**U.s. Department of ENERGY**

**Federal Energy Management Program**

**ESPC ENABLE WITH ENERGY SALES AGREEMENT**

**Scope of Work Template and Guide**

January 2019, version 1.0

***PLEASE READ THIS GUIDE BEFORE USING THE SCOPE OF WORK TEMPLATE***

**ESPC ENABLE with ESA Scope of Work Guide**

**Introduction:** The Scope of Work (SOW) will be drafted by the agency and presented to the energy service company (ESCO) prior to the kickoff meeting for the Investment Grade Audit (IGA). The SOW documents the agency- and site-specific specifications, standards, and terms and conditions that will be included in the Task Order (TO)/Final Contract.

*For PV ESA ECM:*

This template is specifically tailored for projects that intend to incorporate a photovoltaic (PV) energy sales agreement (ESA) as one of the energy conservation measures (ECMs)[[1]](#footnote-1) in an energy savings performance contract (ESPC) ENABLE project. This template assumes that the ESA will be bundled with other energy conservation measures (ECMs). Edit the document accordingly if the photovoltaic (PV) ESA will be the only ECM. Contact your [federal project executive](https://www.energy.gov/eere/femp/energy-savings-performance-contract-federal-project-executives-0) (FPE) for SOW edit recommendations if the project will be ESA-only. FEMP provides technical specification resources on [solar photovoltaic](https://www.energy.gov/eere/femp/technical-specifications-site-solar-photovoltaic-systems) and [battery storage](https://www.energy.gov/eere/femp/articles/lithium-ion-battery-storage-technical-specifications) systems that include language that can be included in the scope of work.

**Instructions:** This TO template may be used by Federal agencies for all Federal buildings and facilities in accordance with the procedures established in this contract. Unless otherwise stated, all provisions that follow throughout the remaining sections of this SOW may be revised within the overall scope of the TO, as necessary (based on the needs and requirements of the agency).

The ESPC ENABLE Contracting Officer (CO) and Contracting Officer’s Representative (COR) are responsible for developing the SOW unless another arrangement has been made in your agency. The SOW template begins on page 3 of this document. Please remove this guide, pages 1 and 2, from the final version of your SOW and renumber accordingly.

This template ***cannot be used without editing***. In the template, you will find two types of text. [Sample text will appear in black font.] Please review the [sample text] to ensure that it meets your agency specific requirements. [Text that requires you to insert agency- or project-specific information, or requires you to edit for your purposes, will appear in red font. PV ESA ECM-specific information is indicated with “For PV ESA ECM:”. *PV ESA ECM notes are in blue italics.*] You should be sure to reformat this document to fit your particular agency’s needs and requirements.

**(Agency/sub-agency/Site) ESPC ENABLE with ESA**

**Scope of Work**

**INTRODUCTION**

This Task Order (TO) is intended to promote the use of energy efficient technologies, acquire energy and water conservation services, reduce energy and water consumption and/or associated utility costs.

The contractor shall be responsible for providing all labor, material, and capital to install energy and water conservation projects. The cost of an energy savings performance contract (ESPC) ENABLE TO (hereafter referred to as TO) must be covered by the energy, water, and related cost savings incurred at the Federal facility. The TO cost savings must be verified and documented annually.

*For PV ESA ECM:*

The TO will also include a photovoltaic (PV) energy sales agreement (ESA) ECM. An ESPC ESA is a project structure that allows federal agencies to utilize the ESPC long-term multiyear contracting authority to implement cost-saving renewable energy ECMs on federal buildings and land where the ECM is initially privately owned and the agency purchases the electricity produced, with payment based on electricity generation (cents/kWh). The selected ESCO is responsible for all operation & maintenance, repair & replacement. PV ESA ECMs have unique considerations - see Section C.3 for more details.

**ORDER OF PRECEDENCE**

This Scope of Work (SOW) takes precedence over the contractor’s Final Proposal (See Section H.3).

**DEFINITIONS**

Federal Agency Customer – buyer of services responsible for acceptance determination and payment based on resulting contract and agreed upon project plan.

Contractor – organization to perform work for a fee and responsible for project plan; energy conservation measure equipment procurement; installation; adjusting current systems; implementation of other energy conservation measures; commissioning and performing acceptance test.

Investment Grade Audit (IGA) – validation by contractor of the survey/evaluation information performed utilizing the FEMP-provided survey tools.

Final Proposal – contractor’s written binding offer that is submitted in response to an agency Notice of intent to Award and Scope of Work that includes a project overview, technical and price components and the text of any financing agreement.

Commissioning – calibration and performance of installed equipment in accordance with manufacturer’s recommendations, operation and maintenance requirements and final proposal.

Acceptance – owner’s agreement that the project is completed in accordance with task order.

Parties – the agency and the Contractor.

*For PV ESA ECM:*

Actual Annual Production - amount, in kilowatt hour (kWh), produced by the PV ESA ECM, as measured by the revenue meter.

Annual ESA Price – annual PV ESA ECM price (cents/kWh), taking into account the ESA escalation rate (if applicable).

Current Cost of Energy – baseline utility kWh rate (cents/kWh) for the first Production Year, that will be escalated per the agreed upon utility escalation rate (from the Energy Escalation Rate Calculator or other source).

Interconnection Equipment – any electrical switchgear, transformers and telemetry equipment that is required by code and or utility regulation to establish and maintain an interconnection with the site electrical distribution system. This equipment may be installed on the customer owned and/or utility owned distribution networks.

PV ESA ECM – PV system and all associated equipment installed on-site by the Contractor to produce the solar energy purchased by the Government under the TO; including but not limited to the PV panels, inverters, controls, meters, switches, connections, conduit, wires, mounting and other equipment.

Fair Market Value (FMV) - with respect to any tangible asset or service, the price that would be negotiated in an arm’s-length, free market transaction, for cash, between an informed, willing seller and an informed, willing buyer. FMV of the PV ESA ECM will be determined pursuant to Section H.2.5.

Reserve Account[[2]](#footnote-2) - an account independently held by the ESCO in which a portion of an agency's annual payments from energy savings are set aside for title transfer of the PV ESA ECM at FMV by the end of the contract.

**SECTION C - DESCRIPTION/SPECIFICATIONS/SCOPE OF WORK**

**C.1 Energy Conservations Measures (ECMs)**

The scope of this ESPC ENABLE Task Order includes lighting efficiency and controls improvements, water conservation, simple heating, ventilating, and air-conditioning (HVAC) controls, HVAC equipment, and PV ESA ECMs.

**C.2 Restrictions on ECMs**

ECMs installed by the contractor shall not do the following:

1. Jeopardize the operation or environmental conditions of existing systems.

2. Increase water consumption. (*For PV ESA ECM:* Water required for panel cleaning is allowed).

3. Result in an adverse effect upon the quality of the human environment or violate any Federal, State, or local environmental protection regulations.

4. Degrade performance or reliability of existing Government equipment.

5. Reduce extra capacity that was intentionally included for future growth, mobilization needs, safety, or emergency back‑up.

(Specify any additional site- or agency-specific restrictions on ECMs for the proposed project.)

**C.3 Facility Performance Requirements of ECMs**

Installed ECMs shall comply with the standards of service required for facilities as specified in each TO. The standards of service may include acceptable temperature and humidity ranges, allowable setbacks, noise criteria, air quality parameters, lighting levels, and other related factors, as agreed to between the agency and the contractor. At a minimum, where automated controls of lighting or environmental conditions are to be installed, the agency must have the ability to temporarily override the HVAC and lighting systems.

(Specify additional agency- or site-specific facility performance requirements for ECMs in this section.)

*For PV ESA ECM:*

The Contractor, at its own expense, shall furnish all engineering, design, construction, personnel, supervision, facilities, permitting, materials, equipment, transportation, supplies, interconnection impact studies, and services necessary to install, interconnect, operate and maintain (O&M) the PV ESA ECM and interconnection equipment needed to meet the requirements of this SOW, in accordance with all of the TO contract terms and conditions.

The TO, including the PV ESA ECM, must meet all ESPC legal requirements (see, *e.g.*, 42 U.S.C. § 8287, *et seq.*), including the requirement that the agency pay for the cost of the TO from energy savings generated each year over the life of the contract.

In order for the ESPC ESA contract to be scored annually, it must be consistent with the requirements under the Office of Management and Budget (OMB) “[Addendum to OMB Memorandum M-98-13 on Federal Use of Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs)](https://www.gsa.gov/cdnstatic/Environmental_Programs_Addendum_to_OMB_Memo_m-12-21.pdf)” (M-12-21, dated September 28, 2012)[[3]](#footnote-3), including the requirement that the federal government retain title to the onsite renewable energy generation system by the end of the contract.

