specific site)
- Attachment (1) Acquisition Plan (for site/project)
- Attachment (2) Letter of Interest (LOI), Sources Sought Notification (SSN)
- Attachment (3) Contractor Evaluation report (if required)
- Attachment (4) PA report (dated day/month/yr)
- Attachment (5) Estimate of IGA/Design Costs
- Attachment (6) Authorization to enter into Design/IGA
- Attachment (7) IGA (dated day/month/yr)
- Attachment (8) Government comments and contractor resolution for the IGA
- Attachment (9) Contractor Final Proposal
- Attachment (10) Final Task Order Schedules

2. Acquisition Purpose /Procurement History

Provide a description of the procurement, and a summary of the contractor competition/selection, and significant facts during the PA and IGA phases of the project.

The following is sample language for this section. Tailor as necessary to the specifics of the procurement, including replacing text with brackets [ ] with agency-, site-, and project-specific language as needed. The text uses a GSA contract as the vehicle for this procurement. Adjust as necessary for the specific contracting mechanism used for the procurement.

In order to meet the requirements of the [EPACT, Energy Act of 2020, etc.], the [project site engineering office] has requested that a project is pursued to reduce energy consumption for [project site name, buildings, systems, and location]. This request was based on research of energy consumption at these facilities conducted by [project site engineering office]. The [project site engineering office] and the Acquisition team developed an acquisition plan (Attachment 1) that included various alternatives reviewed for execution of the energy work. The [project site engineering office] presented its findings to the [project site engineering office manager] who concurred with the decision to pursue a UESC and the Acquisition Plan was signed (date

acquisition plan approved). A request to pursue a UESC was forwarded to [approving manager's office] and subsequently approved by [approving manager].

The [Utility name] is a regulated utility that provides [electricity / natural gas] service(s) to [project site name]. [Agency name] has established a utility service(s) agreement with [Utility name] agreement under GSA AWC No. [GS-XXX-XX-XXX-XXXX] (AWC). Exhibit "C", EMSA under Contract No. [GS-XXX-XX-XXX-XXXX] is provided as a vehicle (TO) by which to contract with the Utility to install energy saving equipment if the potential for savings is demonstrated to be greater than the cost of implementing those measures. [Utility name] has agreed to provide initial studies, referred to as [PAs / Feasibility Studies], to the Government at [no cost (or agreed cost)]. The [Utility name] offers to provide this service to the Government in order to reduce the [electrical / natural gas / water] service demand (DSM) on the Utility. The Government issued a letter to the Utility on [date] requesting a [no-cost PA] offered under the terms and conditions of the letter (Attachment 3). The Government identified a broad range of ECMs with a focus on certain ECMs for the Utility company's investigation based on its knowledge of existing conditions and allowed the Utility to fully assess the facilities to identify all potential ECMs.

[Utility name] began its investigation of facilities, sharing information with the Government as the audit developed. After several iterations of the PA, the Utility submitted its final revision of the PA (Attachment 4). The Government team consisting of [names of offices of involved agency staff, engineer and CO/KO] reviewed the proposed ECMs and associated LCCA. In addition to the technical review of ECMs and proposed equipment, the Government also reviewed the breakout of the estimated costs for design of the project, should the Government elect to go forward. The projection of cost for design was [cost in dollars]. (Attachment 5).

A kickoff meeting for the PA was held on [insert PA kick off date]. The contractor performed the PA and submitted the PA report on [insert date PA was submitted]. The government acquisition team reviewed the PA and provided written comments to the contractor (Attachment 5). All comments were either resolved by the contractor/government team or tabled for inclusion in the IGA. The contractor was provided an Authorization to enter into Design phase on (insert date Authorization sent to the contractor) (Attachment 6) with authorization to proceed to the IGA. The contractor completed the IGA on (insert date IGA completed) and submitted the IGA on [insert date of IGA submission] (Attachment 7). The government reviewed the IGA and provided comments (Attachment 8) on [insert date government comments were sent to the contractor]. The contractor/government team adjudicated all comments and requested the contractor submit a final proposal. The contractor submitted the finial proposal to the government on [insert date of final proposal, include any revisions to the final proposal and a list of TO schedules submitted by the ESCO and major pricing

changes with reasons for changes] (Attachment 9). The proposal technical review team reviewed and analyzed the contractor's final proposal. The team concluded that the proposed measures had the potential for reducing energy consumption and that the estimated cost of construction would be less than the potential savings to be derived. See attachment (10) for details on results of the technical analysis.

