FEMP
Federal Energy Management Program

Recognizing and Assigning Risks and Responsibilities Using the Risk, Responsibility, and Performance (RRP) Matrix

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Disclaimer

Authors

The authors of this report are:

Christine Walker, Pacific Northwest National Laboratory (PNNL)

Phil Voss, National Renewable Energy Laboratory (NREL)

Contacts

For questions related to this guidance:

Priya Stiller, Federal Energy Management Program

Priya.Stiller@hq.doe.gov

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List of Acronyms

DOE	U.S. Department of Energy
ECM	energy conservation measure
EERC	energy escalation rate calculator
ESCO	energy services company
ESPC	energy savings performance contract
FEMP	Federal Energy Management Program
FAR	federal acquisition regulation
IDIQ	indefinite delivery, indefinite quantity
M&V	measurement and verification
O&M	operation and maintenance
R&R	repair and replacement
RRP	risk, responsibility & performance (matrix)
TO	task order

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1 Overview of the Risk, Responsibility & Performance Matrix

The Risk, Responsibility, and Performance Matrix (RRP Matrix) is the energy savings performance contract (ESPC) document that focuses on 16 areas of risks and responsibilities in an ESPC project. The RRP Matrix summarizes and documents the contractor (energy service company, i.e., ESCO) and ordering agency's agreements about allocating risks and responsibilities – to the ESCO, to the ordering agency, or shared. Ordering agencies and ESCOs should be mindful, however, that the ESCO remains responsible for achieving energy savings guaranteed under the ESPC, notwithstanding the allocations of risks, responsibilities, and performance.

The RRP Matrix is available on the Federal Energy Management Program (FEMP) Resources for Implementing Federal ESPCs webpage, under Phase 2: Energy Service Company Selection and Preliminary Assessment, Project Risk and Responsibility. The RRP Matrix is required as part of the preliminary assessment and task order proposal for projects awarded under the Department of Energy (DOE) ESPC Indefinite-Delivery, Indefinite Quantity (IDIQ) contract.

What is *Risk?*

In the context of the RRP Matrix, "risk" refers to financial consequences:

— To the ESCO, the risk is that the guarantee will not be met and the ESCO will not be paid to the extent the guaranteed savings are not delivered, with the ordering agency withholding payment.

— To the ordering agency, the risk is that savings it pays for will not be delivered, which violates the federal ESPC statute and regulation.

The RRP Matrix is also useful to understand and document risk, responsibility, and performance allocation in utility energy service contract (UESC) projects.[1]

The purpose of the RRP Matrix is to help agencies:

- understand how key task order contract elements affect costs and savings,
- determine how to tailor the task order to match their own needs and priorities,
- give additional structure to the decision making and negotiations, and
- document their decisions in these areas.

The RRP Matrix is a summary only. The details of agreed upon risk, responsibility and performance allocations are in the task order request for proposal, the M&V Plan, and the ESCO's Project Management Plan (which includes details for energy conservation measure (ECM)[2] training and operations, maintenance, repair and replacement). The RRP Matrix included in the final awarded task order summarizes these agreements.

[1] Terminology used within this document is specific to ESPCs.
[2] As used in this document, ECM includes both energy and water conservation measures.

The government cannot pay for an unmet guarantee, but what exactly is being guaranteed is defined by the ESPC authorities and the terms of the task order as negotiated by the ordering agency and ESCO. A full awareness of the options and costs associated with these risks and responsibilities allows the ordering agency to negotiate a task order that best suits its own needs, priorities, and resources. In developing an RRP Matrix, it is important to distinguish between statutorily assigned responsibilities and responsibility for performance of certain tasks. For example, an ordering agency may agree to conduct certain maintenance activities, but the ESPC statute assigns to the ESCO ultimate responsibility for maintenance and repair services for any energy related equipment. Moreover, the ESCO bears the ultimate performance risk of meeting guaranteed energy and/or water cost savings.

Guarantees required in federal ESPCs are:

- A specified level of energy and/or water cost savings for the entire project, and
- Specified equipment performance and standards of service (e.g., temperature setpoints, lighting levels, etc.)

The following is a discussion of the 16 areas of risk, responsibility and performance in the RRP Matrix and some of the implications of various options. For reference, the RRP Matrix is shown on pages 12 through 13.

