



# Energy Services Proposal – Exhibit A

Prepared for City of Fort Bragg



**Presented by:**  
Syserco Energy Solutions, Inc.

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# Executive Summary

City of Fort Bragg (City) selected Syserco Energy Solutions, Inc. (SES), a qualified energy services company and design-build contractor, to develop and implement a comprehensive design-build energy services project. The scope of work for this project includes Solar Photovoltaic at multiple city-owned facilities.

The process of developing the energy conservation measures for the City involved performing an Investment Grade Audit (IGA) of the City’s identified facilities. The IGA established a historical energy use baseline and identified facility improvement and ECMs that address the primary objectives of the City’s facilities staff.

We are pleased to present the following energy efficiency and facility enhancement project proposal to the City. This proposal represents the scope of work, approved by the City, and shall result in electrical savings for City.

The primary objective of this project is to implement ECMs that maximize energy savings, generate operational savings, and reduce environmental impact.

The following priorities were identified by the City as the most crucial items to address in this project:

- Reduce energy consumption and utility cost across City-owned infrastructure.
- Reduce overall City greenhouse gas emissions (GHGs).

The table below outlines the firm-fixed project cost and estimated grants and incentives, resulting in the expected net project cost to the City.

<b>Estimated Project Cost</b>	<b>\$ 7,501,224</b>
Estimated IRA Investment Tax Credit	\$ 1,811,389
Estimated Low-Income Bonus	\$ 603,796
<b>Net Project Cost</b>	<b>\$ 5,086,039</b>

30-year cumulative savings is \$20,642,642.<sup>1</sup>

<sup>1</sup> Based on 5.8% estimated annual electrical cost escalation.

# Section 1 – Introduction

We are pleased to present this Energy Services Proposal (“Proposal” or “ESP”) to City of Fort Bragg(City) for the purpose of implementing the recommended energy conservation measures (ECMs) as approved by the City’s staff. In implementing this project, the City will achieve improved occupant comfort and reduced utility consumption. As such, this project will reduce ongoing maintenance costs, thus providing operational cost savings.

To develop the recommended project, our experienced energy engineers, project managers, and project developers examined existing systems and equipment through a detailed energy and operational audit of the City's facilities to determine the full potential for savings. This Proposal is a culmination of our audit findings, recommended measures, infrastructure enhancements, operational savings, and overall cost reductions. We have investigated multiple means for accomplishing this goal including retrofitting equipment, installation of new devices, and employing enhanced strategies to improve operational efficiency.

## 1.1. Team Effort

We would like to thank members of the City’s staff and facilities team who worked closely with our team throughout this process. Without their assistance, this project would not have been possible.

## 1.2. Approach

The project development process involved numerous site visits, interaction with City administration and facilities staff, a detailed analysis of existing equipment and systems, current utility consumption, and any available logs and profiles of equipment. Studies of energy usage, operating conditions, and interviews with the City’s facility team have been valuable sources of information, contributing greatly to this effort. We have taken into consideration the input provided by staff and have integrated the various infrastructure needs of the City by compiling the proposed ECMs.

## Section 2 – Scope of Work Overview

### 2.1. Energy Conservation Measure (ECM) Summary

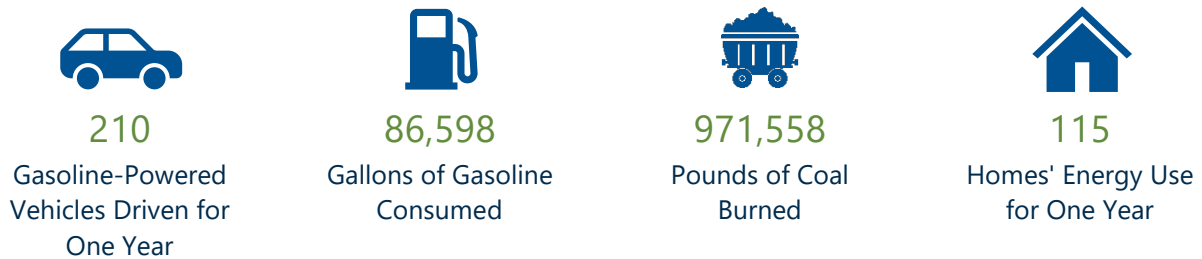
For detailed descriptions of the scope of work, please refer to *Section 3 – ECM Descriptions and Detailed Scope of Work*.