(The following is sample language to summarize the technical proposal and significant analysis findings that show project savings guarantees are obtainable, and the contractor used prudent methods in determining savings guarantees. This section should be modified as needed by the agency acquisition team)

The technical team analyzed the details of the proposed ECMs to determine if the proposed work was appropriate for the various facilities and if the measures would enhance the efficient operation of those facilities. In addition, the team reviewed the Utility's projection of energy savings to be derived from the installation of the proposed equipment. The team concluded that the measures proposed were appropriate for the facilities and should result in the reduction of [energy, water] indicated by the Utility at the facilities. Contractor and government personnel participating in the negotiation: [add all participants, agency and contractor that were party to the negotiation process]

Negotiation Contacts

Name	Position	Organization

3. Evaluation/Analysis and Objective

Provide status of any contractor business systems (e.g., purchasing, estimating, accounting, and compensation) to the extent they affected and were considered in the negotiation.

Provide the most significant facts or considerations controlling the establishment of the pre-negotiation objectives and the negotiated agreement including an explanation of any significant differences between the two positions.

Document to the extent such direction has a significant effect on the action, a discussion and quantification of the impact of direction given by Congress, other agencies, and higher-level officials (i.e., officials who would not normally exercise authority during the award and review process for the instant contract action).

Provide a summary of the contractor's proposal, any field pricing assistance recommendations, including the reasons for any pertinent variances from them, the government's negotiation objective, and the negotiated position. Where the

determination of a fair and reasonable price is based on cost analysis, the summary shall address each major cost element. When determination of a fair and reasonable price is based on price analysis, the summary shall include the source and type of data used to support the determination. The following is sample language to provide level of detail and background information of performed analysis.

The Utility company submitted a 65% design package for Government review on [insert submission date of design package]; it was insufficient for evaluation, lacking essential information and breakout of pricing. The Utility was advised that the submittal was rejected. The Government advised the Utility to provide additional details in the 100% design package.

The 100% proposal for implementation of ECMs was delivered on [insert date of 100% proposal] (Attachment 10). The technical package was routed for comments to the [insert names, titles, offices and office location of Government personnel, e.g., Fire Inspector, Environmental, Safety, Security, Communications, Utilities office, Building Managers, Engineering, (others)].

The contracting officer and the project manager initially reviewed the LCCA form contained in the 100% proposal to determine the project cost was less than the calculated energy savings. Data submitted indicated a project implementation price of [insert cost $] with a financed term of [insert # of years] at a project finance rate of [insert project finance rate %]. The Year 1 savings were projected to be [insert calculated year 1 savings $] and total project savings projected to be [insert calculated total project savings for all performance years]. Payments were structured to be less than the savings. The total savings for the contract term exceed the total payments for the contract and therefore the project appears to be viable. The agency team compiled comments and questions during the proposal review for Utility response prior to the Government entering negotiations with the Utility. The Utility provided a spreadsheet indicating competitive proposals had been received; information to support the competitive procedures and a detailed breakdown of pricing for proposals received without competition were requested. The Government's questions were forwarded to the Utility and its ESCO on [insert date Government questions were provided to the Utility] (Attachment 11).

In response to the Government's comments, the Utility submitted additional data on [insert date that additional data were received] (Attachment 12). As part of this proposal, the Utility provided evidence of competitive pricing among the implementing subcontractors (Attachment 13) as well as a detailed breakout of pricing for work to be performed by contractors on a non-competitive basis (Attachment 14).