The Contractor awarded this TO may be eligible for tax incentives such as the federal Investment Tax Credit (ITC) and the Modified Accelerated Cost Recovery System (MACRS). Internal Revenue Service (IRS) Revenue Procedure 2017-19[[4]](#footnote-4) provides a safe harbor (related to ITC eligibility) under which the IRS will not challenge the treatment of an ESPC ESA as a service contract under 26 U.S.C. § 7701(e)(3). Section 4 of the Revenue Procedure specifies safe harbor requirements, including a maximum contract length of 20 years. This contract length limitation applies to the ESPC ESA ECM only. The Contractor may determine that the contract length for the other ECMs can be longer than 20 years and not jeopardize the ITC or other federal tax incentives. Tax incentive eligibility due diligence is the responsibility of the Contractor, not the government.

The PV ESA ECM will be Contractor-owned initially. The OMB Memo title retention requirement will be satisfied through a PV ESA ECM title transfer by the end of the contract term at FMV, as appraised at the time of the title transfer. The Contractor will transfer a portion of the payments it receives from agency each year into a reserve account held by the Contractor. See Section H.2.6 for details regarding the FMV title transfer.

**C.4 Measurement and Verification (M&V) of ECM Performance**

The contractor shall reference the FEMP ESPC ENABLE **08\_Measurement and Verification (M&V) Plan Template** and the **M & V Protocol**. The FEMP ESPC ENABLE **M&V Protocol** provides prescribed methods quantifying energy, water, and cost savings associated with ECMs implemented in ESPC ENABLE projects.

M&V Activities - the following required M&V activities shall be performed:

1. The contractor shall define pre-installation baseline
2. The contractor shall define post-installation conditions
3. The contractor and/or the agency shall conduct an annual inspection of the installed energy conservation measures

M&V Submittals

1. The contractor shall prepare and submit a post-installation M&V report to the agency
2. The contractor shall prepare and submit an annual M&V report to the agency

*For PV ESA ECM:*

The PV ESA ECM shall use M&V Option B as described in the FEMP ESPC ENABLE **M&V Protocol** for PV ECMs.

**C.5 Installation Requirements for ECMs**

C.5.1 Design and Installation Package - Consideration may be given to:

* Manufacturer's Data
* Design and Installation Specifications
* Installation Drawings - Planned Service Interruptions Site Plan
* Compliance with Federal Site Exterior Architectural Plan
* Acquisition of Permits for Installation and Operation
* Warranty Information
* Design review requirement will be specified in the Task Order.

(Specify any Agency/site specific Design and Installation package requirements here.)

*For PV ESA ECM:*

Design and construction plans shall demonstrate compliance with all applicable codes and standards.

The agency shall review and approve all design and construction plans, engineering evaluations of the impact of PV ESA ECM on the site electrical distribution system and upgrade plans based on utility interconnection requirements. The agency may involve others in the review, including but not limited to code officials and representatives of the utility company.

Acceptance of the design and construction package by the ordering agency shall not relieve the Contractor from responsibility for meeting facility standards of service and guaranteed cost savings.

The Contractor shall provide all final as-built drawings and descriptions that represent the final as-built condition of the PV system.

*(Agency include additional design and/or other review requirements as applicable.)*

C.5.2 Design and Construction Standards - No requirement of this Task Order shall supersede applicable regulations, local codes and/or standards. Any violation of such regulations and standards shall be brought to the attention of the agency Contracting Officer (CO) for clarification or direction prior to proceeding with the work.

*The agency may want to consider including the following:*

American National Standards Institute (ANSI)

• Code of Federal Regulations (CFR) - 29 CFR 1910, Occupational Safety and Health Standards

- 10 CFR 435, Energy Conservation Voluntary Performance Standards for Commercial and Multi-Family High Rise Residential Buildings

- 29 CFR 1926, Safety and Health Regulations for Construction

• National Electric Code (NEC)

• National Electrical Safety Code (NESC)

• National Fire Protection Association (NFPA) Standards including, but not limited to, NFPA 101 - Life Safety Code

• National Electrical Manufacturers Association (NEMA)

• Underwriters Laboratory (UL)

• Uniform Building Code (UBC)

• Uniform Plumbing Code (UPC)

American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) - ASHRAE 62

- ASHRAE 90.1

• Army Corps of Engineers Safety Manual

• National Historic Preservation Act, as applicable

• Illuminating Engineering Society of North America (IESNA)

• American Institute of Architects (AIA) Masterspec

• Air-Conditioning and Refrigeration Institute (ARI)

• Occupational Safety and Health Administration (OSHA) regulations

• Other design standards required by the ordering agency

(Please include any additional design and/or construction standards in this section.)

*For PV ESA ECM:*

The PV ESA ECM shall adhere to the NEC NFPA 70, work shall be conducted according to the safety requirements of the applicable code (NFPA 70E), and all equipment shall be UL-listed for the system design voltage. See Section C.24 for structural design requirements.

*(Include all codes required by the authority having jurisdiction and the serving utility. Consult the FEMP* [Solar Photovoltaic Technical Specifications](https://www.energy.gov/eere/femp/technical-specifications-site-solar-photovoltaic-systems) *for codes that the agency may want to consider for the PV ESA ECM.)*

C.5.3 ECM Inspection and Commissioning - The contractor shall be responsible for quality control during installation of ECMs. The contractor shall inspect and test all work performed during ECM installation to ensure compliance with the TO's performance requirements. The contractor shall maintain records of inspections and tests, including inspections and tests conducted by or for any non-Federal organization, such as a utility or other regulatory agency. The contractor shall assure the agency, through the ECM Commissioning, that the ECMs performance achieves facility and/or process performance requirements as set out in the TO. Commissioning standards and procedures are established in the FEMP ESPC ENABLE **09\_Guidelines and Checklist for Commissioning and Government Acceptance**.

(Please include any additional ECM inspection and commissioning requirements in this section.)

*For PV ESA ECM:*

*(Specify any additional inspection and commissioning requirements, here or in Section E, including the use of the IEC 62446 Grid Connected Photovoltaic Systems Minimum Requirements for System Documentation, Commissioning Tests and Inspection standard. The PV ESA ECM monitoring system and all related cyber security measures should be included in the inspection. Roof-top systems shall be inspected to ensure that applicable roof warranty and all other related requirements including mounting system structural requirements are met.)*

5.4 Environmental Protection - Any ECM and related work shall comply with the National Environmental Policy Act (NEPA) and other applicable Federal, State, and local environmental protection regulations. The TO will identify specific known hazardous waste handling and storage requirements (e.g., Polychlorinated Biphenyl (PCB) ballasts removed from lighting fixture retrofits).

The contractor shall comply with applicable Federal, State, and local laws and with the applicable regulations and standards regarding environmental protection. All environmental protection matters shall be coordinated with the agency CO. Authorized agency officials may inspect any of the contractor's work areas on a no-notice basis during normal working hours. The contractor shall indemnify and hold the Government (including the ordering agency, GSA and/or any person acting on behalf of the Government) harmless for any and all liability, including attorneys’ fees and legal costs, resulting from the contractor’s noncompliance or violation of any applicable Federal, State or local law, regulation or standard regarding environmental protection. In the event that a regulatory agency assesses a monetary fine against the agency for violations caused by the contractor’s actions or inaction, the contractor shall immediately reimburse the agency for the amount of any fine and other related costs. The contractor shall also clean up any oil spills, hazardous wastes, and hazardous materials resulting from the contractor's operations. The contractor shall comply with the instructions of the agency’s designated safety and health personnel to avoid conditions that create a nuisance or which may be hazardous to the health of agency or civilian personnel.

The contractor shall prepare all documentation necessary to support obtaining permits to comply with all applicable Federal, State and local requirements prior to implementing affected ECMs in the performance of a TO. The contractor shall not receive a notice to proceed with installation from the agency until all applicable environmental protection requirements in the TO have been satisfied.

The contractor shall comply with all applicable regulations and with the requirements of the latest edition of the applicable Federal agency's Spill Prevention Control and Countermeasures Plan, or similar plan, and requirements of the TO.

(Please insert any additional or site-specific environmental concerns in this section.)

*For PV ESA ECM:*

*(Specify NEPA status, requirements based on NEPA study results and any NEPA work that will be the Contractor’s responsibility. Also include any other applicable compliance requirements such as the National Historic Preservation Act.)*

C.5.5 Service Interruptions - For any planned utility service interruptions, the contractor shall furnish a request to the agency CO's designated representative for approval as specified in the TO. The request shall identify the affected buildings, utility service, and duration of planned outage. The agency will coordinate with affected tenants and customers as applicable.