Table 1. Three Categories and Sixteen Areas of Risk, Responsibility and Performance Covered in the RRP Matrix

Financial	Operational	Performance
• Interest Rates • Energy/Water Prices and Escalation Rates • Construction/Project Implementation Costs • Hazardous Materials • M&V Confidence • Energy (or Water) Related Cost Savings • Delays • Major changes in facilities	• Operating hours • Loads • Weather • User participation	• Equipment Performance • Operations • Preventive Maintenance • Equipment Repair and Replacement

2 Financial Risks, Responsibilities, and Performance

2.1 Interest Rates

Interest rates have a significant impact on the project cashflow, term of the task order contract and total task order contract value. The ESCO and ordering agency have limited control over the prevailing interest rates. However, several factors can affect the interest rate premiums, including the ESCO's credit strength and track record, and the ordering agency's history of on-time payments and timely project acceptance. Proposed approaches for interest rates in the RRP Matrix should include how the project interest rate will be determined, and when and for how long the project interest rate will be locked prior to award. The ordering agency will need to review the Investor Deal Summary used for financier competition, the Standard Finance Offer from each financier, and the ESCO's rationale for financier selection documented in the Selection Memorandum from the ESCO.

2.2 Energy/Water Prices and Escalation Rates

Energy and water prices and escalation rates established in the task order impact the dollar value of the cost savings guaranteed by the ESCO. Generally, there is a degree of uncertainty as to the future market energy and water prices over the entire performance period of the project. In general, the ESPC regulations require use of current energy prices for the baseline energy costs in the task order contract and the National Institute of Standards and Technology (NIST) Energy Escalation Rate Calculator (EERC) to estimate energy escalation rates for succeeding years for the term of the contract. Utility rate estimations, including escalation rates, are addressed in FEMP's Guidance on Utility Rate Estimations and Weather Normalization in Performance Contracts.

The EERC incorporates forecasted energy rates from DOE's Energy Information Administration and computes an average annual escalation rate for a specified time period. Using the EERC to estimate future energy prices helps avoid the pitfalls of both over- and under-estimating future prices: over-estimates lead to payments exceeding savings, but under-estimates reduce project scope and lengthen the project term (which also increases interest costs

Energy and water rates and escalations should be clearly defined in the task order and summarized in the RRP Matrix. The ordering agency should ensure that the rates are accurate; to the extent available, use actual rates; capture time-of-use, and energy and demand rates; and document how escalation rates for each utility and energy-/water-related cost savings were determined. This includes using the report function of the EERC tool and including outputs within the proposal.

2.3 Construction/Project Implementation Costs

The ESCO is responsible for determining the construction/project implementation costs and defining a budget as part of the fixed-price contract. The contractor generally assumes

responsibility for cost overruns. If construction/project implementation estimates are significantly greater than originally assumed, the contractor may find that the project or measure is no longer viable and drop it before task order contract award. The ESCO typically solicits multiple subcontractor bids to arrive at firm-fixed prices before submitting the final proposal. Timing and timely ordering agency review and approval may be important to get to task order award, with the ESCO holding project costs for a fixed duration of time. This duration (and date) should be stated within the RRP Matrix, along with how costs will be determined and reviewed.

The RRP Matrix needs to clarify how construction/project implementation costs will be determined and resolved. For example, if unanticipated site conditions are beyond the reasonable steps taken to determine site conditions, this may affect the work and have an associated cost. As part of the task order negotiation, a process for identifying and evaluating such costs is included in the RRP Matrix.

The ordering agency may provide design standards as part of the task order request for proposal, with the ESCO responsible for the design of the ECMs and meeting the ordering agency design standards and performance requirements. It is important to specify the design standards and the design review and approval process, including how changes will be managed. Post-award, ordering agency-initiated changes in scope, design standard, or schedule may have to be negotiated as modifications to the task order contract.

2.4 Hazardous Materials

During project implementation/construction, hazardous materials may exist in areas of the facility that could impact the project. For each ECM proposed, the ESCO is responsible for identifying the presence of known and possible hazardous materials that may impact a measure and the project. The cost for removal of both known and potential hazardous materials are implementation costs and must be included in the life-cycle cost of a potential ECM. The ordering agency and ESCO will negotiate who is responsible for removal of hazardous materials, both known and unknown, impacted by each proposed ECM. Per DOE ESPC IDIQ requirements, if unknown hazardous material is discovered after TO award, and not already documented in the TO and summarized in the RRP Matrix, the ESCO is responsible for the associated costs of removal of the discovered hazardous materials.