#### 2.1.1. Savings by ECM

The following table depicts cost savings and emissions reductions per proposed ECM.

ECM #	ECM Description	Electric Savings (\$/yr)	Emissions Savings (mtCO <sub>2</sub> /yr)
11.01	Install Solar PV System	\$356,856	882
	<b>Total <sup>1</sup></b>	<b>\$ 356,856</b>	<b>882</b>

For comparison, **882 metric tons of Carbon Dioxide (CO<sub>2</sub>)** equivalent to greenhouse gas emissions from:



<sup>1</sup> Projected energy reduction and cost avoidance figures are calculated based upon existing building occupancy, operation, and stipulated assumptions of performance. All calculations are based upon industry best practices and methodologies.

## 2.1.2. Savings by Site

The following table displays the description of energy savings per proposed site.

Site Name	Elec Production (kWh/yr)	Elec Cost Savings (\$/yr)	Total Cost Savings (\$/yr)
Fire Station	31,120	\$13,786	\$13,786
Wastewater Treatment Plant	446,316	\$90,462	\$90,462
Police Station	65,051	\$21,226	\$21,226
CV Starr Community Center	495,347	\$133,871	\$133,871
City Hall	53,084	\$24,016	\$24,016
Corp Yard / WTP	171,010	\$73,495	\$73,495
<b>Total</b>	<b>1,261,928</b>	<b>\$356,856</b>	<b>\$356,856</b>

The projected energy production and cost avoidance figures were calculated based upon existing building occupancy, operation, and stipulated assumptions of performance. Legacy utility billing was derived from city-generated reports and data provided directly by Pacific Gas & Electric (PG&E). All calculations are based on industry best practices and methodologies.

## 2.2. Clarifications

### 2.2.1. Clarifications

- There will be two (2) working shifts, a first shift in the morning/early afternoon hours, and a second shift for late afternoon/evening hours.
- We will work closely with City staff to identify any areas that may require after-hours work. We will review the project schedule with City staff to ensure mutual agreement is reached regarding site access and City-approved work in occupied spaces.
- The City shall provide all required static IP addresses and ethernet drops for equipment where applicable and required.
- The City shall provide a laydown and storage area during the construction period.
- It is assumed that the existing electrical circuit breakers and disconnects are working in good order and are fully functional.
- The City shall provide electrical power to operate electrical construction tools and equipment.
- Our proposal is based on reusing existing electrical circuits unless specifically stated in the detailed scope of work.
- It is assumed proper grounding exists for all electrical equipment.
- The City will provide our team with six (6) sets of master keys during the construction period.

## 2.3. Extent of Subcontracting

We may subcontract portions of work related to this contract to licensed and qualified companies including equipment installation, start-up, and training.

## 2.4. Project Schedule

As a predecessor milestone, the initial construction schedule start date is based on the execution of the contract. The projected overall project implementation schedule will be developed by our project manager and reviewed with City staff during the construction kickoff meeting.

# Section 3 – ECM Descriptions & Detailed Scope of Work

## 3.1. Introduction

The following section is a detailed description of proposed ECM. Description includes the existing and proposed conditions, planned scope of work, and any impacts to operations and/or maintenance.

### 3.1.1. Detailed Scope of Work for Energy Efficiency Project

#### ECM 6.05 – Roof Replacement

##### General Intent

Police Station is receiving Solar PV modules attached to existing roof. Since PV modules are 30-year asset and the existing roof is in poor condition, we have been asked to include a full roof replacement.

When there is evidence of degradation and damage to roofs, water leaks can occur resulting in damage and loss of energy. By replacing the roofing systems with new roofs leaking water damage will be prevented.

##### ECM Benefits

A full shingle roof replacement will be carried out on the roofing systems with subsurface repairs as needed. New roofs will be warranted for thirty (30) years (composite sloped roofs)

##### Impacted Equipment

Site Name	Approx. SqFt
Fort Bragg Police Station	10,000

##### Scope of Work Inclusions

- Demolish existing shingles down to wood deck as well as associated sheet metal and gutters.
- Install new self-adhered underlayment.
- Install new 30 year architectural shingle and associated sheet metal.
- Install new aluminum gutters.
- Install new flue vents.
- Verify waterproofing of new roof with Solar attachments.