The following tables depict the contractor's proposal government pre-negotiation position and final negotiated amount for each of the major elements of the proposal, organized by task order schedule.

Table 9. Summary Schedule for UESCs

Description of item evaluated	Contractor proposed amount	Government pre negotiation amount	Final negotiated Amount
Project Interest Rate			
Financing Procurement Price			
Other Financing Expenses (if applicable)			

Table 10. Negotiation Amounts by ECM for UESCs (Schedule 2a)[1]

Description of item evaluated	Contractor proposed amount	Government pre negotiation amount	Final negotiated Amount
Project Development Price (Technical Energy Audit, i.e., Investment Grade Audit (IGA) and Project Proposal)			
ECM 1 Implementation price (implementation cost (direct), mark-up (OH&P))			
ECM 2 Implementation price (implementation cost (direct), mark-up (OH&P))			
ECM 3 Implementation price (implementation cost (direct), mark-up (OH&P))			
Total Project Implementation Price			

[1] Expand the table as needed to include all ECMs provided in the contractor's proposal.

Table 11. Negotiation Amounts for UESC Performance Period Services (Schedule 3)

Description of item evaluated	Contractor proposed amount	Government pre negotiation amount	Final negotiated Amount
Total Debt Service			
Performance Period Expenses			
Management/Administration Costs			
Operation Costs			
Maintenance Costs			
Repair and Replacement Costs			
Performance Assurance Costs			
Mark-up (Overhead and Profit)			
Total Project Payments			

The evaluator should assess each of the above elements for price reasonableness. The various techniques discussed in this price evaluation guide should be used as appropriate to determine price reasonableness for each element. The following descriptions of the elements may be helpful when performing the price evaluation.

Summary Schedule

Project Interest Rate (Index Rate and Added Premium): Contractors should provide the IDS provided to the financiers with the final proposal that includes the SFOs and results of any competition the contractor held with potential financiers. This should also include an analysis of the contractor's competition and justification for the chosen financier. The project interest rate includes the index rate be based on the current treasury rates with a maturity equal to the post-acceptance performance period term and a premium as basis points above the treasury rate (100 basis points equals 1% of finance charges). The index rate fluctuates with the long-term borrowing market; the added premium is competed. FEMP can provide an analysis of recently awarded projects to see how closely the project premium aligns with the awarded project.

Financing Procurement Price: Finance procurement costs (e.g., capitalized construction interest) are pass through costs to the contractor and should not include any applied contractor overhead or profit. Implementation period interest is the accrued interest required to finance the construction/implementation of the ECMs prior to project acceptance. Pay particular attention to ECM construction period length and ensure this is aligned with scope of work provided with the proposal. The project team should be in agreement with the implementation period length and the financing procurement price should reflect this period.

Schedule 2a Implementation Price by ECM

Project Development Price: The project development price is a separately priced item and encompasses the development costs for performing the technical energy audit (a.k.a. IGA) and final proposal for award. The IGA often includes some amount of costs for preliminary design and evaluators should make sure any design costs required as part of the IGA are not also included in the final project design (included in project implementation delivery charge). The contractor either performs the IGA in house or contracts to a third party. If performed in house, pay particular attention to direct labor hours attributable to IGA costs by senior/front office staff. Ensure these labor hours are not also included in the overhead costs. A proposed cost for the IGA is provided with the PA. Make sure any cost variance for the delivered IGA that is different from the proposal submitted with the PA is justified and documented.

Project development: costs include any contractor costs associated with the effort required to develop the ECMs during the IGA phase of the project. Pay particular attention to number, length of trips associated with the effort. Also, ensure the labor mix and associated hours are appropriate for the effort. ***salary.com*** and the GSA professional schedule are good resources to validate contractor salaries for the various labor categories.