During IGA development, the ordering agency should provide information on any known hazardous materials and processes for remediating them. The ESCO should be clear about equipment removal and ECM installation locations and processes and conduct a thorough assessment for hazardous materials that may be encountered.

2.5 M&V Confidence

In considering Measurement & Verification (M&V), key questions include:

- How much do I want to spend on performance verification?
- What degree of accuracy do I need?

- What are the tradeoffs?

The ordering agency pays the ESCO for performance period services, including M&V activities, from annual energy cost savings; agencies need to balance savings certainty and M&V cost. The law of diminishing returns applies with M&V: spending more money does not always produce a proportional benefit. FEMP recommends M&V activities that are commensurate in cost with the complexity and energy cost savings of the associated ECM. The final proposal and task order should clearly describe how ECM performance will be verified and the cost of M&V activities; the ordering agency will evaluate the amount of rigor needed versus the cost of M&V activities. Ensure that the M&V methods will help sustain long-term ECM performance and clearly demonstrate the savings achieved by the project. The most recent version of FEMP's M&V Guidelines: Measurement and Verification for Performance-Based Contracts is available on FEMP's website Measurement and Verification for Federal Energy Savings Performance Contracts.

Average annual costs associated with M&V activities from agency ESPC projects using DOE's ESPC IDIQ contracts is approximately 2% of guaranteed annual cost savings, when evaluated across all projects in performance as reported in the annual reported energy and cost savings from the FEMP ESPC program.

2.6 Energy- (or Water-) Related Cost Savings

Recurring or one-time cost savings due to energy- or water-related cost savings may be included in the project. One-time savings are commonly based on expenditures avoided because a planned project won't be necessary because it will be included in the ESPC project instead or no longer necessary because of the ESPC project. Committing to including one-time cost savings in out-years based on avoided operations and maintenance (e.g., replacement costs) may involve certain risk to the customer (ordering agency) due to the timing and availability of such funds. Also note that a Fiscal Year (FY) appropriation can disappear if project isn't awarded within that FY, so care should be taken when making these decisions.

Recurring energy- or water-related cost savings may result from reduced operations and maintenance expenses and must be based on actual spending reductions. Baseline energy- or water-related costs should be documented for each applicable ECM if energy- or water-related cost savings are proposed. See the FEMP How To Determine and Verify Operations and Maintenance Savings in Energy Savings Performance Contracts for recommendations for incorporating, documenting and verifying these savings in an ESPC. The RRP Matrix should clarify the sources of energy (and water) related cost savings and how they will be verified.

2.7 Delays

Both the ESCO and the ordering agency can cause delays, which typically occur after task order award, during final design and project implementation. Delays can impact not only the project in terms of lost savings, but can add to project costs, such as construction/project implementation

interest and/or remobilization. The project implementation/construction schedule should be detailed in the task order, including the timing of ordering agency reviews and approvals of submittals such as designs, equipment specifications, and the commissioning report. The ordering agency should be realistic in review times when negotiating the task order and plan adequate staff time for reviews throughout the project implementation/construction process, as such review times will be incorporated into the agreed upon schedule.

The ESCO is highly motivated to complete the project on time so that ordering agency payments, and ESCO payments for the financing of the project, can begin on schedule. Failing to do so entails significant financial consequences for the ESCO. The task order should include a process for addressing delays, and it is recommended that the ESCO always have a contingency plan in the event a delay is unavoidable. Similarly, if a significant delay occurs, the ESCO and ordering agency should meet to determine the underlying cause and a solution to overcome the problem.

2.8 Major Changes in Facilities

Changes in facilities included in the ESPC may occur over the term of the contract. The ESCO can't be held responsible for savings shortfalls resulting from facility changes controlled by the government. During acquisition planning and through project development, agencies should evaluate planned changes for buildings or facilities under consideration for inclusion in the ESPC. In the case where there are major changes planned for some of their facilities (e.g., reuse or major renovation), agencies should evaluate the benefit of pursuing ESPC projects in those buildings; buildings of questionable longevity (e.g., planned for demolition) should likely not be included in an ESPC project, and this should be communicated to the ESCO.

Over the term of the task order contract, which can be up to 25-years, changes will likely occur to some degree, and agencies may need to be prepared to modify the task order contract to reflect these changes if and when necessary. If a building is demolished, there are several paths to addressing the impact to the project, including termination for convenience. Partial terminations occur when only a portion of the installed ECMs are involved.