(Please insert any additional requirements related to service interruptions in this section.)

**C.6 Operation & Maintenance (O&M), Repair and Replacement of ECMs**

O&M, repair and replacement of the ECMs, except the PV ESA ECM, are the responsibility of the government. The contractor shall assist the government in warranty administration during the warranty period.

(Please insert any additional information related to O&M, repair and replacement of ECMs in this section.)

**C.6.1 PV ESA ECM O&M, Repair and Replacement**

*For PV ESA ECM:*

O&M, repair and replacement of the PV ESA ECM is the responsibility of the Contractor. Contractor shall provide O&M required to keep the system operating at its optimal performance and to ensure on-going safety of the system. The Contractor shall provide the government with all applicable O&M manuals at the beginning of the contract, at the end of the contract when title is transferred to the government and during the performance period if there are any major equipment changes The Contractor shall be responsible for warranty administration during the warranty period and will pass on all remaining warranties to the government upon PV ESA ECM title transfer.

The Contractor bears all financial risk for non-performance of the PV ESA ECM, except to the extent such non-performance is attributable to a temporary shut-down of the government’s facilities for repairs, maintenance, or capital improvements. The contract price for electricity will not be reduced if Contractor operating costs should diminish.

If equipment failure or damage is a result of the Contractor’s failure to perform or negligence in performing repairs, the Contractor shall provide repair or replacement at its expense or, if repaired or replaced at ordering agency expense, the Contractor shall reimburse the ordering agency for any and all costs and losses attributable to the Contractor’s failure or negligence.

**C.6.2 PV ESA ECM Contractor Maintenance and Repair Response Time**

**A.** The Contractor shall establish a point of contact (name, phone number, and email address) for use by the ordering agency in notifying the Contractor of the PV ESA ECM maintenance or repair. The point of contact shall be available as specified in the TO throughout the TO's term. Initial telephone response to maintenance or repair calls shall be within the timeframe specified in the TO. If a site visit is needed to maintain or repair equipment, Contractor personnel shall arrive on site within the timeframes specified in the TO for emergency and nonemergency maintenance and repair.

**B.** Emergency maintenance and repair work is defined as maintenance or repair necessary to correct an existing or imminent failure to meet the Facility Performance Requirements of ECMs, Section C.3, or any action necessary to protect the safety or health of the facility occupants and prevent adverse impacts on property.

**C.** In the event the Contractor fails to respond as required in the TO and in the event of emergencies, the agency may incur expenses to perform emergency repairs to Contractor-installed equipment as well as agency equipment for which the Contractor assumed maintenance and repair responsibilities. The Contractor shall indemnify and hold the agency harmless in such cases where the Contractor fails to respond as specified in the TO for emergencies. The Contractor shall promptly reimburse the agency for any and all costs incurred in responding to such emergencies. Such reimbursement may include the agency adjusting the payment schedule, as necessary, to recover such costs.

*(Agency specify some/all of the following:*

* *Availability (times) of contractor contact for equipment failures,*
* *Time allowed for contractor telephone response and arrival on site in response to emergency and nonemergency repair calls from agency,*
* *Hours of access granted to the contractor for emergency work,*
* *Consider local requirements and critical systems, etc.)*

**C.7 Training**

The Contractor shall provide a training program for agency personnel and/or agency contractors for each ECM in a project. The program shall include instruction on operation, troubleshooting, maintenance, and repair of ECMs.

(Please insert any additional information related to training in this section.)

*For PV ESA ECM:*

Contractor shall provide training to include: what is to be expected under normal operation of the system; locations and operations of agency-accessible components such as safety shut-off switchgear; O&M; repair and replacement of the PV ESA ECM; fire protection (see Section C.13), shut-down, re-start and other procedures in the event of an emergency. Training shall include any federal agency requirements related to site access. A high-quality digital audio/video recording of the training session(s) shall be provided to the agency. PV ESA ECM training shall also be provided at the end of the contract term when title is transferred to the government and during the performance period if there are any major equipment changes.

**C.8 Government Projects**

(Specify any known Government projects (if any) which may affect installation or operation of ECMs.)

**C.9 Energy Efficiency, Water, and Solar PV Project Financial and Tax Incentives**

C.9.1 Financial and Tax Incentives - The contractor shall be responsible for determining the source, value, and availability of any applicable financial and tax incentives for the project and shall collaborate with the agency to consider and securing incentive options.

(Please insert any additional information related to financial and tax incentives in this section.)

*For PV ESA ECM:*

All applicable incentives for the PV ESA ECM shall be accounted for and reflected in the PV ESA ECM price. The Contractor is responsible for determining the applicability of all incentives and for applying for and monetizing any incentives. Tax incentive eligibility due diligence is the responsibility of the Contractor, not the government. The ESPC ESA price will not be modified if the IRS determines that the Contractor is not eligible for the tax incentives or any other incentives offered by others and the Contractor has no other recourse against the Government.

## C.9.2 - Disposition of Solar Renewable Energy Certificate (SRECs)

*For PV ESA ECM:*

*(Agency should decide whether they want to purchase the project SRECs based on the applicable SREC market price/conditions. The Contractor could be required to purchase replacement RECs or the agency should plan to purchase replacement RECs, if needed for compliance with the current renewable energy goal and related guidance. It may be beneficial for an agency to purchase the SRECs in the latter years of the contract when the SREC value will likely be low or zero. Contact your FPE for assistance in developing appropriate SOW language.)*

*(**Use the following language if the agency would like the Contractor to sell the SRECs and reduce the PV ESA ECM price:)*

The Government’s purchase of energy from the PV ESA ECM excludes the associated SRECs. The Contractor is free to sell the SRECs *(select from one of the following if the agency would like replacement RECs: “and shall purchase replacement RECs on behalf of the agency” or “and agency will purchase replacement RECs”)*. The Contractor is responsible for fulfilling all requirements necessary for the SREC sale. It is anticipated that SREC proceeds may allow the Contractor to propose a lower PV ESA ECM price.

*(Use the following language if the agency would like to purchase the SRECs with the electricity:)*

The SRECs shall be transferred to the agency or retired on the agency’s behalf in one of the REC tracking systems[[5]](#footnote-5).

*(Please insert any additional information related to financial/tax incentives and SRECs in this section.)*

**C.10 Availability of Utilities**

The agency will furnish water and electric current at existing outlets, as may be required for the installation work to be performed under a TO, at a cost of the usage mutually agreed to by the contractor and the agency. The contractor shall, in a workmanlike manner satisfactory to the agency, install and maintain all necessary temporary connections and distribution lines for each utility and return the system to the original configuration. Information concerning the location of existing outlets may be obtained from the agency.

(Please insert any additional information related to the availability of utilities in this section.)

**C.11 Government Furnished Property and Contractor Furnished Material**

The contractor shall provide all materials and supplies necessary to perform the work as specified in the TO. Materials and supplies provided shall be of the grade and quality as specified in the TO and be in compliance with any applicable standards. All such materials and supplies must be compatible, and operate safely within design parameters of existing systems equipment and be of current manufacture (not discontinued or obsolete).

(Please insert any additional information related to government furnished property in this section.)

**C.12 Contractor Employees**

12.1 - Upon issuance of a TO, the contractor shall provide the agency with the name(s) of the responsible supervisory person(s) authorized to act for the contractor during construction and for PV ESA ECM O&M.

12.2 - The contractor shall furnish sufficient personnel to perform all work specified within the TO.

12.3 - Contractor employees shall conduct themselves in a proper, efficient, courteous, and businesslike manner.

12.4 - The contractor shall remove from the site any individual whose continued employment is deemed by the agency to be contrary to the public interest or inconsistent with the best interests of agency business or national security.

(Please insert any additional information related to contractor employees in this section.)

**C.13 Fire Prevention**

The contractor shall ensure that its employees know how to activate agency site fire alarms. The contractor shall observe all site requirements for handling and storing combustible supplies, materials, waste and trash. The contractor shall obtain all required permits prior to performing any hot work (e.g., welding, cutting torch), if applicable.

(Please insert any additional information related to fire prevention in this section.)

*For PV ESA ECM:*

The contractor shall inspect the system initially and maintain it over the contract term in order to prevent electrical and other sources of fire (exposed parts, arc-faults, ground-faults). See Section C.25 for Vegetation Management requirements. The contractor shall consult with the agency fire marshal/fire safety officer regarding the design, location and layout of the PV ESA ECM. The contractor shall provide training for agency designated fire protection personnel regarding PV ESA ECM operations, site access, safety shut-off switchgear and fire safety procedures. The contractor shall provide printed versions of these fire safety procedures.

