

## **REQUEST FOR PROPOSALS**

### **FOR AN ENERGY/WATER RESOURCES AUDIT AND IMPLEMENTATION OF ENERGY AND WATER RESOURCES EFFICIENCY IMPROVEMENT PROJECTS**

**PROPOSAL DUE DATE/TIME: AUGUST 22nd AT 4:00 PM**

**PRE-PROPOSAL MEETING:**

**WEDNESDAY, August 14, 2024 AT 11:00 AM  
City Council Chambers  
Cotati City Hall**

City of Cotati  
201 West Sierra Avenue  
Cotati, CA 94931

# REQUEST FOR PROPOSALS

## Energy/Water Resources Audit and Implementation of Energy and Water Resources Efficiency Improvement Projects

In accordance with The City of Cotati's (hereinafter "City") California Government Code 4217.10 - 4217.18, the City is requesting sealed proposals for an Energy/Water Resources Audit to Identify and Implement Energy and Water Resources Efficiency Improvement Projects. Proposals shall be reviewed and ranked based on responsiveness to the City's RFP, with consideration of the proposed budget done secondarily.

### I. INTRODUCTION

The City hereby solicits proposals from qualified firms to first perform an audit of all city facilities to identify and then to ultimately implement a full range of energy services, energy and water-related improvements and related programs (hereinafter "Project"). The City is seeking to partner with an entity that is qualified to provide holistic, turn-key energy and water savings projects that further implementation of the City's Climate Action Plan. <https://www.cotaticity.org/1485/Climate-and-Sustainability>

The City anticipates working with a single firm or consultants team through three (3) stages of project activity:

- Preparation of a preliminary energy/water resources audit and identification of potential efficiency projects that meet the City's goals;
- Preparation of an Investment Grade Audit (IGA) to refine the project scope, savings and costs; to perform project development (engineering assessment, project budget, financial options for viable projects, workshop to City Council for selection of projects and financing instruments)
- Enter into a Guaranteed Savings Agreement (aka Performance Contracting Agreement) for project implementation (design, bid, construction, commissioning, and training).

Depending on the results of the preliminary audit or IGA and available funding, the City, in it's sole discretion, may chose to reduce the scope of the project or stop any further work on the project.

### History & Facilities

The City owns and operates City buildings, parks, roads, storm drains, a water distribution system and a sewer collection system.

- City buildings at the City Hall Complex (including the Police Station) at 201 West Sierra Avenue, the Public Works Corporation Yard at 1 Trebino Court, and the Train Station at 970 East Cotati Avenue. The Train Station has an operational PV array.
- The road network within Cotati (24 centerline miles), including eight (8) traffic signals and a portion of the street lighting.
- City parks include 12 municipal parks and a livestock ranch, amounting to approximately 28 acres of park lands. La Plaza Park in downtown Cotati has a stage, restroom and park lighting. Recently upgraded Kotate Park has park lighting and a restroom. Two other parks have restrooms, but currently no park lighting. The City does not own or operate any municipal pools.
- The storm water system consists primarily of road drainage, a combination of underground piping and road side ditches and all flow by gravity to the Laguna de Santa Rosa.
- The water distribution system includes three (3) municipal wells, two (2) turnouts from a water wholesaler and two 2 water tanks (1 inactive) and approximately 2,678 water customer accounts. All customer accounts are served by remote radio read meters. Municipal well production is

monitored and controlled by a SCADA system. The production and consumption monitoring is not currently integrated.

- The sewer collection system includes four (4) sewer lift stations and up to 4 active flow monitoring stations. The City conveys wastewater to the Subregional Wastewater Plant for treatment. Sewer lift stations and some flow monitoring is monitored and controlled by a SCADA system.
- The sewer lift stations and water well facilities have a power connection “pig tail” for portable generation, but no site currently has installed back up power. During power outages, provided the system has not been physically damaged, water flows by gravity through the water turnouts into the City’s distribution system.
- The water and sewer systems are run as independent enterprises, which remain financially self-sufficient and separate from other City infrastructure, which is primarily funded by the City’s General Fund.