##### Exclusions

- Carpentry wood replacement for damaged decking or fascia.



## Renewable Energy Systems

### ECM 11.01 – Solar Photovoltaic System (Solar PV)

#### Existing Conditions and General Intent

The designs of the new solar arrays were developed to offset as much of City’s overall electricity use and costs from Pacific Gas and Electric (PG&E) and Somona Clean Power (SCP) as feasible.

Equipment location, identification, and selection is the result of our detailed review of the sites, the City’s building plans, specifications, physical equipment arrangements, and discussions with the City’s personnel. These new solar PV arrays are intended to reduce the annual true-up energy consumption and cost relative to the Pacific Gas & Electric bills.

This project will design, furnish, and install new solar PV roof mount, ground mount, and carport shade structure systems at various City sites. These new systems will bring each site close to a net zero energy balance relative to the grid-purchased electrical energy.

#### ECM Benefits

The benefit to the City is a reduced electrical need by providing solar production on site to offset the volume of electrical energy purchased from the grid.

#### Impacted Equipment

Site Name	Nominal Array Size (kW_DC)	Nominal System Size (kW AC)	Target Array Production (kWh)	Mounting Type
Police Station	46	50	65,051	PV Roof Mount
Fire Department	22	17	31,120	PV Roof Mount
CV Starr Community Center	372	332	495,347	PV Carport
Corporate Yard / Water Treatment Facility	127	120	171,010	PV Shade Structure
City Hall	40	34	53,084	PV Carport
Wastewater Treatment Plant	327	280	446,316	PV Shade Structure
<b>Total</b>	<b>934</b>	<b>833</b>	<b>1,261,928</b>	

Police Station – 46 kWdc – 65,051 kWh – PV Roof Mount



Fire Department – 22 kWdc – 31,120 kWh – PV Roof Mount



CV Starr Community Center – 372 kWdc – 495,347 kWh – PV Carport



Corporate Yard / Water Treatment Facility – 127 kWdc – 171,010 kWh – PV Shade Structu22



City Hall – 40 kWdc – 53,084 kWh – PV Carport



Wastewater Treatment Plant – 327 kWdc – 446,315 kWdc – PV Shade Structure



### Assumed Conditions

1. All work will be performed during regular work hours (Mon-Fri 7:00 a.m. – 3:30 p.m.).
2. All field craft labor will comply with prevailing wage requirements and current California Department of Industrial Relations (DIR).
3. The City shall provide all IT support required for the installation of solar PV and interface systems for this project.
4. All structural engineering related to the support of equipment as identified is included. All structural work related to the construction of the canopy and ground mount structures is included. All structural work related to the mounting of rooftop systems is included. Any required upgrades to the existing roof structures determined after detailed structural engineering is performed are excluded.
5. The City shall provide a laydown and storage area during the construction period.
6. All permit drawings and permit fees required for the execution of the work are included.
7. The City shall provide electrical power to operate electrical construction tools and equipment.
8. Pricing is based on a single-mobilization project, multiple phases or extensions to schedule may constitute a change in scope and project schedule.
9. All carport solar PV structures shall include LED lighting, as required by code.
10. Any tree removal necessary for installation of new carport solar PV is included at following sites:
  - a. C.V. Starr Community Center
  - b. Corporate Yard/ Water Treatment Facility
11. Coastal commission approval of final Wastewater Treatment design is required.



### City of Fort Bragg Furnished/Performed Items

1. All as built drawings or site-specific information necessary to effectively design, engineer and construct the renewable energy solution including but not limited to past site plans, all existing utilities (including irrigation infrastructure), permits for past work, etc.
2. PG&E lines located / line location prior to construction.
3. Water as needed to complete the work. Construction services and, if it is required by the authority having jurisdiction, to fill any fire safety water tanks.
4. Provide and maintain a suitable good-weather site access road that will accommodate heavy vehicles, deliveries, and service vehicles.
5. Site preparation including but not limited to vegetation removal, adequate grading, and soil compaction to SES Renewable energy solution specifications.
6. Provide mutually acceptable construction staging and storage area(s) adjacent to project site throughout the construction phase.
7. Provide unrestricted access to the Site during construction Monday through Friday including hours (6:00 am – 6:00 pm).
8. Should City decide to hire Lab of Record (LOR), Inspector of Record (IOR), and special inspections.
9. Utility transformer upgrade through PG&E for C.V. Starr Community Center.