**C.14 Salvage**

All Government material and equipment removed or disconnected during the implementation period of a TO issued shall remain the property of the agency and shall be included in the proposal for each ECM. All equipment to be stored shall be listed in the TO. Any material and equipment not to be stored, and all debris resulting from work under a TO, shall be removed from the site by the contractor at its expense, unless otherwise specified in the TO.

(Please insert any additional information related to salvage in this section.)

**C.15 Hazardous Materials**

As part of each proposed ECM project, the contractor shall identify the presence of and include the cost of removal of any known hazardous material for each ECM, unless the agency performs the removal.

If hazardous material is identified after TO award, the contractor shall immediately stop work, take measures to reduce the contractor or building personnel contamination, and immediately notify the agency and the building manager of the hazardous material condition and location. The agency will then:

1. Remove and dispose of the material; or
2. Negotiate with the contractor for either (1) a TO modification for removing and disposing of the material at its expense, or (2) a separate award for the effort. The contractor shall be required to remove and dispose of the hazardous material in the manner agreed upon by the parties; or
3. Make any equitable adjustment necessary due to the change to or elimination of the ECM involved.

In addition, if the handling and disposal of hazardous material and Poly-chlorinated Biphenyl (PCB), is or becomes the responsibility of the contractor in a TO award, it shall be handled as follows:

Hazardous Material Handling and Disposal - Hazardous wastes resulting from contractor-owned material and equipment must be disposed of in accordance with the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§6901, et seq.) and all applicable Federal, State and local regulations. The TO may provide additional site-specific requirements, if applicable

PCB Handling and Disposal - If PCBs exist at a site covered by a TO, then the TO shall contain the necessary clause addressing PCB recycling and/or disposal requirements to comply with applicable Federal, State and local regulations. The TO will provide additional site-specific PCB handling, and disposal requirements, if applicable.

Nonhazardous debris, rubbish, and unusable material resulting from the work shall be removed from agency property and properly disposed or recycled by the contractor. TOs will specify the requirements if different than the above.

(Please insert any additional information related to hazardous materials in this section.)

**C.16 Safety Requirements**

All work shall be conducted in a safe manner and shall comply with the requirements in FAR 52.236-13 or the agency’s safety program requirements.

(Please insert any additional information related to safety requirements in this section.)

**C.17 Security Requirements**

Passes and Badges -All contractor employees shall obtain employee and vehicle badges and passes, as required by the agency, for the specific TO site prior to the start of on-site work. The agency will issue badges it requires, without charge, and the badges must be worn, clearly visible, by the employees at all times while on site. When an employee leaves the contractor's service, or when access is no longer required, the employee's pass and badge shall be returned in accordance with agency requirements. TOs will specify the security requirements, if different than the above.

(Please insert any additional information related to security requirements in this section.)

**C. 18 Work Schedule Requirements**

The contractor shall arrange its on-site work so that it will minimize interference with normal agency business. At a minimum, the contractor shall submit a weekly work schedule for agency approval for all on-site work performed under the TO. In no event shall the contractor change approved work schedules without the prior consent of the agency.

Each TO will include specific inspection criteria pertinent to the TO.

(Please insert any additional information related to work schedules in this section.)

**C.19 Thirty-Day Acceptance Test Period**

The Government will require a 30-day test period where all ECMs must operate as proposed for a minimum of 30 consecutive days prior to project acceptance. The Government CO will accept the project installation in writing, in accordance with Section E. upon satisfactory completion of the required (30-day) acceptance/test period, and upon receipt of all other required deliverables. Moreover, since some systems will not be capable of being fully tested until the appropriate season of the year (i.e. winter, summer, spring or fall) the Government reserves the right to seek recourse against the Contractor for systems installed by it, but for which it does not discover the malfunction or deficiency until the appropriate heating or cooling season has arrived to make it manifest.

(Please insert any additional information related project acceptance in this section.)

*For PV ESA ECM:*

During the 30-day acceptance test period, the contractor shall monitor actual production compared to expected production. The contractor shall correct any deficiency in the performance and demonstrate at least 30 days of continuous acceptable performance.

**C.20 Deliverables and Submittals**

Unless otherwise specified, all deliverables will be distributed to the agency and DOE electronically and accompanied by a transmittal cover letter identifying the project and a description of the deliverable. The minimum deliverables to be submitted to the agency are as follows:

To the CO and COTR:

1. Signed TO with all attachments

2. TO modifications with all attachments

3. Investment Grade Audit/ Final Proposal

5. Post-installation M&V and Commissioning Report

7. Annual M&V Reports

(Please insert any additional information related to Deliverables and Submittals in this section.)

*For PV ESA ECM (Sections C.21-C.25):*

**C.21 Interconnection**

**C.21.1 Interconnection to Site and/or Building Electrical Distribution Systems**

The Contractor shall provide interconnection of the PV ESA ECM with the site electrical distribution system and take actions to ensure that the PV ESA ECM is compatible with the site electrical distribution system. The Contractor shall propose the electrical design, point of interconnection to the site electrical distribution system, and the voltage and phase configuration, for approval by the government and other involved parties such as the electric utility and fire marshal.

Modifications or upgrades to the site electrical system required to interconnect the PV ESA ECMs are the responsibility of the Contractor. Contractor to propose needed upgrades or modifications to meet federal agency, utility and other requirements; that will be subject to a review and approval process *(specify agency requirements and/or review and approval process details, as applicable)*.The Contractor is responsible for the proper circuit sizing, overcurrent protection, and coordination of the circuit(s) beyond the point of connection, including modifications to the federal site’s electrical equipment and circuits; all at the Contractor’s expense. Any modifications to the approved PV ESA ECM design that would affect the site electrical distribution system shall require written approval of the government.

**C.21.2 Local Utility Interconnection Requirements**

The Contractor is responsible for complying with all electric utility interconnection requirements, providing all necessary PV ESA ECM details for the interconnection applications, and funding any required interconnection studies to be performed by or on behalf of the electric utility. The Contractor shall provide any needed repairs and upgrades to site and/or utility electrical distribution equipment to meet interconnection requirements; as well as any O&M that may be required on the site and/or utility upgraded electrical equipment over the term of the contract (unless the O&M is provided by the utility or another party). The Contractor shall provide to the local utility if required: single line diagrams, engineering power flow studies, estimated energy production data estimates, and other specifications and data with respect to the PV ESA ECM.

The Contractor is responsible for gaining approval from the electric utility for interconnection and any electric utility-required upgrades. The government will assist in facilitating communications with the utility for this purpose. The electric utility interconnection agreement for the PV ESA ECM will be signed by the government and/or the Contractor.

The Contractor shall submit an electric utility interconnection process plan to the government within 14 days of contract award. The plan shall include key steps, timeline, interconnection details, and assumptions necessary to complete the interconnection process.

Any local codes required by utility interconnection laws and regulations shall be followed. The Contractor will be responsible for all applicable fees, permits, and inspections.

**C.22 Array Glare Analysis (if applicable)**

*(The Federal Aviation Administration (FAA) requires that the SGHAT tool be used to analyze potential glare for PV systems sited at federally-obligated airports.*[[6]](#footnote-6) *Private airports and land adjacent to airports are not covered under these policies, although the FAA encourages landowners interested in siting solar PV systems to follow the FAA’s policies. Federal agency should insert applicable requirements based on current FAA and other guidelines, including agency policy.)*

The Contractor shall conduct a glare analysis, as necessary for Federal Aviation Administration (FAA) review and/or as required by the agency policy; using the Solar Glare Hazard Analysis Tool (SGHAT) or similar acceptable tool. The SGHAT tool has been licensed and is now solely available through ForgeSolar.[[7]](#footnote-7) The glare analysis shall be conducted after the conceptual design is approved by the Government. The glare analysis may need to be repeated if changes are made to the size, shape, or orientation of the PV ESA ECM, as these changes could have an effect on glare. At a minimum, the information required for the analysis includes:

• Location (depicted on map; including address or latitude/ longitude)

• Array orientation and panel tilt

• Module surface material and whether anti-reflective coatings will be used on the PV modules

• PV module layout and size of the array

• *(For rooftop PV ESA ECMs)* Roof height, height of the modules above the roof (highest point)

• *(For ground-mount PV ESA ECMs)* Tracking or fixed configuration, height of the modules above the ground (highest point)

• The runway locations and incoming flight paths/patterns, the air traffic control tower (ATCT) location, and the eye-level height above ground of the ATCT workers.

If the glare analysis shows that the PV ESA ECM glare does not meet acceptable levels, the design shall be modified as much as practicable to minimize glare. If it is not possible to modify the PV ESA ECM design (or move the PV ESA ECM to a different location) to eliminate the glare hazard, the PV ESA ECM will not be included in the TO.