In 2005, the City completed construction of the new Police Station as part of the City Hall Complex. This facility was LEED certified at that time and includes a variety of energy saving systems. A photovoltaic panel (PV) array was installed on the adjacent Community Center and Cotati Room roofs to partially offset power usage at the Police Station. This PV system was recently decommissioned and largely removed as it was approaching end of life and needed removal for a roof replacement project.

In 2014, the City performed a variety of energy improvements through a Performance Contract, including replacing all customer water meters with remote read meters, converting all city owned high-pressure sodium streetlights to light emitting diode (LED) lights, and retrofitted City building lights with compact fluorescent lights, LED lights, and other lower energy use fixtures. Some spaces received “smart” thermostats, but there were no general heating, ventilation, air conditioning (HVAC) improvements.

Over the past 5 years, the City has been transitioning the vehicle fleet to battery-electric. The City has a total of six (6) level 2 chargers for fleet use in the City Hall complex, including two at City Hall and four in the Police Station parking lot. These serve two electric vehicles for City Hall and five electric vehicles for the Police Department. There are currently no electric vehicles at the Public Works Corporation Yard. The electrical capacity in the existing panels at City Hall and the Police Building is full, preventing additional electric vehicle fleet expansion. The City relies on electric vehicles to provide a variety of public safety and emergency services. Therefore, a related consideration is the ability to feed backup power to at some portion of the installed electric vehicle chargers, which is considered part of the critical load..

Portions of City Hall have also been recently remodeled, including the Community Development and Engineering offices, which received new insulation to meet current building codes. Additionally, older single paned windows have been replaced with new double pane windows on the West Sierra Avenue side of City Hall as well as throughout the Community Center. The East School Street side of City Hall still contains all single paned windows and doors. As previously mentioned, an old PV system was removed from the roof of the Community Center (which served the Police Department), with the inactive remnants of this system still on the roof of the Cotati Room. The Community Center roof was replaced with a standing seam metal roof with the intent to mount PV panels at some point in the future.

The City Hall complex (including the Police Building) share a backup diesel generator which serves the general electrical uses at these facilities, including supporting a 911 Public Safety Answering Point (PSAP) and the City’s Emergency Operations Center. The Public Works Corporation Yard currently has no installed backup power source, but is a secondary control point and the only broadcast point for the City’s water and wastewater Supervisory Control and Data Acquisition (SCADA) system.

In 2020, an Energy Resiliency Feasibility Assessment was performed by TerraVerde Energy, which is attached as Attachment A to this RFP.

In 2024, the City completed a micro-project to replace older hot water heaters with heat pump water

heaters at the Cotati Room in the City Hall Complex, the Train Depot, and at the Public Works Corporation Yard.

The City purchases all of its electricity from Sonoma Clean Power, a local Community Choice Aggregator, using 100% renewable power ("EverGreen").

## II. PROJECT GOALS

The overall objectives of this project are to expand the City's existing fleet electric vehicle charging infrastructure, add resilience to key City facilities during a power outage and lower operating costs. The specific goals are to:

1. Expand electric vehicle charging infrastructure for staff and the public at the City Hall complex; and
2. Expand electrical vehicle charging infrastructure for the Police building; and
3. Add electric vehicle charging infrastructure to the City's Public Works Corporation Yard; and
4. Determine the best approach for fleet and workplace charging by evaluating the time of use electric rates (i.e. cost savings due to lower mid-day rates or late evening rates) and potential climate profile of charging during different times of day (i.e. different energy sources available during different parts of the day).
5. Develop a microgrid for the City Hall complex, including the Police building with the ability provide critical loads for up to 2 days before relying on the existing diesel generator; and
6. Develop a photovoltaic and battery backup system for the City's Public Works Corporation Yard, with the ability provide critical loads for up to 2 days with a local interconnect for longer outages; and
7. Evaluate opportunities for load-shaving and supplying grid power (virtual power plant) during peak demand times to reduce costs and/or contribute revenue; and
8. Evaluate the ability of existing and future electric vehicles to provide vehicle to load or vehicle to grid capabilities to support the City Hall Complex and Public Works Corporation Yard with back up power during emergencies, to support load shaving to reduce electric costs and to support the grid as a virtual power plant during peak power events to drive revenue.
9. Evaluate the possibility of virtual net metering across adjacent and non-adjacent City electrical accounts; and
10. Integrate overall water production/use/loss monitoring into either the water system production SCADA system or the consumption monitoring system; and
11. Evaluate the feasibility of distribution system zone monitoring for evaluating relative water loss by zone; and
12. Evaluate the overall cost savings of time of use municipal well pumping to rely on "free" wholesale water during the times of day with peak electrical rates and municipal wells when electrical rates are lowest; and
13. Other energy improvements that meet the City's Climate and Sustainability goals may be proposed to develop a financing portfolio that meets the City's goals.