ECM Implementation Price: The evaluation team should separately evaluate each of the ECMs for price reasonableness. For each ECM, the ECM Implementation Price is comprised of the Cost of Goods and Services (Base Construction), Project Implementation Delivery Charge and Applied Incentives. Contractors normally subcontract most if not all of the design and installation of ECMs. **Implementation Cost (Direct):** Contractors should be competing ECM work whenever possible and providing the competition results as part of their price proposal. Review any subcontractor quotes and pay particular attention to areas where there is a large price discrepancy between subcontractors. The Costs of Goods and Services is comprised by subcontractor costs, contractor self-performed work, and direct purchases by the contractor. Direct purchases of equipment, materials and supplies, such as any large equipment (CHP, boilers, chiller plants etc.) are normally purchased by contractors themselves. Similarly, the contractor may self-perform specific scopes of work. Look for price competition for these items and ensure the quotes are for the equipment being installed in conjunction with your project including size and quantity of each. Resources including RS Means estimating guides and GSA schedules are good sources for establishing ballpark prices for these items. Prices paid for similar items by your or other agencies may also be helpful in obtaining a reasonableness determination for these items. If these are used as a benchmark, evaluators should ensure the prices were previously determined to be reasonable and the scope of work is comparable. **Mark-Up (Overhead & Profit)** is applied to each ECM in Schedule 2a; this is the overhead and profit for implementation expenses. Note: it is important to understand Utility application of profit and overhead to direct costs particularly when they employ an ESCO to implement the EPC. Due to utility shifting performance to the ESCO, utility profit should be less than if self-implementing. **Applied Incentives** are subtracted from the Cost of Goods and Services plus Project Implementation Delivery Charge, reducing the ECM Implementation Price.

Schedule 3 Performance Period Cash Flow

Total Debt Service Payment: Project principal repayment, any dollar savings retained by the customer and interest charges, minus performance period incentives and other revenue. The total debt service is amortized over the total project performance period.

Management/Administration Costs: The contractor's effort to administer any performance period activities and the contract during the performance period. There should be no duplication of costs between M&V costs and associated data and reporting requirements and management/administration costs.

Performance Period ECM O&M and R&R costs: The contractor effort required to maintain and repair the ECMs once commissioned and accepted. Contractor effort for O&M/R&R is normally agreed to during the IGA phase of the project. Ensure all government stakeholders understand and agree to the effort that will be performed by the contractor and the effort required of the government. The contractor should provide a breakdown of what will be provided on an annual basis, and costs should reflect the proposed level of service. Pay particular attention to the types and quantities of any major equipment repair and any programmed replacements throughout the performance

period. Ensure the performance guarantees match the proposed effort during the performance period. It may be helpful to include any major spare parts items or programmed replacement items in the TO.

Performance Assurance Costs. The contractor's performance assurance activities during performance period. This includes ECM performance verification, reviewing O&M/R&R activities, travel to the site for data collection, and developing the performance assurance report. Costs should reflect the level of effort and expertise required to perform these activities in accordance with the Performance Assurance Plan.

Mark-Up (Overhead & Profit) Costs: Performance period services markup will be shown as a percentage and applied to the performance period expenses. This amount reflects the contractor's profit and overhead during the performance period. A structured approach similar to the methods identified for analyzing profit should be used to determine reasonableness of this element.

Total Performance Period Price: This amount is the summation of all of the performance period expenses along with the performance period delivery charge.

Total project payments: This is the sum of the total of the debt service payment and the performance period expenses. This amount reflects the total contract price at the conclusion of the project performance period.

Additional considerations for completing price analysis prior to award include:

Congressional or other higher-level direction: To the extent such direction has a significant effect on the action, a discussion and quantification of the impact of direction given by Congress, other agencies, and higher-level officials.

Field pricing assistance: Whenever field pricing assistance has been obtained, the CO/KO shall forward a copy of the negotiation documentation to the office(s) providing assistance. When appropriate, information on how advisory field support can be made more effective should be provided separately.

Documentation of fair and reasonable pricing: Provide summary results for the various categories provided in Table 9, Table 10, and Table 11. Provide a summary of the government's pre-negotiation position and a summary of any pre-negotiation objectives.