**C.23 Metering and Data Acquisition Specifications**

The electricity generated by the PV ESA ECM shall be measured by a revenue-grade meter to be furnished, installed, maintained, repaired, calibrated, read, and reported by the Contractor at its expense. The revenue-grade meter shall comply with the American National Standards Institute (ANSI) Standard C12.1-2014 and be approved the Government. The meter shall be a solid-state advanced meter with the following features: non-volatile memory capable of storing measured data for 30 days, using an Ethernet port, and meeting the ANSI C12.20 0.5% accuracy standard. The meter shall be installed with the manufacturer’s prescribed current transducers (CTs), in a separate and appropriately NEMA-rated cabinet (if needed).

The meter shall be tested for accuracy and certified in accordance with ANSI C12.20 at the Contractor’s expense. The Government may test the accuracy of the meter at any time at the Government’s expense, and if the accuracy is found to be greater than the 0.5% tolerance standard, the meter shall be replaced or repaired at the Contractor’s expense.

The contractor meter and site data acquisition systems (DAS) require the installation of Contractor owned and operated independent telemetry networks that shall comply with agency cyber-security requirements *(agency insert requirements)*. The Contractor is to establish independent wireless and or wired networks to form communications with the meter and DAS.

*(Agency can use the following language if they do not allow the use of wireless technology and a site network is not available)* The Contractor shall use a hard-line communication or a phone line, a cellular connection, or other means that is 100% independent from the Government network. Any external communication connections must be located at the demarcation point to the public access or general work areas and must not interfere with other Government-used radio frequency networks. The recommended design and installation plans must be approved by the agency. Any required connections shall be made and kept operational over the term of the contract by the Contractor at its expense.

Electricity production and site weather data shall be collected by the Contractor and made available to the agency through a web portal at no additional cost to the Government over the life of the contract term. A minimum of 36 months of data shall be stored by the Contractor and be made available for agency download via the web portal. The data shall at a minimum comprise the following information and frequency of collection.

* Date, time
* Apparent power (kVa)/phase, real power (kW) and Volts on each phase recorded in 15-minute intervals.
* Plane-of-array irradiance either through onsite pyrometer or through satellite information at hourly intervals.
* Ambient temperature, hourly average at hourly intervals, either from on-site measurements or a reliable climate data service.
* Wind speed at the array, at hourly intervals (optional, not required for performance assessment).
* The web-based monitoring system shall report actual system performance and an estimate of expected performance (based on measured irradiance and temperature).

**C.24 Roof Mounted PV ESA ECM Structural Analysis and Design Requirements (if applicable)**

*(It is recommended that the structural analysis be completed during the IGA. Add additional roof structural analysis and/or design requirements based on the roof warranty here or elsewhere.)*

The Contractor shall conduct a structural analysis of each existing roof and design the PV ESA ECM to ensure that the existing roof has sufficient structural integrity to support the PV ESA ECM. Structural design and analysis for roof-top PV ESA ECM arrays shall comply with American Society of Civil Engineers (ASCE-07) and Structural Engineers Association of California - SEAOC [PV2-2017 “Wind Design for Solar Arrays.”](https://www.seaoc.org/store/ViewProduct.aspx?id=10228815) Any upgrades to existing roof structures required to support the new PV ESA ECM(s) shall be the responsibility of the contractor.

The design and installation of the PV ESA ECMs shall not compromise any existing roof warranties. The Contractor shall design the PV ESA ECMs to keep building penetrations to a minimum. Where roof penetrations cannot be avoided, they shall be properly sealed.

**C.25 Vegetation Management**

The contractor is responsible for maintaining (mowing, trimming, etc) any vegetation adjacent to the PV ESA ECM required to prevent shading on or damage to the PV ESA ECM. Vegetation shall be selected and maintained to minimize the risk and spread of fire. Ground-cover and water drainage shall be detailed in the design submittals. Ground-cover alternatives shall be appropriate for the site and climate; and shall be included as part of the contractor’s Final Proposal.

*(Agency may consider adding language regarding bee/pollinator-friendly vegetation management.[[8]](#footnote-8) Contact your* [*FPE*](https://www.energy.gov/eere/femp/energy-savings-performance-contract-federal-project-executives-0) *for assistance.)*

**SECTION D - PACKAGING AND MARKING**

(Insert any agency/site specific requirements if applicable.)

**SECTION E - INSPECTION AND ACCEPTANCE**

The contractor shall comply with the current version of the FEMP ESPC ENABLE **09\_Guidelines and Checklist for Commissioning and Government Acceptance**.

(Insert any agency/site specific requirements if applicable.)

*For PV ESA ECM:*

*(Specify steps required before the agency accepts the PV ESA ECM, including interconnection agreement execution and utility permission to operate.)*

**SECTION F – DELIVERIES OR PERFORMANCE**

TOs issued by agencies may be for a term up to and including twenty-five (25) years.

*For PV ESA ECM:*

The term of the PV ESA ECM cannot exceed 20 years in length, per IRS Revenue Procedure 2017-19 Section, 4.02(1).

(Insert any agency/site specific requirements if applicable.)

**SECTION G - TASK ORDER ADMINISTRATION**

**G.1 PAYMENT TO THE GOVERNMENT FOR GUARANTEED ANNUAL SAVINGS SHORTFALL**

G.1.1 - If the contractor fails to meet the guaranteed annual savings at TO-1 (final) column (e) and as verified by the M&V documents, the agency shall adjust the payment schedule, as necessary, to recover the agency’s overpayments in the previous year and to reflect the lower performance level into the current year.

G.1.2 - When the ECM performance level is restored, the agency will adjust the contractor payment schedule accordingly.

*For PV ESA ECM (Sections G.1.3-G.1.6):*

**G.1.3 Guaranteed Annual Production.**

Contractor guarantees annual PV ESA ECM production as set forth in Schedule 1a (see Attachment J-2) herein. The first Production Year begins on the day after acceptance and shall continue for twelve full calendar months thereafter, and each subsequent Production Year shall be for twelve calendar months thereafter. The last Production Year shall end at the PV ESA ECM term. The Actual Annual Production shall be adjusted as appropriate and subject to CO approval, for Excused Production (see Section G.1.5) to determine if the Guaranteed Annual Production level has been met. *(The agency and Contractor may consider normalizing the Actual Annual Production based on actual (vs. average) solar insolation.)*

The agency agrees to purchase one hundred percent (100%) of the PV ESA ECM production during the TO term, even if the electricity generated exceeds the Guaranteed Annual Production.

**G.1.4 Unforeseeable Events**

The Parties hereto acknowledge and agree that certain events and actions, foreseen and unforeseen, outside of the control of the Contractor can have an impact on the Actual Annual Production. Foreseeable events, such as normal wear and tear need to be factored into the Guaranteed Annual Production. Unforeseeable Events that are outside the control of the Contractor or the third-party PV ESA ECM owner (see Section H.2.1) shall be taken into consideration in calculating the Contractor shortfall payment in the event that the amount of the Actual Annual Production is less than the Guaranteed Annual Production. Unforeseeable Events include *(agency include all that apply and add other potential Unforeseeable Events)*:

(i) PV ESA ECM failure, damage or downtime attributable to entities other than the Contractor or third-party PV ESA ECM owner,

(ii) any electric utility outage *(add competitive energy supplier and/or other suppliers such as Western Area Power Administration as applicable)*,

(iii) agency requested PV ESA ECM outages due to agency activities or disturbances caused by the agency,

(iv) causes beyond the control and without the fault or negligence of the Contractor or the third-party PV ESA ECM owner that are “Force Majeure Events” as defined in FAR 52.249-8 and as determined by the CO,

(v) shading that is government caused,

(vi) theft,

(vii) vandalism,

(viii) curtailment to prevent export *(include if applicable)*,

(ix) other (requires CO approval)

**G.1.5Excused Production**

The Excused Production is the total amount of energy the PV ESA ECM, as measured in kWh, did not generate due to Unforeseeable Events (during daylight hours only) as defined in G.1.4. The Excused Production shall be calculated using the following methodology:

(i) Use the actual weather-related data available through the PV ESA ECM’s monitoring equipment. If this data is not available, then use satellite data, other available data or interpolated data from the nearest location with solar insolation data.

(ii) Calculate expected production assuming the PV ESA ECM is fully operational using the PV production monitoring equipment and a performance model such as the System Advisor Model (SAM), PV Watts (available at [www.nrel.gov/sam](http://www.nrel.gov/sam) and www.nrel.gov/pvwatts) or other; subject to approval by the government (see Section C.23).

(iii) Reduce the expected production if part of the PV ECM is underperforming or not operable (not producing electricity under normal conditions). The remaining value is the Excused Production.