## Design Phase

1. The solar PV schematic design aims to meet the targeted electrical production outlined in the conceptual design, which is provided in the technical documents for each site. It will be based on accurate and detailed modeling of system production and consideration of shading analysis or other site constraints using industry-standard tools. The design plans will include sufficient detail to analyze and discuss critical design decisions and the system layout will only utilize areas identified by the City for use.
2. Design development and complete construction drawings of the solar PV and all ancillary work required for permitting and construction will be provided by SES. Drawings shall fully describe all aspects of the construction work including fencing, directional boring/trenching, excavations, racking and mounting systems, electrical systems, signage, foundations, lighting, Americans with Disabilities Act (ADA) requirements, etc. SES will provide electrical, structural, and all other required California licensed engineers and/or architects (Engineers of Record and Architect of Record) to provide a complete, stamped design set as required to permit and construct a complete energy project submittal for the authority having jurisdiction (AHJ). The electrical construction drawings shall show and include all conduits below and above the finished grade/finish. All plans and specifications must meet the approval of AHJ, the City's representative, the local Fire Authority, and any other agency deemed as having jurisdiction over this project.
3. All design and engineering will follow mutually agreed upon submittal process.

## Construction Phase

1. SES will Provide and Install the following:
  - a. PV racking
  - b. PV modules
  - c. PV inverters
  - d. Attachments/Foundations
  - e. Data collection and online monitoring system with a five (5) year monitoring service subscription, a five (5) year cellular service plan, and inputs such as irradiance, panel temperature, ambient temperature, and utility grade production.
  - f. Interconnection work includes connection of systems to PGE grid at the main switchboard of each site.
2. SES will provide the PGE Interconnection Application (IA), process management, materials, and coordination for inspection from the local PGE. The IA process includes a PGE application review phase. The PGE engineering review phase can result in additional costs not included or reasonably anticipated (as they can only be determined by the PGE at the end of the IA process) upon execution of this contract.
3. SES will identify all ADA compliance issues that are directly associated with this project. SES is responsible for covered parking space ratios, signage, and any other compliance issues that are located under the footprint of any solar PV array canopy including canopies not located in parking lots. The cost of all other ADA compliance enhancements outside the canopy areas (i.e., path-of-travel access issues that fall outside the canopy footprint) is not known at this time and is therefore excluded from the scope of work.
4. SES' project manager will be assigned for the duration of the project through final completion. Regular coordination meetings (via conference calls or on-site visits, if necessary) will be facilitated by this same project manager. The assigned project manager will create a project schedule with a City representative utilizing project constraints and information revealed during due diligence activities within the design and engineering phase.

The project schedule will include these phases sequentially:

  - g. Design, engineering, interconnection application phase
  - h. Permitting phase
  - i. Procurement phase
  - j. Construction phase
  - k. Commissioning phase
  - l. Close-out phase
5. SES will coordinate with and support inspectors, the City, our team, and their consultants during design, construction, commissioning, and close-out.
6. SES is responsible for and will address the removal of trees, light standard removal, new lighting, parking islands, soft scape modifications, ADA upgrades within the footprint of new solar canopy

arrays, fire lane modifications, ramp access, etc. that are required for the installation of the energy projects.

7. All work assumes normal subsurface and digging conditions. The City acknowledges that SES has not yet performed subsurface due diligence or a geotechnical engineering analysis and therefore makes no representation of knowing the impact of the results of the geotechnical study upon the scope, cost, or schedule of the proposed project. If, prior to the issuance of a "Notice to Proceed," any of the sites are deemed to be infeasible in commercially reasonable discretion of the City after consultation with SES, such site shall be removed from the portfolio and the total Fixed Price shall be adjusted based on the size of the balance of the portfolio.
8. SES will perform project commissioning including all associated tasks and documentation related to successfully commissioning the system.
9. Final energy system as-built construction documents clearly conformed with all changes during construction shall be provided.
10. SES will provide a comprehensive set of closeout documents, including O&M manuals for each installed system.
11. SES will conduct training for City staff including orientation to the O&M manuals, systems, and safety procedures.
12. SES will secure laydown and storage facilities at the job site for all racking materials, energy system equipment, and supplies including any required security.
13. SES will provide legal toilets and handwashing facilities at job sites.
14. SES will perform daily cleanup to "broom clean" conditions.
15. SES will return any disturbed areas to pre-construction conditions including repair of all pavement/concrete, street sweeping, restriping, landscape restoration, irrigation restoration, equipment track marks, and scuffs on finished concrete surfaces.
16. SES will provide project closeout, inclusive of obtaining AHJ final inspection and closeout.
17. SES will provide temporary lighting in place of removed overhead lighting until under-canopy lighting is fully operational.
18. SES will provide a Stormwater Pollution Prevention Plan (SWPPP).
19. All Structural columns to be Hot Dip Galvanized (HDG) steel.
20. Wastewater treatment plant to receive marine grade paint.
  - a. Aluminum IMC conduits with PVC coated fittings