For the project to be viable, it must be completed with no capital outlay and no increase in net annual operational costs. The intent is that the improvements will either be cost neutral at time of construction or will pay for themselves over time from cost savings and continue to reduce costs to the City once paid for.

The services and capital improvements will be completed through an energy performance contract which will accomplish the following:

- Can be financed under the IGA to deliver costs savings in each month through the entire term, and at least until the full cost of ESCO services are paid for;
- Turn-key project design and implementation of improvements and updates to the City's infrastructure;

- Upgrades old and/or inefficient systems;
- Maintains consistent and reasonable levels of occupant comfort;
- Maintains building functionality and compatibility with existing equipment;
- Improves utilization of technology to achieve optimum performance and savings;
- Provides additional benefits that directly result from energy related services and capital improvements, reduced maintenance needs, improved indoor air quality, building improvements, etc.;
- Minimizes financial and technical risk to the City;
- Provides training to employees on maintenance and repair of equipment and controls;
- Provides funding solutions; and
- Provides on-going annual metrics for use in reporting to the City Council and community.

### **III. MINIMUM REQUIREMENTS**

Respondents must meet the following criteria to participate in the City's RFP selection process:

- Current accreditation by the National Association of Energy Services Companies (NAESCO);
- Included on the U.S. Department of Energy's (DOE) Qualified List of Energy Service Companies;
- Active General Contractor's license in the state of California for a minimum of 24 months;
- Has a minimum bonding capacity of \$15 Million;
- Successful implementation of similar projects, including design and construction of a minimum of five (5) comprehensive energy savings, water savings and Distributed Generation (DG) projects with public entities within the past three (3) years. Provide current client references, with contact information from relevant projects that included:
  - Renewable generation, energy saving, and/or water saving measures
  - Strategic and transparent costing and financing approach
  - Other benefits, including Climate Action Plan (CAP) implementation, economic development workforce training and development, and related marketing/PR
- Demonstrated experience in retrofitting municipal infrastructure to reduce energy and water consumption;
- Proven ability to provide a team of California licensed mechanical, electrical, structural and civil engineers as may be necessary;
- Savings Methodology shall be a bill to bill comparison – International Performance Measurement and verification protocol (IPMVP) Option C (whole facility savings are determined by measuring energy use at the whole facility or sub-facility level) and include examples of Measurement and Verification (M&V) Reports; and
- No pending or recent litigation in the past (36) months associated with the savings performance and/or measurement and verification (M&V) of a guaranteed energy savings project.

#### IV. PROJECT SCOPE

The successful proposer/team will be responsible for implementing all tasks associated with achieving the above project goals and objectives as defined during the preliminary evaluation and IGA phases, via the following, at a minimum:

##### Energy and Water Audit

- Conduct a preliminary evaluation of City facilities and infrastructure to determine if potential projects or project elements appear feasible.
- Based on direction from the City after review of the preliminary evaluation, conduct a comprehensive IGA of City facilities and infrastructure. The investment grade audit shall identify and analyze the costs as well as financial and energy/water savings for each individual program or measure evaluated; and
- Conduct a comprehensive feasibility analysis of microgrid/distributed generation opportunities for the City Hall Complex and the Public Works Corporation Yard, including solar PV and solar arrays, and any other economically and environmentally viable distributed generation (DG) solutions; and
- Prepare a detailed evaluation of potential grant/rebate/loan/incentive programs available to offset costs of the recommended programs or measures; and
- Make recommendations for viable energy and water projects based on the audit/analyses and the goals of the program. For all proposed recommendations, provide a full lifecycle economic assessment with and without available grants/rebates/loans/incentive programs, including estimated installation cost, cost of maintenance, insurance, and all other costs;
- Prepare and conduct presentations to City staff and provide support to City staff for presentation to the City Council, summarizing activities, analyses, and recommendations of the energy and water audit. It is anticipated that there will be up to two (2) presentations to City staff and one (1) presentation to City Council during this audit phase.