Provide a summary of results of the negotiation. Summarize and provide a brief explanation of any changes to the government's pre-negotiation position as a result of contractor negotiations.

4. Recommendation for Award

The following is sample language for recommending the UESC task order for award. Tailor as needed in accordance with agency specific requirements.

In accordance with the criteria for award of a Utility Energy Services Contract (UESC), the energy cost savings of the project covers the cost of installation of the ECMs identified for the project, as required for annual scoring. A graduated payment structure is planned so that each payment will be less than the savings projected for the payment period. The project, therefore, meets the criteria for award. The pricing has been determined to be fair and reasonable based on the data presented by [Utility Company], based on competition among subcontractors and detailed price breakout where competition was not available. It is recommended to proceed with award of the UESC project.

Appendix C. Benchmarks: A More Rigorous Approach to Price Analysis

Price benchmarks are cost estimating relationships that consider the price of a good or service to be a function of one or more dependent variables related to the size, level of effort, or some other measurable characteristic of the good or service in question. For example, if constructing an office space, a price benchmark expressed in dollars per square foot may not be sufficiently accurate for a contractor to provide a bid based on that estimate, it would be useful for a potential building owner to determine if a bid received is comparable to the price of other commercial office space. For ESPCs, if using past pricing for systems, equipment, or components similar to those in a proposed project, there are several considerations to best leverage available information. For ESPC projects, price benchmarks are useful in reviewing price proposals, to reduce or eliminate from scrutiny prices that are in the expected range and focus attention on other prices.

Several methods to leverage available price data include relative size of prior work, location of work completed, and when the work was completed. Each of these can be considered to potentially include in a price benchmark for proposed ECMs.

eProject Builder Price Benchmarking

eProject Builder has developed an ECM Price Benchmarking Tool, leveraging data on recent awarded ECMs under the DOE ESPC IDIQ contract. The tool allows users to compare the price of a proposed ECM with the prices of similar past ECMs, comparing ECM implementation cost and energy savings by DOE Technology Category. There are several steps used to normalize past pricing data, including accounting for past project location and year of award. With the eProject Builder ECM Price Benchmarking Tool, past ECM prices are converted to current dollars and adjusted for regional price differences so that past ECM prices can be compared to proposed ECMs for current projects under evaluation, accounting for project location.

ECM price benchmarking is currently available for five ECM categories: boiler plant improvements, building automation systems/energy management control systems, chiller plant improvements, lighting improvements and water/wastewater conservation systems. Users enter the project award year, ECM type, the proposed ECM implementation price and the annual utility savings (e.g., kilowatt-hour, million British thermal units) depending on ECM type selected, and the project state location. The tool generates a table and chart of the ECM implementation price as a function of annual energy savings, showing the expected ECM price, based on the above factors and the proposed or offered price entered by the user, along with the predicted upper and lower limit.

Developing a Price Benchmark on Past Measure Pricing

For instances where a proposed ECM is not included in the eProject Builder ECM Price Benchmarking Tool and past ECM costs and savings details are available, there are other methods that can be used to develop a price benchmark.

If costs and savings are available, then, similar to the eProject Builder ECM Price Benchmarking Tool analysis, the offered or known price of past ECMs and the associated units of energy or water savings can be normalized to account for the year of project award and location. In order to compare the prices, we must correct for general price inflation and differences in pricing that are due to the local economy. One way of doing this is to use a resource such as RS Means Construction Cost Index (CCI). Published annually, the CCI contains historical data on construction costs in 316 cities in the United States and Canada. For example, for Atlanta in 1999 the CCI is 102.9. These values are provided in Table 12. The energy or water unit savings can be used directly and do not need to be adjusted, and the adjusted ECM implementation price can be charted as a function of annual unit energy or water savings.

If savings are not known, then an alternate method can be used, which assumes that the price benchmark has a linear relationship between cost and some measure of the item's size. For example, for a chiller replacement project, the variable would likely be total chiller capacity, and one might assume a relationship of the form

$$C = a + bx \qquad \text{(Eq. 1)}$$

where C is total cost, x is chiller capacity, b is the cost per unit capacity, and a is a constant.