## Exclusions

1. Provision of temporary heating, cooling, fans, and domestic water.
2. Any repair work for existing systems beyond that which is stated in the ECM scope of work, or resolving existing code violations. All existing equipment is assumed to be in good working order and meets code.
3. Fire and life safety system programming or related work.
4. Hazardous material abatement.
5. ADA Upgrades outside of Canopy Array footprints. Any necessary upgrades outside of Canopy footprints determined after due diligence after Contract Effective Date by the AOR will be managed through a contract change order.
6. Any upgrades determined after due diligence after Contract Effective Date by the AOR will be managed through a contract change order.
7. Engineering, installation, and maintenance of permanent stormwater facilities and features if required by the AHJ, which includes the best management practice mitigations including but not limited to riprap, basins, inlet structures, and down inlet protections.
8. Multiple mobilizations.
9. Environmental engineering and/or any environmental/biological remediation.
10. Floodplain engineering and/or any alterations to site and materials to accommodate floodplains.
11. Service upgrades, electrical service equipment, or new services.
12. Changes to project design and implementation required to accommodate easements and/or rights of way not listed in the scope of work.
13. Environmental assessment, environmental impact reports, testing, and other reports not listed in the scope of work.
14. Any design or engineering related to flood plans and/or FEMA high-hazard floodplains.
15. Specialized environmental insurance.
16. Relocation and/or removal of any existing utilities (active or abandoned), inclusive of water, electricity, communication, data, cable TV, security systems, irrigation, etc.
17. Hazardous material surveys, testing, and/or monitoring.
18. Removal and/or disposal of any hazardous or contaminated materials.
19. Excavation, removal, and/or disposal of unsuitable materials.
20. Rock excavation and drilling.
21. Soft soil stabilization.
22. Dewatering drilled foundations and sleeving of foundations.
23. Removal/disposal of existing on-site trash and/or debris (inclusive of encountered underground trash or debris).
24. Corrosion-resistant materials (beyond standard galvanization).
25. Arc Fault Hazard Assessment.



26. Overcurrent Protection Coordination Studies.
27. Lab of Record (LOR), Inspector of Record (IOR), and special inspections.
28. Pacific Gas and Electric (PG&E) utility transformer upgrade at C.V. Starr Community Center for Solar PV installation.
29. CalGreen EV Charger requirements.

## Section 4 – Project Financials

### 4.1. Firm-Fixed Project Cost

Costs presented in this proposal are valid until 6/30/2024. If the Notice to Proceed is issued after 6/30/2024, we reserve the right to re-evaluate the project and make necessary modifications to the construction cost.

### 4.2. Items Included in Project Cost

Project costs include:

1. Engineering audit/project development including the cost for preparation of this proposal.
2. Engineering design
3. Construction/project management and site supervisor services.
4. Installation of equipment as specified in the scope of work:
  - a. All costs will be paid by SES for the installation of the equipment. This includes costs paid to subcontractors, team member reimbursements, or otherwise as it relates to the installation or system verification of equipment.
  - b. Cost of all equipment, materials, supplies, and equipment incorporated in the scope of work, including costs of transportation thereof.
    - i. Cost or rental charges including transportation and maintenance, of all materials, supplies, equipment, temporary facilities, and hand tools not owned by the workers.
    - ii. Cost of premiums for all bonds and insurance.
    - iii. Demolition cost and cost of removal of all debris.
    - iv. Cost of equipment startup, training, system verification, and balancing performed by SES.
5. Mobilization, project development, and engineering fee:
  - a. The invoice will be presented upon mutual execution of the Contract and will be in the amount of 25% of the project's total value.