If a facility were closed (shut down) during the ESPC term, the government should be prepared to terminate the ESPC task order contract for the Government's convenience. Terminations for convenience must be executed using the process identified in FAR Part 49. The government should be prepared to pay allowable and allocable contractor costs to terminate the contract in accordance with FAR parts 49 and 31 as appropriate. The task order contract may include language outlining the process that would be used in case of termination in addition to the required monthly termination ceiling amounts for the entire task order contract performance period.

3 Operational Risks, Responsibilities and Performance

Operating hours, plug loads, weather, and user participation (or occupancy effects) can all affect energy usage and cost.

In ESPC task orders, savings are calculated in relation to a baseline for each ECM. The baselines represent the energy and related costs that would have occurred if the status quo had been maintained and no new ECMs had been installed. The ordering agency and the ESCO agree on the baselines for the ECMs, how they will be determined, and how savings will be calculated and compared to the guarantee for verification. The guarantee and the method for verifying savings must be documented in the task order contract, as well as a formal change control process for use if it becomes applicable to adjust the baseline, modify savings calculations or otherwise account for potential factors beyond the ESCO's control that may impact post-installation energy. These potential factors should be clearly identified in the RRP Matrix. Examples of factors beyond the ESCO's control that may influence post-installation energy include building occupancy, physical changes to building, area of conditioned space, addition or removal of equipment, operating conditions, and/or mission use. Not all factors that may influence post-installation energy require a change to the baseline.

3.1 Operating Hours and Load

The ordering agency generally has control over operating hours, conditioned floor space, occupancy, and equipment and building use, all of which affect equipment loads (i.e., heating, cooling, ventilation, and/or lighting requirements) and ultimately energy and water use. Increases or decreases in operating hours or energy loads can appear to be increases or decreases in energy or water savings depending on the M&V methods used. For example, over the term of the contract, if building occupants acquire no new electrical equipment that increases plug load, if the weather is not extreme, and if operating hours remain the same, reductions in the utility bills will more directly correspond to the ESCO's estimates of energy savings. However, if the number of computers and printers increase, if extreme weather occurs, or if building occupancy increases, facility energy usage will increase, and savings may not be readily apparent from the utility bills.

The ordering agency, as the party with the greatest ability to cost-effectively control operational factors, generally assumes financial responsibility for operating hours and energy load in one of two ways:

1. Baseline adjustments. The task order contract can allow specified baseline adjustments for changes in operational factors so that savings calculated in relation to the adjusted baseline will better reflect the savings attributable to the new ECMs. Baseline adjustments must be supported by measurements.

2. Stipulated operational factors. Both parties can agree to hold certain operational factors constant for the purpose of calculating savings and agree to accept estimated savings based on engineering calculations and measurements as a fair representation of savings (not based on rule-of-thumb estimates or anecdotal information). If related requirements are met (i.e., satisfactory commissioning results and maintenance tasks performed), the stipulated operational factors can be used to determine whether the guaranteed savings are achieved. Stipulated operational factors should be used for those factors for which there is a high degree of certainty or that have minimal impact on energy or water use.

Operating hours and plug loads are often specified and held constant in this way. With well-proven, predictable technologies, this is often the most practical choice. To minimize the risk of accepting stipulated values related to operating hours or load, stipulated values should be based on measured values rather than unverified assumptions, unverified schedules, or loose observation. The ESCO and ordering agency should discuss and agree on how operating hours and equipment loads will be determined during baseline development, and those methods, including what will be measured or stipulated and any assumptions, should be documented in the RRP Matrix and M&V Plan.

3.2 Weather

Weather can be a major factor in energy usage, and neither the ordering agency nor the ESCO has control over weather or its impact. A sensible approach is to normalize calculations of the baseline and yearly energy savings to a typical weather year (typical meteorological year (TMY) data, based on 30-year averages). Weather normalization is addressed in FEMP's Guidance on Utility Rate Estimations and Weather Normalization in Performance Contracts and use of weather data in performance contracts is addressed in FEMP's Measurement and Verification Guidelines for Performance-Based Contracts.

Normalizing weather factors evens out lower savings from mild weather years with excess savings in extreme years. This approach mitigates the risk of anomalous weather for the ESCO while maintaining the ESCO's responsibility for ECM performance (i.e., heating and cooling ECMs must still operate at required outputs and efficiencies). It is important to specify the weather data used for the project, including location and time period (range of years included in TMY dataset), and how weather will be addressed (by normalizing, through adjustments, etc.).