Excused Production is only used to determine if the Guaranteed Annual Production is met, the agency shall not be responsible for paying for energy which has not been produced.

The Contractor shall provide the proposed Unforeseeable Events and Excused Production in a table format with the date, hours when the PV ESA ECM was not operating (daylight hours only), the type of Unforeseeable Event, the Excused Production and the method for calculating the Excused Production. The information shall be provided on an annual basis concurrent with the Contractors’ annual M&V report, for CO approval. If the CO approves, the Excused Production shall be used in the Guaranteed Annual Savings Shortfall calculation (see Section G.1.6). Otherwise the CO shall work with the Contractor to develop revised Unforeseeable Event/Excused Production information that is acceptable to both Parties.

## **G.1.6** **Guaranteed Annual Savings Shortfall Calculation**

If the Adjusted Annual Production (Actual Annual Production adjusted for Excused Production and solar insolation as appropriate) is less than the Guaranteed Annual Production in any Production Year (an “annual shortfall”), then Contractor shall owe the Government an amount equal to the positive difference between the Guaranteed Annual Production minus the Actual Annual Production for such Production Year with the result multiplied by the positive difference, if any, between the Current Cost of Energy minus the Annual ESA Price, for such Production Year. Any amount(s) owed by Contractor for an annual shortfall shall be applied as a credit against the immediate subsequent monthly invoice(s) to the Government until such credit is exhausted.

Adjusted Annual Production = Actual Annual Production – Excused Production - Solar Insolation Adjustment (if any)

Amount owed for annual shortfall (if any) = (Guaranteed Annual Production –Adjusted Annual

Production) x (Current Cost of Energy – Annual ESA Price).

**G.2.** Administration of Contract -Administration of the Contract shall be accomplished by the (insert agency name). The following individuals are responsible for Contract administration as follows:

1. **Agency Contracting Officer (CO) -** The Contracting Officer for this Contract is XXXXX, telephone no.: XXX-XXX-XXXX; fax no.: XXX\_XXX\_XXXX; email: XXX. The Contractor shall use the CO as the focal point for all matters regarding this Contract except technical matters.
2. Agency **Contracting Officer Representative (COR) –**

The COR for this Contract is XXX, telephone no.: XXX-XXX-XXXX; fax no.: XXX\_XXX\_XXXX; email: XXX.

The agency and the Contractor shall use the agency COR as the focal point for all technical related matters regarding this Contract.

## **G.3 Invoicing Instructions**

*For PV ESA ECM:*

The Contractor will invoice the Government on a monthly basis for the metered monthly PV ESA ECM kWh Actual Annual Production at the Annual ESA Price shown on Schedule 1a.

(Insert any agency/site specific requirements if applicable.)

**SECTION H - SPECIAL CONTRACT REQUIREMENTS**

## **H.1. Title to, and Responsibility for, Contractor-Installed Equipment (applicable to all ECMs except PV ESA ECM)**

Risk of loss and title to all equipment installed by the Contractor shall transfer to the agency after acceptance by the CO and the agency COR, and shall not relieve the Contractor’s responsibility for ECM performance. Title may, however, be vested in the Contractor, as determined by the agency. The agency shall evaluate the use of financial incentives, such as renewable energy and energy efficiency tax credits and/or other incentives, when deciding whether to allow vesting of title to the Contractor.

*For PV ESA ECM (Section H.2):*

*(Section H.2 should be carefully reviewed and edited by agency legal, contracting and management staff. During the IGA, the Contractor must obtain an appraisal or an estimate[[9]](#footnote-9) of what the PV ESA ECM FMV will be at the end of the contract. The FMV appraisal/estimate will be used to calculate the reserve account payment. Contact your* [*FPE*](https://www.energy.gov/eere/femp/energy-savings-performance-contract-federal-project-executives-0) *for assistance.)*

## **H.2 Novation, Equipment Title, Contractor Reserve Account and PV ESA ECM FMV Title Transfer**

## **H.2.1 Special Purpose Entities and Novation**

The agency recognizes that securing financing may involve the establishment of a limited liability company (LLC) or other type of special purpose entity (SPE). Creation of an SPE under an ESPC ESA requires the execution of a novation agreement by the agency CO and prime contractor to recognize a successor in interest to the agency contract when Contractor assets are transferred to a third-party.

The ESPC statutory authority provides that an agency may enter into an ESPC with an ESCO that is on a qualified list established pursuant to the requirements under 42 U.S.C. § 8287(b)(2)(A). The initial award of an ESPC ESA to a qualified list ESCO satisfies this requirement, even though the newly created SPE may not be on an established qualified list.

Any subsequent agreement that is executed to novate the contract to a SPE must be approved by the responsible CO and must be consistent with all applicable statutory and regulatory requirements. Specifically, the requirement that the transferor (Contractor) guarantees performance of the contract by the transferee (SPE) must be met. See FAR 42.1204(h)(3). Novation agreement approval is at the agency’s sole discretion pending a determination by the CO that the SPE is capable of meeting all contract requirements and obtaining financing.

The planned use of an LLC or other type of SPE should be identified in the Final Proposal.

## *(If this TO is novated, a novation may also be required for the site access agreement.)*

## **H.2.2 PV ESA ECM Title**

Title to all PV ESA ECM equipment installed by the Contractor may be vested to a third-party owner (as noted in Section H.2.1), who may be separate from the Contractor, with notification to the CO and COR. A TO novation may be required if title is vested in a third-party. However, no matter who owns the PV ESA ECM equipment, the Contractor shall still be responsible for the PV ESA ECM performance. See Section H.2.1.

Regardless of which party the title is vested in, neither the Contractor nor a third-party shall have the unilateral right to remove any equipment, installed as part of the project, for the purposes of satisfying a lien or other type of security interest.

Until such time as the agency accepts title to the PV ESA ECM, the Contractor (or a third-party owner) shall be the legal and beneficial owner of the PV ESA ECM. During this time, the system shall be the Personal Property of the Contractor as defined under Article 9 of the Uniform Commercial Code and shall not be deemed as part of, or fixture to, the site. The agency covenants that it will use reasonable commercial efforts to place all parties having an interest in the Contractor’s (or third-party owner) property located on the site on notice of the ownership of the PV ESA ECM and the legal status or classification of the PV ESA ECM as Personal Property. The agency is the owner of the site and consents to the filing of a disclaimer of the PV ESA ECM as a fixture of the site in the office where real estate records are customarily filed in the jurisdiction of the site until such time that the agency accepts title to the PV ESA ECM.

Title to the PV ESA ECM shall be transferred to the agency for FMV, determined by the methodology specified in Section H.2.5, by the end of the contract. Funds necessary for this title transfer must be generated from a specified portion of the scheduled payments that are transferred to a reserve account held by the Contractor.

### **H.2.3 Contractor Reserve Account Fund Uses and Management**

## *(This section contains optional sample language regarding the management and use of the reserve account funds. The CO may include a clause requiring CO approval of all reserve account fund expenditures.)*

Upon receipt of the Government’s monthly payment to the Contractor (product of monthly kWh production and the Annual ESA Price), a specified portion of such payment shall be deposited into the reserve account, based on the initial FMV appraisal/estimate. The Reserve Account Payments are shown on Schedule 1a. The reserve account shall be held by a third-party financial institution acceptable to the Contractor and CO.

The Contractor’s reserve account funds are intended for the following uses only: FMV title transfer, applied by the Contractor to final TO payments, a contract modification (i.e. additional equipment) and/or termination liability. In the case of termination, disbursement from the Contractor’s reserve account fund shall be negotiated through the termination settlement process, in accordance with FAR 52.249-2.

The Contractor shall submit an annual statement showing all reserve account transactions to the CO as part of the annual M&V report. All costs of administering the Contractor’s reserve account shall be borne by the Contractor, rather than being taken out of the reserve account funds.

Any funds in the Contractor reserve account in excess of the PV ESA ECM FMV may, at the Contractor’s option, be applied by the Contractor to offset the final TO payment(s). The Contractor is required to bring the reserve account to a zero balance at the end of the Contract. The Contractor and the agency retain the right to audit the reserve account during the Contract term and for a period of two (2) years thereafter.

### **H.2.4 FMV Appraisal/Estimate Updates**

## *(Modify the following paragraph based on the desired FMV re-appraisal intervals, the selection criteria for the entity that will conduct the appraisals and the associated credentials, and who will be responsible for the appraisal costs. Hiring one company to conduct all the appraisals may reduce costs, since subsequent appraisals should just involve an update to the initial appraisal.)*

An updated FMV appraisal/estimate shall be made at the following intervals *(list desired intervals such as years 5, 10 and 15)*. If needed, the contract length[[10]](#footnote-10) and/or agency’s payment to be allocated to the Contractor’s reserve account shall be increased or decreased, through a contract modification. This will ensure that the Contractor’s reserve account has sufficient funds to reach the FMV of the PV ESA ECM before title transfer to the agency. The agency may require additional FMV appraisals if the differential between the prior FMV appraisal and the current FMV appraisal is greater than 25%.