##### Design and Construction

- Develop an overall project delivery approach;
- Design the project(s) in consultation with City staff;
- Coordinate with the City's Public Works Department, Police Department, City Manager's Office, and any other City departments with ownership or functional authority over various facilities involved;
- Comply with the Public Contract Code, all applicable City codes, regulations, specifications and design standards;
- Manage and administer all sub-contractors' work;
- Provide on-site construction management;
- Obtain all permits and apply for, manage and otherwise secure available, applicable energy grants, rebates and incentives with applicable utility companies/granting entities;
- Direct and manage equipment testing, start-up, commissioning and monitoring to ensure proper

operation in accordance with design intent and to ensure and verify energy savings performance.

- Prior to executing an IGA, provide a training session on the computer modeling approach you will use to validate savings, including approaches for weather normalization, changes in schedules, changes in building and equipment usage, changes in utility rates, and whether load dispatch by the City or a third party would modify the calculation. The City, at its discretion, may include an independent energy engineer or commissioning agent in this training.

#### Project Financing

- Projects will be 100% funded by the successful proposer through reduction in utility costs and/or procurement of utility incentives and/or grants;
- Identify and secure the lowest-cost financing available to the City (including, but not limited to, 0% on-bill financing offered by PG&E and low-interest financing offered by the California Energy Commission).

#### Training

- Training of City personnel in the operation and maintenance of the equipment installed;
- Provide operating and maintenance manuals for all equipment installed or provided;
- Turn over all warranty information to the City in the City's name.

#### Additional Energy-Related Programs and Funding

- Create, implement and fund innovative programs or measures within the overall project that create benefits and contribute to the City's goals and objectives related to:
  - Greenhouse gas reduction and carbon mitigation
  - Reduced operational costs
  - Economic development within the City
- Publicity, branding and marketing of the City as a leader in energy and environmental stewardship.

### **V. CONTRACT TERMS ANTICIPATED**

Contract terms may include, but will not be limited to:

- Life-cycle pro-forma of proposed energy improvements, including reasonable and fully documented annual energy, water, and operations and maintenance costs and savings. The City may choose to impose a security for as a cost savings guarantee;
- Full documentation of project labor and materials costs, by measure, with negotiated and agreed-to ESCO mark-ups, fees and profit clearly presented in an open-book pricing/cost structure. Performance bonds will be required for construction;
- Timetables for completing engineering and construction work;
- Detailed description of services to be provided;
- Project key staffing assignments and guarantee of availability of assigned key staff to work on the

project;

- Specific financing arrangements and terms;
- Estimates of water and energy savings in annual and life-cycle kwh, kW, therms, gallons, acre-feet or other appropriate units;
- A detailed description of, and plan for, ongoing measurement and verification to quantify and document project water and energy and cost savings and performance;
- A requirement for a performance bond guaranteeing that the facility will be either completed as planned or restored to the original condition in the event of default;
- A clause specifying who will be responsible for maintaining the equipment to ensure cost savings and continued equipment optimum performance.

As an example of the contract for the audit portion of the project, a copy of the City's standard Consultant's Services Agreement, with insurance requirements, is included as Attachment B.

The City retains the final decision on which potential projects to ultimately implement (some or all), and the prioritization/timing for project implementation. The City further retains the exclusive right to modify the project list prioritization and whether or not a potential project is ultimately contracted for implementation.

## **VI. PROPOSAL INSTRUCTIONS**

One (1) hard copy and one (1) electronic PDF copy of your proposal is required.