3.3 User Participation

Some measures require users (e.g., facility/energy managers, building occupant, etc.) to interact with equipment (or at least not override settings) for proper operation, and many task orders specify set points or other requirements. The ordering agency and ESCO will need to discuss and agree upon user participation requirements for each ECM, how the effects of user participation will be monitored and corrected if it negatively impacts ECM performance or guaranteed savings. The annual M&V activities shall include operational verification that equipment is functioning

properly, and the ESCO shall report any agency impacts to performance and provide a remediation plan to restore performance and savings.

Training is a key aspect of an ESPC and is specifically required within the ESPC statute. Training of ordering agency personnel on proper O&M of installed measures and recording, or providing periodic retraining as needed, may benefit the ordering agency in realizing savings and the ESCO, as the ESCO is ultimately responsible for guaranteeing savings.

Where user participation is required to generate savings, responsibilities can be assigned in one of several ways:

- the ESCO conducts training for agency personnel to carry out assigned responsibilities that may be one-time, annual or at a determined frequency, or
- the ordering agency may choose to conduct routine training for its own personnel to carry out assigned responsibilities and participate appropriately, or
- the ESCO performs the required functions as part of the ESPC.

If the ordering agency has a separate service agreement that includes O&M responsibilities, O&M requirements should be discussed and described within the RRP Matrix and the Project Management portion of the Technical Proposal.

4 Performance Risks & Responsibilities

Proper operation, preventive maintenance, and equipment repair and replacement are all critical to sustained performance and ensuring guaranteed savings are met. The specific performance of these tasks, and by which party, is negotiable. However, the ESCO bears the ultimate responsibility of ECM operation, maintenance, repair and/or replacement and all guaranteed energy and/or water savings regardless of which party performs the activity.

Equipment Performance. Performance of the ECMs is the foundation of the guarantee and the value of the project. The ESCO is ultimately responsible for selection, application design, installation, and performance of the equipment, and must maintain specified agency standards of service (e.g., temperature, humidity, lighting levels, etc.). Note that this may also include availability of equipment, particularly for resilience measures. The following items are negotiated and clearly detailed in the task order:

1. required performance and standards of service;
2. how performance and standards of service will be verified; and
3. the consequences for unacceptable performance and standards of service.

4.1 Operations and Preventive Maintenance

ECM operations and preventive maintenance are major factors in ECM performance risk. The ESCO has ultimate responsibility for operations and maintenance (O&M) and for assuring guaranteed performance of ECMs. However, day-to-day conduct of O&M is negotiable.

Performing operations or preventive maintenance may be assumed by the ESCO, by agency staff, by subcontractors, or shared. If the ESCO does the work, it assumes all the risk (and gets paid for it). While the ordering agency taking on more O&M reduces performance period expense and allows greater project investment, failure to carry out its O&M responsibilities as assigned in the task order can compromise the guarantee.

It is critical to define and document how proper performance of these functions will be ensured. Typically, the ordering agency operates the equipment with ESCO oversight. Maintenance responsibilities can be performed by either party, usually depending on ECM complexity and ordering agency expertise. The ESCO is always responsible for defining the maintenance program, providing training, and verifying execution.

The task order should clearly define which party will perform equipment operations and preventive maintenance for each ECM, and how proper operations and maintenance will be assured. The task order should also describe actions to be taken if inadequate O&M by either party affects performance and/or guaranteed savings.

4.2 Equipment Repair and/or Replacement (R&R)

As ESPCs are long-term contracts, the expected life of equipment is an important consideration. The ESCO is responsible for ECM R&R, however, the ordering agency should negotiate whatever arrangement best addresses its needs. Ordering agency performance of R&R functions can minimize the cost of the project, but some agencies lack the capability or prefer to pay for the "insurance" of having the ESCO perform equipment R&R. The party performing R&R may vary by ECM, similar to O&M responsibilities. Repairing or replacing faulty equipment and/or replacing equipment at the end of its useful life should be discussed and agreed upon prior to task order award.

The task order should clearly define which party will perform replacement of failed components or equipment for each ECM. Equipment life and warranty periods should be specified, including a plan for replacement of equipment with an expected life shorter than the term of the task order.