As a simple example, consider Table 12, which provides information on three (fictitious) chiller projects. The first four columns contain the location of the project, the date the equipment was installed, the total capacity replaced, and the total contract cost. We will assume that the same types of chillers were installed in each case, and the scope of each project is roughly the same, involving only the replacement of one or more chillers, and associated auxiliary equipment.

Table 12. Chiller replacement projects

Location	Date	Capacity (tons)	Cost	CCI	Adjusted price
Atlanta, GA	9/30/99	1950	$1,271,078	102.90	$1,854,118
Los Angeles, CA	1/23/01	1125	$724,032	132.40	$820,825
Detroit, MI	9/30/03	1000	$682,169	138.70	$738,237

As with the cost and savings method described above, we must correct for general price inflation and differences in pricing that are due to location in order to compare prices.

Suppose we wish to compare these prices to a proposal received for a 1500-ton chiller replacement ECM in Minneapolis. The current CCI for Minneapolis is 150.1. So, to correct each of the prices in Table 12 to Minneapolis in 2004, we multiply each price by 150.1 and divide by the project's CCI. So, for example, the cost of the Atlanta project is multiplied by 150.1/102.9 to approximate what it would cost in Minneapolis in 2004. The last column of Table 12 contains the adjusted price for each project.

Now that we have adjusted all of the prices to the current date and the location of the ESPC project, we can correlate price to chiller capacity. Linear regression of the data gives

$$C = -499{,}952 + 1203x \qquad \text{(Eq.2)}$$

where C is cost, and x is total chiller capacity. Then based on the three past contracts, a reasonable estimate of the price to replace 1500 tons of chiller capacity in Minneapolis in 2004 is $1,304,548.

It is important not to assign any physical significance to the terms of the price benchmark equation. For example, the fact that the constant term is negative does not mean that there is a negative setup cost for each project; nor, in general, does the 1203 represent an accurate cost per ton. The equation simply represents the best fit to the data available.

For some ECMs, pricing data may be available over a wide range of ECM sizes. This could be the case for chiller replacements, since such projects could range from the replacement of a single small chiller, with say 15 tons of capacity, up to large projects involving thousands of tons of capacity. In these cases, it is more convenient to assume a cost model of the form:

$$C = e^{\varepsilon} a x^{b} \qquad \text{(Eq.3)}$$

where C is cost, a is cost per unit, and x is the size. The variable b is included to account for changes in cost per unit over different size ranges. If the cost per unit is constant over all sizes, then b = 1. If cost per unit increases with size, then b will be greater than 1. If cost per unit size decreases with size, then b will be less than 1.

The term e$\sum$ accounts for variations in pricing, which are assumed to be random. Here e is the base of natural logarithms, and $\sum$ is a normally distributed random variable, assumed to have a mean of zero. Now suppose the standard deviation of this random variable is small, on the order of 0.10. According to standard probability theory, about 95% of the values of $\sum$ will be within two standard deviations of the mean; in other words, 95% of the values will lie between -0.20 and 0.20. In Eq. 3 above the variation in pricing is the exponential of these values, so 95% of the variations will lie between 0.82 and 1.22. This means that prices vary by ±20% from the benchmark, approximately.

Taking the natural logarithm of both sides of Eq.3 gives:

$$\ln C = \ln a + b \ln x + \varepsilon \qquad \text{(Eq.4)}$$

which is standard form for a linear equation with random errors. Thus in order to develop a pricing benchmark, we correlate the logarithm of cost with the logarithm of size using standard linear regression techniques. Of course, past pricing must be adjusted as above to account for inflation and differences in pricing in different cities across the country.

The usefulness and accuracy of pricing benchmarks depends on the quantity of data available to develop them. Even if an ECM can be categorized by a readily identifiable size variable, it may be that prices depend heavily on local conditions encountered at the site. In such cases, the variation in pricing may make it difficult to develop useful benchmarks.

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