The methodology for the FMV appraisals/estimates shall be proposed by the Contractor, with approval by the agency. The FMV appraisal or estimate costs shall be borne by the Contractor.

### **H.2.5 Determination of Final FMV**

At least six months prior to the end of the contract the final PV ESA ECM FMV appraisal shall be made. This FMV will be determined by a mutually agreed upon independent appraiser with expertise in the PV industry. Such appraiser shall act reasonably and in good faith to determine the PV ESA ECM FMV and shall set forth such determination in a written opinion delivered to the Parties. The valuation made by the appraiser shall be binding upon the Parties in the absence of fraud or manifest error. The cost of the appraisal shall be borne by the Contractor.

The final FMV amount shall be compared to the Contractor’s reserve account balance. If there is a shortfall; the agency shall ensure that there will be sufficient funds by the end of the contract by one or more of the following:

1. Increase reserve account payment.
2. Increase the contract length.
3. Use agency funds, subject to availability of appropriations.

A contract modification may be required.

#### H.2.6 Title Transfer of the PV ESA ECM for FMV

By the end of the contract, the agency shall accept title to the PV ESA ECM from the Contractor at FMV, as determined per Section H.2.5, using the funds in the Contractor’s reserve account.

Upon title transfer, the Parties will promptly execute all documents necessary to (A) cause title to the PV ESA ECM to pass to the agency, free and clear of any encumbrances (e.g. liens), (B) assign all warranties for the PV panels and other PV ESA ECM equipment to the agency.

**H.3 Final Proposal Requirements**

**A. Project Overview (length: 2 pages maximum)**

1. Executive Summary - As a minimum, a narrative description of the project summarizing the ECMs *(including the PV ESA ECM)*, the energy, water, and related cost and unit savings, implementation price and financial summary.

2. Site Description and Utility Summary - For the site, the contractor shall submit narrative information for items, as applicable, in the format specified below:

a. Site Description *may* include:

i. Overview, size, location, etc.

ii. Description of for example, mission, commands, agencies on the site, general operations, occupancy.

iii. Map of site showing major areas/designations.

iv. Building/facility list, name/number, type of facility, square footage, hours of operation.

vii. Facility descriptions (for those buildings included in the ESPC). General description of building condition and operations including overview of energy and water consuming systems.

b. Utility Summary

i. Overview/description of current utility systems on site: electrical, natural gas, fuel oils, water, sewer, etc. Include site diagrams/maps, as available.

ii. Description of metering systems for each utility.

* Utility/revenue meters.
* Sub-meters, advanced metering systems, as applicable.

**B. Volume I - Technical Proposal (length: see sub-sections)**

1. ECM description (length: 3 pages max per ECM) - For each ECM proposed, the contractor shall submit narrative information for items as applicable, in the format specified below:

a. ECM description (existing conditions, proposed upgrades).

b Location affected

c. Energy baseline

d. ECM projected energy use and applicable cost(s)

e. Proposed equipment identification including manufacturer, model number and optional equipment proposed for each ECM component. (may be presented as appendices and excluded from page limit). *For PV ESA ECM include module and inverter efficiency.*

f. ECM project schedule – Provide a detailed project schedule to include the duration of the following key phases:

i. Equipment procurement lead time (i.e., date required to place order for equipment for delivery on-site by specified date.)

ii. Installation, commissioning, post-installation M&V and post installation report dates.

iii. Project acceptance date.

## *For the PV ESA ECM, the contractor shall submit a description (for each proposed PV ESA ECM) that includes, but is not limited to:*

1. Estimated size
2. Rack configuration (tilt, orientation, fixed vs. tracking)
3. PV array location (roof or ground area)
4. Land or other required modifications (tree removal, replacement tree requirement, other)
5. PV module type and source (what country)
6. Inverter configuration (micro-, string, central)
7. Inverter type and source
8. Inverter location(s)
9. Estimated first year electricity production and how it was calculated (weather file and program (PV Watts, PV Syst, other) used
10. Annual production degradation rate
11. What site electrical circuits and meter(s) will be served
12. Whether net metering will be required
13. Interconnection plans (see Section C.21)
14. Detailed design drawings including set-backs, pathways for fire protection, etc.
15. Any unique considerations

2. ECM Performance Measurement

1. The M&V plan shall be completed using the provided FEMP ENABLE **08\_M&V Plan Template**. *The PV ESA ECM shall use M&V Option B.*

Where calculations are done using simulation tools (EnergyPlus, eQuest, etc.) the Contractor shall provide input and output files sufficiently detailed and explained to allow for technical review. The name, versions and issue date shall also be provided for the software. Additionally, schedules and support calculations (utility rates, etc.) will be provided in .pdf and MS Excel electronic format to facilitate their review.

When calculating baseline energy rates, consideration should be should be given to the complexities of the actual rate tariff and those components of the baseline utility bill that a PV ESA ECM project would save. Consideration should also be given to changes to the utility rate structure that may be precipitated by installation of the PV ESA ECM.

b. ECM Commissioning Approach – The contractor shall prepare an ECM Commissioning Approach for each of the proposed ECMs based on the FEMP ENABLE **09\_Project Commissioning & Acceptance Guide and Checklist**.

3. Management Approach (length: 2 pages maximum)

1. Organization -Show the organization for implementing and managing the TO through the use of an organizational chart. The proposed organization shall contain the responsibilities of each element shown on the organization chart. Identify personnel integral to the performance of the ESPC project, by name within each element. Show the lines of authority within the organization. If portions of the project are to be subcontracted (e.g., installation of an energy conservation system), identify the subcontracted function, and which element of the contractor’s organization will manage the subcontract(s).
2. Risk Responsibility and Performance Matrix - The Contractor shall complete and submit a Risk, Responsibility and Performance Matrix detailing its proposed approach or method to address each area in the matrix. The format and content for the Risk, Responsibility and Performance Matrix is provided in **Attachment J-1**.

**C. Volume II - Price Proposal** - The selected contractor shall complete financial Schedules 1, 2, 3, 4 (populated by results from FEMP ENABLE IGA Audit Tool when possible) and 5 and shall provide supporting documentation listed below. The contractor is required to submit project-level financial and energy-savings information into the eProject Builder (ePB) online system, which will then generate the full set of Task Order financial schedules. The data requirements are specified in on the ePB website and may be amended from time-to-time. Please see: <https://eprojectbuilder.lbl.gov> *(for the PV ESA ECM please see below for guidance on completing the financial schedules)*.

The Contractor and agency points of contact must register for user accounts on the ePB. To register for ePB, please email [epb-support@lbl.gov](mailto:epb-support@lbl.gov) and request an account. In the email, please provide your full contact information: name, organization, title, email, phone number, street address. The agency point of contact initiates the project (it takes about a minute).

The Contractor provides the agency the financial data on the data upload template prior to award. The Contractor uploads the template to the database after the project has been negotiated and awarded. It is recommended that the Contractor and agency points of contact attend an ePB interactive training webinar.

For additional information, please see <https://eprojectbuilder.lbl.gov> or contact ePB support at [epb-support@lbl.gov](mailto:epb-support@lbl.gov).

*For PV ESA ECM:*

The Contractor shall complete Schedule 1a (see Attachment J.2), in addition to financial Schedules 1-5.

Recommendations for completing the financial schedules and using ePB with a PV ESA ECM:

The Contractor may consider using non-ePB financial schedules during the project development process prior to award, and then upload the financial data to ePB post award using the ePB override template.

The ePB calculating template does not accommodate an ESPC project with a PV ESA ECM. The ePB override template must be used to upload the data into the ePB database. The override template does not perform any calculations.

Summary Schedule (this only applies if the PV ESA is the only ECM)   
Since you are purchasing energy at an agreed upon rate a number of fields are not necessarily applicable. Contact your FPE for SOW edit recommendations if the ESA ECM will be bundled with other ECMs.  
  
Escalation schedule   
The schedule rounds the escalation rate to two decimal places.

Schedule 1 Cost Savings and Payments

Recommend adding two columns and breaking out the Total Annual Payments into annual ESA payments” and "Annual Payments other ECM(s)".All values are entered manually. There are no ePB calculated values.