Factors the ordering agency should consider regarding taking on O&M or R&R tasks:

- It is often best for the ESCO to perform O&M/R&R for unfamiliar ECMs (e.g., renewable energy generation assets) installed as part of the project.
- Existing facility or ordering agency O&M contracts should be reviewed and may be an issue.
- If ESCO performs R&R, it will likely also ensure that O&M is performed correctly.

The annual M&V activities shall include operational verification that equipment is functioning properly, and a review of ESCO and agency O&M and/or R&R performed during the year. If any deficiencies are found, the ESCO shall report any impacts to performance and provide a remediation plan to restore performance and savings.

5 RRP Matrix Lessons Learned

The RRP Matrix ensures that the 16 key risk areas are addressed, and responsibilities assigned to ensure ESPC performance, and documented in a summary format. Keep in mind that additional details are located within the technical and financial proposals, which should match the RRP Matrix.

- Dialogue through filling out the RRP Matrix fosters mutual understanding of the deal and the risks and responsibilities for the ordering agency and ESCO. A draft RRP Matrix should be discussed during preliminary assessment review, and a final draft version should be discussed in detail during the final stages of investment grade audit development (in advance of proposal submission).
- The RRP Matrix is a valuable guide for proposal review — details in the M&V plan and other parts of the proposal should not conflict with the RRP Matrix.
- Careful consideration should ensure that the ordering agency does not take on O&M/R&R tasks that the organization is not prepared to perform.
- The RRP Matrix should be detailed, clear and easy to understand; ensure that the RRP Matrix is updated with agreed upon details to be included in the task order prior to award.

6 ESPC Risk, Responsibility and Performance (RRP) Matrix

[The column entitled "Contractor-Proposed Approach" shall be negotiated between the customer (ordering agency) and the contractor (ESCO) for each TO and then the word "Proposed" removed from the title prior to Task Order (TO) finalization/award.]

RESPONSIBILITY/DESCRIPTION	CONTRACTOR PROPOSED APPROACH
1. Financial	
a. Interest rates: Neither the contractor (ESCO) nor the customer (ordering agency) has significant control over prevailing interest rates. Higher interest rates will increase project cost, financing/project term, or both. The timing of the Task Order (TO) signing may impact the available interest rate and project cost. **Clarify how the project interest rate will be determined and when it will be locked.**	
b. Energy/Water Prices: Neither the contractor (ESCO) nor the customer (ordering agency) has significant control over actual energy or water prices, which tend to fluctuate over time. For calculating savings, the value of the saved energy or water may either be constant, change at a fixed inflation rate, escalate at an agreed-upon rate(s), or float with market conditions. If the value changes with the market, falling energy or water prices place the contractor (ESCO) at risk of failing to meet cost savings guarantees. If energy or water prices rise, there is a small risk to the customer (ordering agency) that energy or water saving goals might not be met while the financial goals are. If the value of saved energy or water is fixed (either constant or escalated), the customer (ordering agency) risks making payments in excess of actual energy or water cost savings. (Conversely, the customer could realize excess savings if actual rates exceed contractual rates). **Clarify how energy or water prices will be valued over time for the purpose of calculating cost savings.**	
c. Construction/Project Implementation Costs: The contractor (ESCO) is responsible for determining construction/project implementation costs and defining a budget. In a fixed-price design/build contract, the customer (ordering agency) assumes little responsibility for cost overruns. However, if construction/project implementation estimates are significantly greater than originally assumed for an ESPC project, the contractor (ESCO) may find that the project or measure is no longer viable and drop it before TO award. **Clarify how construction/project implementation costs will be determined and reviewed.** In any design/build contract, the customer (ordering agency) loses some design control. **Clarify design standards and the design approval process (including changes).**	
d. Measurement and Verification (M&V) confidence: The customer (ordering agency) assumes the responsibility of determining the level of confidence that it desires to have in the M&V program and energy (or water) savings determinations. The desired confidence will be reflected in the resources required for the M&V program, and the contractor (ESCO) must consider the M&V requirements prior to submittal of the task order proposal. **Clarify how project savings are being verified (e.g., equipment performance, operational factors, energy or water use) and the impact on M&V costs.**	
e. Energy (or Water) Related Cost Savings: The customer (ordering agency) and the contractor (ESCO) may agree that the project will include energy (or water) related savings from *recurring* and/or *one-time* costs. This may include one-time savings from avoided expenditures for projects that were appropriated but will no longer be necessary. Including one-time cost savings in out-years based on avoided operations and maintenance (e.g., replacement costs) may involve some risk to the customer (ordering agency) due to the timing and availability of such funds. Recurring savings may result from reduced operations and maintenance (O&M) expenses. These O&M must be based on actual spending reductions. **Clarify sources of energy (and water) related cost savings and how they will be verified.**	
f. Delays: Both the contractor (ESCO) and the customer (ordering agency) can cause delays. Failure to implement a viable project in a timely manner increases the costs for the customer (ordering agency) in the form of lost savings, and can add various costs to the ESPC project (e.g., construction/project implementation interest, re-mobilization). **Clarify the schedule and how delays will be handled.**	
g. Major changes in facility: The agency (or Congress) controls major changes in facility use, including closure. **Clarify responsibilities in the event of a premature facility closure, loss of funding, or other major change.**	