Proposals are to be sent or delivered to:

**City of Cotati**  
**Attn: City Manager's Office**  
**201 West Sierra Avenue**  
**Cotati, CA 94931**

Proposals must be received by the City no later than the date and time indicated on the cover sheet of this RFP. Any proposals received after the indicated date and time will be rejected.

Each submittal should address the following sections as outlined and adhere to requirements referenced above:

- Provide a description of how your firm is uniquely qualified for this project. Please include years in business, fiscal strength and evidence that the firm meets each element of the Minimum Qualifications, in accordance with Section III of this RFP. Include one (1) copy of the Company's most recent audited financial report.
- Provide an organizational chart showing the proposed team for this project. Also, include resumes for key individuals showing their experience with these types of projects, and specifically their role in the projects included as reference projects. Include a table of key individuals, their role in this project, the percentage of full time commitment to this project for each individual, and a management guarantee of key staff to work on this project at the percentage shown in the staffing table.
- Describe your firm's (or team's) capabilities, experience and approach to preparing energy/water audits and implementing similar projects for similar local government. Included shall be a description



of at least five (5) design-build energy/water/DG projects of similar or greater complexity that your firm has completed within the past three (3) years. Please include a comparison between estimated and actual implementation costs, and anticipated and actual savings for the five projects. Include the following information:

- Project description (include type of energy/Designated Generation and water conservation measures)
  - Proximity to the City of Cotati
  - Project size (total implementation cost)
  - Key staff that worked on the project
  - Total annual energy and water savings cost savings/avoidance
  - Finance and funding approach, and economic benefits and payback
  - Additional value created
  - Client reference name and current contact information
- Describe your firms proposed approach to the requested project, including audits, project management, training, etc., including additional benefits resulting for energy/water efficiency project implementation and respondent's added value elements
  - Using the IGA Pricing Proposal Sheet (Attachment C), indicate the cost for performing the preliminary evaluation and investment grade water and energy audit.
  - Provide a sample Performance Energy Contract.
  - Acknowledgement of receipt of any City responses to written questions received during the proposal period. The City will only respond to written questions with written responses, which are posted to the City website with the RFP. Any questions must be received no later than 5 business days prior to the RFP due date.

## VII. CONSULTANT SELECTION PROCESS

The City will evaluate proposals based on the scoring criteria outlined in this section. Respondents who are not actively engaged in providing services of the nature proposed in their response to the RFP and/or who cannot clearly demonstrate to the satisfaction of the City their ability to perform the work in accordance with the RFP requirements will not be considered. Respondents who do not meet the minimum requirements will not be considered.

The City reserves the right to reject any and all proposals, to waive informalities and minor irregularities in offers received, and/or to accept any portion of the offer if deemed in the best interest of the City.

The City may elect to forgo the oral interview process and select a firm to negotiate with based solely on review of proposals and reference checks. If the City chooses to conduct interviews, it will notify selected consultants after the proposal submittal date to arrange a time.

The following criteria will be used in evaluating and scoring the proposals:

- **Background** – qualifications, experience, resources, financial solvency (20 points)
- **Project Team & Management Structure** – amount of work self-performed, strength of proposed team, trainers, and management structure (25 points)
- **Project History & References** – relevant past project experience (20 points)
- **Project Approach** – approach to audits, project management, training, etc. (25 points)

- **Additional Benefits & Added Value** – additional benefits resulting for energy/water efficiency project implementation and respondent's added value elements (10 points)
- **Savings** – savings approach, Measurement & Verification practices, etc. (35 points)
- **Contracts** – sample contract terms and conditions of Performance Energy Contract, overhead & profit markups, and also the cost of the investment grade audit submitted via the IGA Pricing Proposal (Attachment C), (60 points)
- **Response** – responsiveness and compliance with the requirements of the proposal (5 points)

**Total Maximum Point Valuation: 200**

Any proposals received shall be deemed the property of the City and will either be kept or destroyed at the completion of the evaluation and selection process.

For questions relating to this RFP, please contact the City Manager's Office, by phone at 707-665.3622 or via email at [dobid@cotaticity.org](mailto:dobid@cotaticity.org).