Schedule 2a & b – Implementation Price by ECM/Project Implementation Pricing Worksheet  
Schedule 2a & b are not applicable for the PV ESA ECM. They may be populated by the contractor if required by the government.

Schedules 2a & b are applicable for all other ECMs in project scope.  
  
Schedule 3 Performance Period Cash Flow  
Add a line item for the annual ESA payments and include the ESA payments in the Total Annual Payments row.  
  
Schedule 4 First Year Estimated Cost Savings by ECM  
Select M&V option (B), and fill out columns b1, b2, l, m and n.  
  
Schedule 5 Cancellation Ceilings  
These values are all manual entry. No special guidance for the PV ESA ECM.

In addition to the submission of TO schedules and supporting documents, the contractor shall provide information on how financing was competitively selected (desire is for ESCO to solicit a minimum of 3 bids).

*For PV ESA ECM:* Include the appraisal or estimate of what the PV ESA ECM FMV will be at the end of the contract, the methodology for determining the FMV (including assumptions), the resulting reserve account payment and how the reserve account payment was calculated.

**D. Individual Small Business Subcontracting Plan** – In the event the selected contractor meets the prescription of FAR 52.219-9, the selected contractor shall prepare and submit the required document.

## **H.4 Payment and Performance Bond Requirements**

(Insert any agency/site specific requirements if applicable*, including requirements that are specific to the PV ESA ECM*.)

**H.5 Site Access**

*For PV ESA ECM:*

*(A separate site access agreement (such as a license, easement, lease or other) could be included as an attachment. If so, review these clauses and determine if they belong in this SOW document and/or the site access agreement. Another option is to use the FAR 52.241-5 Contractor’s Facilities clause which provides that the Government may grant a revocable permit or license and is allowable under FAR Part 41.501(c)(4).)*

The agency authorizes the Contractor to install, own, repair, operate and maintain the PV ESA ECM on agency *(roof/land/parking lots)* and allow its agents and employees the right to enter the agency real property in order to access the *(roof/land/parking lots)* upon which the PV ESA ECM(s) are located, subject to the limitations specified in this Contract *(add if applicable: “and in accordance with FAR 52.241-5, Contractor’s Facilities, which grants the license”)*. It is expressly agreed upon, acknowledged, and understood that the *(agency)* may limit or restrict the right of access herein granted in any manner considered to be necessary for national security and/or agency mission, or in the event that this Contract is terminated.

Site access must be arranged *(x)* weeks in advance, although agency may permit access with less notice at their sole discretion. If power outages or other disruptive activities are planned, these will require the approval of the agency COR at least *(x)* weeks in advance and be at a time acceptable to the agency (generally outside of normal working hours). Construction and O&M of the PV ESA ECM shall be performed in such a way as to avoid impact to agency activities, or cause any damage to the *(land, building/roof, parking lot)*.

This access shall continue for a reasonable period following the period of performance (up to 180 days) if it is necessary. The parties agree that if the agency denies the Contractor reasonable access over a period of time during the period of performance, the TO maybe terminated and the parties will have the same rights as if the TO is terminated for convenience as per Section I.

It shall be the Contractor's responsibility, through the COR, to obtain access to Government buildings *(if needed for roof-top systems and/or modify for ground-mount/carport systems)* and to arrange for each room/area to be opened and closed as necessary in performance of TO requirements.

The Contractor shall be responsible for safeguarding all Government property and securing facilities, equipment, and materials at the end of each work period.

(Insert any agency/site specific requirements if applicable.)

## **H.5.2 Solar Easement**

The agency will take reasonable steps as necessary within its control to prevent other buildings and structures (outside of the PV ESA ECM) from overshadowing or otherwise blocking access of sunlight to the PV ESA ECM. If the agency takes actions that result in permanent shading of the solar array, and the Contractor is harmed thereby, such event shall be governed by FAR 52.212-4 paragraph (d), Disputes if the Parties are unable to reach a negotiated agreement.

The Contractor, with agency assistance, is responsible for obtaining solar access rights from any other landowners adjacent to the site.

**H.6 Required Insurance for this Contract**

(Insert any agency/site specific requirements if applicable*, including requirements that are specific to the PV ESA ECM.*)

**SECTION I - CONTRACT CLAUSES**

(Insert any agency/site specific requirements if applicable.)

*For PV ESA ECM:*

*(See Schedule 5 Annual Cancellation Ceiling Schedule, which is a presentation of monthly and annual cancellation ceilings to establish the maximum termination liability in the event of contract cancellation or termination. Actual termination charges will be negotiated as part of any cancellation or termination settlement, per established FAR requirements.)*

**SECTION J - LIST OF ATTACHMENTS**

J-1. Risk Responsibility and Performance Matrix

J-2. Schedule 1a ESA Payments

(Insert any agency/site specific requirements if applicable.*)*

**Attachment J-1**

**Risk Responsibility and Performance Matrix**

*See separate document*

**Attachment J-2**

**Schedule 1a - ESA Payments**

Contractor Name:

Project Site:

Reserve Account Rate (cents/kWh)[[11]](#footnote-11):

Annual ESA Escalation Rate (%):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Col (1)** | **Col (2)** | **Col (3)** | **Col (4)** | **Col (5)** | **Col (6)** |
| **Post-Acceptance Production Year** | **Annual ESA Price (cents/kWh, escalates at annual ESA Escalation Rate, if applicable)** | **Guaranteed Annual Production (kWh)** | **Annual ESA Payment ($)[[12]](#footnote-12)** | **Reserve Account Payment**  **(Rate Above x Col 3)** | **Net ESA Payment to Contractor After Reserve Account Payment (Col 4 - Col 5)** |
| **One** |  |  |  |  |  |
| **Two** |  |  |  |  |  |
| **Three** |  |  |  |  |  |
| **Four** |  |  |  |  |  |
| **Five** |  |  |  |  |  |
| **Six** |  |  |  |  |  |
| **Seven** |  |  |  |  |  |
| **Eight** |  |  |  |  |  |
| **Nine** |  |  |  |  |  |
| **Ten** |  |  |  |  |  |
| **Eleven** |  |  |  |  |  |
| **Twelve** |  |  |  |  |  |
| **Thirteen** |  |  |  |  |  |
| **Fourteen** |  |  |  |  |  |
| **Fifteen** |  |  |  |  |  |
| **Sixteen** |  |  |  |  |  |
| **Seventeen** |  |  |  |  |  |
| **Eighteen** |  |  |  |  |  |
| **Nineteen** |  |  |  |  |  |
| **Twenty** |  |  |  |  |  |
|  |  |  |  |  |  |
| **Totals** |  |  |  |  |  |

1. Some template language is generic and applies to all renewable technologies, while other language is specific to PV. Contact FEMP for assistance if you would like to pursue an ESA with a renewable technology other than PV. [↑](#footnote-ref-1)
2. The ESPC ESA financing mechanism allows an ESCO to use a reserve account (not an escrow account held by both parties to the contract). This is an accounting measure for the ESCO. The funds in the account belong to the ESCO, not to the Federal Government. [↑](#footnote-ref-2)
3. Available at <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2012/m-12-21.pdf> [↑](#footnote-ref-3)
4. Published in the Internal Revenue Bulletin on February 13, 2017, see https://www.irs.gov/pub/irs-irbs/irb17-07.pdf. [↑](#footnote-ref-4)
5. See REC Tracking System information at https://www.epa.gov/greenpower/renewable-energy-tracking-systems. [↑](#footnote-ref-5)
6. https://www.federalregister.gov/documents/2013/10/23/2013-24729/interim-policy-faa-review-of-solar-energy-system-projects-on-federally-obligated-airport [↑](#footnote-ref-6)
7. Forge Solar’s GlareGauge tool (<https://www.forgesolar.com/>) [↑](#footnote-ref-7)
8. See [Solar Site Pollinator Habitat Assessment Form in the Minnesota Board of Water and Soil Resources Pollinator Plan](http://www.bwsr.state.mn.us/practices/pollinator/pollinator-plan.pdf), Appendix B for information. [↑](#footnote-ref-8)
9. An appraisal would be done by a certified appraiser and is more expensive than an estimate. [↑](#footnote-ref-9)
10. The contract length can only be extended up to 20 years. [↑](#footnote-ref-10)
11. The agency can specify the reserve account payment based on an estimated FMV. The reserve account rate may be constant or escalated at a specified escalation rate. Contact your [Federal Project Executive](https://www.energy.gov/eere/femp/energy-savings-performance-contract-federal-project-executives-0) (FPE) for assistance. [↑](#footnote-ref-11)
12. The agency will pay for Actual Annual Production. Column 4 depicts agency minimum payment assuming the Guaranteed Annual Production requirement is met. [↑](#footnote-ref-12)