RESPONSIBILITY/DESCRIPTION	CONTRACTOR PROPOSED APPROACH
2. Operational	
a. Operating hours: The customer (ordering agency) generally has control over operating hours. Increases and decreases in operating hours can show up as increases or decreases in "savings" depending on the M&V method (e.g., operating hours multiplied by improved efficiency of equipment vs. whole-building/utility bill analysis). **Clarify whether operating hours are to be measured or stipulated and what the impact will be if they change.** If the operating hours are stipulated, the baseline should be carefully documented and agreed to by both parties.	
b. Load: Equipment loads can change over time. The customer (ordering agency) generally has control over hours of operation, conditioned floor area, and intensity of use (e.g., changes in occupancy or level of automation). Changes in load can show up as increases or decreases in "savings" depending on the M&V method. **Clarify whether equipment loads are to be measured or stipulated and what the impact will be if they change**. If the equipment loads are stipulated, the baseline should be carefully documented and agreed to by both parties.	
c. Weather: Certain energy or water conservation measures are affected by weather, which neither the contractor (ESCO) nor the customer (ordering agency) has control over. Should the customer (ordering agency) agree to accept risk for weather fluctuations, it shall be contingent upon aggregate payments not exceeding aggregate savings. **Clearly specify weather data used and how weather corrections will be performed.**	
d. User participation: Many energy (or water) conservation measures require user participation to generate savings (e.g., control settings). The savings can be variable and the contractor (ESCO) may be unwilling to invest in these measures. **Clarify what degree of user participation is needed and use monitoring and training to mitigate risk.** If performance is stipulated, document and review assumptions carefully and consider the appropriate M&V method to confirm the capacity to save (e.g., confirm that the controls are functioning properly).	
3. Performance	
a. Equipment performance: The contractor (ESCO) has control over the selection of equipment and is responsible for its proper installation, commissioning, and performance as well as all guaranteed energy and/or water savings. The contractor (ESCO) has responsibility to demonstrate that the new improvements meet expected performance levels, including specified equipment capacity, standards of service, and efficiency. **Clarify how performance and standards of service will be verified, and what will be done if it does not meet expectations.**	
b. Operations: Performance of the day-to-day operations activities is negotiable and can impact performance. However, the contractor (ESCO) bears the ultimate risk of operations and all guaranteed energy and/or water savings regardless of which party performs the activity. **Clarify which party will perform equipment operations, the implications of equipment control, how changes in operating procedures will be handled, and how proper operations will be assured.**	
c. Preventive Maintenance: Performance of day-to-day maintenance activities is negotiable and can impact performance. However, the contractor (ESCO) bears the ultimate risk of maintenance and all guaranteed energy and/or water savings regardless of which party performs the activity. **Clarify how long-term preventive maintenance will be assured, especially if the party responsible for long-term performance is not responsible for maintenance (e.g., contractor provides maintenance checklist and reporting frequency). Clarify who is responsible for performing long-term preventive maintenance to maintain operational performance throughout the contract term. Clarify what will be done if inadequate preventive maintenance impacts performance.**	
d. Equipment Repair and Replacement: Performance of day-to-day repair and replacement of contractor-installed equipment is negotiable, however it is often tied to project performance. The contractor (ESCO) bears the ultimate risk of equipment repair, replacement and all guaranteed energy and/or water savings regardless of which party performs the activity. **Clarify who is responsible for performing replacement of failed components or equipment replacement throughout the term of the contract. Specifically address potential impacts on performance due to equipment failure. Specify expected equipment life and warranties for all installed equipment. Discuss replacement responsibility when equipment life is shorter than the term of the contract.**	

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