## **Attachment A**

### 2020 Energy Resiliency Feasibility Assessment



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# City of Cotati: Energy Resiliency Feasibility Assessment

October 30, 2020

PREPARED BY:  
**TerraVerde**  
ENERGY

SPONSORED BY:  
 **Sonoma  
Clean Power**

## PREFACE

TerraVerde Energy (TerraVerde) was retained by Sonoma Clean Power (SCP) to provide a preliminary assessment of the feasibility for adding battery energy storage systems at City of Cotati facilities that have existing solar photovoltaic (PV) systems. The premise for the assessment is the desire to understand whether sites would be ideal for a solar plus battery energy storage system resiliency project, which could provide backup power during Pacific Gas & Electric (PG&E) Public Safety Power Shutoff (PSPS) events and other power outages.

The assessment was performed in two stages. The initial stage included an evaluation of the electricity usage and solar generation at the following City of Cotati sites:

- Train Station
- Police Department

Based on the City's desire for resiliency, the Police Department was advanced for further project evaluation. We appreciate the opportunity to provide SCP and the City of Cotati with the following results of this analysis.

## CONTENTS

Preface .....	2
1 Executive Summary .....	5
2 Glossary of Terms & Acronyms .....	7
3 Policy and Tariff Background .....	8
3.1 Time-of-Use Transition.....	8
3.2 Net Energy Metering .....	8
3.3 Power Charge Indifference Assessment.....	8
4 Facility Assessment and Energy Use Profile .....	10
4.1 PG&E Accounts and Consumption Profile Assessment .....	10
4.2 Rate Analysis.....	14
4.3 Results of Rate analysis .....	15
5 Project Sizing Analysis .....	16
5.1 Battery Energy Storage Systems Benefits .....	16
Demand Reduction and Peak Shaving.....	17
Energy Arbitrage.....	19
Energy Storage Net Energy Metering.....	19
Resiliency .....	19
5.2 MicroGrid Systems .....	20
6 Financing Options.....	22
6.1 SGIP Incentives Overview .....	22
6.2 Other Incentives Overview .....	24
6.3 Battery Energy Storage System Financing Overview .....	25
6.3 Solar Financing Overview .....	26
7 Battery Energy Storage System Feasibility Analysis Results.....	29
8 Conclusion .....	34
9 Additional Calculations, Assumptions and References .....	36
9.1 Assumptions & Calculations .....	36
10 Exhibits.....	38
Cash Flow Savings Pro Formas .....	38

## TABLES

Table 1: Proposed Rates, System Sizing, Incentives & Savings Under a Cash Purchase Scenario .....	5
Table 2: Electric Account Overview .....	11
Table 3: Current TOU Electric Account Details .....	12
Table 4: New TOU Electric Account Rate Details.....	13
Table 5: Rate Optimization .....	14
Table 6: Historical Rate Analysis Summary .....	15
Table 7: SGIP Program Levels & Status .....	23
Table 8: SGIP Application Fee .....	24
Table 9: Solar & Battery System Component Sizing, Costs and Back-Up Power Durations.....	29
Table 10: Battery System Costs & Savings.....	30
Table 11: Proposed Rates, System Sizing, Incentives & Savings under a CASH purchase scenario .....	34

## FIGURES

Figure 1: Train Station Electricity Consumption Overview .....	10
Figure 2: Police Department Electricity Consumption Overview.....	10
Figure 3: Example Demand Reduction Current TOU.....	17
Figure 4: Example Demand Reduction New TOU .....	18
Figure 5: Example Peak Shaving.....	18
Figure 6: Example Energy Arbitrage Charge / Discharge Profile .....	19
Figure 7: Energy Consumption and Sources in a Microgrid .....	21
Figure 8: Sample Solar Installation1 .....	26
Figure 9: Historical Lithium-Ion Battery Prices Through 2018.....	31
Figure 10: Battery Energy Storage System Cash Purchase Cumulative Cash Position .....	32
Figure 11: Battery Energy Storage System Third-Party Ownership Cumulative Cash Position .....	32
Figure 12: Battery Energy Storage System & Solar PV Cash Purchase Cumulative Cash Position.....	33
Figure 13: Battery Energy Storage System & Solar PV Third-Party Ownership Cumulative Cash Position.....	33

## 1 EXECUTIVE SUMMARY

This report describes the results of a review of the electricity usage, and PG&E and SCP rates for each of the City of Cotati sites. A summary of both the electricity usage and solar photovoltaic (PV) generation is provided, as well as feedback on the optimal rate schedule to minimize electricity costs and optimize financial savings from a solar PV system paired with a battery energy storage system. This report also describes the results of the battery energy storage system feasibility assessment and is organized as shown in the Table of Contents.

Of the two (2) City of Cotati sites evaluated for initial viability, the Police Department was advanced for further study based on the City's desire for resiliency at this site, as well as the annual electricity usage, maximum electricity demand, and rate schedule, which determine financial viability.

At the Police Station, a battery energy storage system sized to optimize cost and incentives was determined. This size was used to assess the financial impacts as well as the resiliency benefits to the site, and the results have been included in this report. An additional assessment of replacing the existing solar PV system was conducted to determine the financial benefits of a larger system paired with a battery energy storage system. The results of this assessment have also been included in this report.

**TABLE 1: PROPOSED RATES, SYSTEM SIZING, INCENTIVES & SAVINGS UNDER A CASH PURCHASE SCENARIO**

SITE / SCENARIO	CURRENT RATE	IDEAL RATE <sup>1</sup>	ANNUAL SAVINGS FROM RATE CHANGE (\$)	EXISTING SOLAR PV SIZE (KW DC) / PROPOSED SOLAR PV SIZE (KW DC)	PROPOSED BATTERY SYSTEM SIZE (KW AC)	RESILIENCY BENEFIT (%) <sup>2</sup>	SGIP INCENTIVE <sup>3</sup> (\$)	CUMULATIVE NET CASH POSITION (YR 15 / 25) (\$)
TRAIN STATION	A-6	A-6	N/A	12	N/A	-	N/A	N/A
POLICE DEPARTMENT / CURRENT SOLAR PV	A-10	A-10 TOU	\$943	30	43	64.8%	\$101,000	(\$152,599)
POLICE DEPARTMENT / INCREASED SOLAR PV	A-10	A-10 TOU	\$943	108	43	86.2%	\$101,000	\$267,316

<sup>1</sup>Ideal rates are assumed to be the rate that provides the lowest annual energy bill based on both PG&E and SCP costs.

<sup>2</sup>Resiliency Benefit represents the probability of supporting 100% of the load for a 12-hour outage. This value is determined by taking the average probability amongst random days using historical consumption from February 2019 through January 2020, assuming the battery is 100% charged at the start of the outage and the solar PV system will produce 75% of its anticipated production.

<sup>3</sup>Assumes the Large-Scale Storage Budget with the Resiliency Adder due to the current lack of funding for the SGIP Equity Resiliency budget.

The first portion of the analysis completed and reviewed in this report was to determine the "ideal" rate schedule that would provide the lowest annual energy bill for the City at each account analyzed based on both PG&E and SCP costs. Under the current time-of-use (TOU) period definition rates, the Train Station is enrolled in the A-6 rate tariff which results in the lowest annual bill, and therefore a rate change is not suggested. At the Police Station, A-10 TOU results in the lowest annual bill, but in this case, as this is not the current rate for this site, by switching to A-10 TOU the Police Station could realize a projected \$943 annual savings under the current TOU if a full year of savings was still available under the current TOU rates. The full annual savings will not be able to be



realized given that the current TOU rates are only available through March of 2021. Similarly, under the new TOU, the Police Station would maintain the lowest annual bill on rate schedule B-10, and the Train Station would benefit from B-6. However, these are the rates the sites will be transitioned to anyway under the new TOU, in March 2021 for the Police Department, and in 2025 for the Train Station, and thus the City would not see any rate change savings.

The second portion of the analysis completed and reviewed in this report was to determine the financial and resiliency impacts of a battery energy storage system at the site included for consideration. As can be seen in Table 1, under a cash purchase scenario the battery energy storage system results in a net loss at the end of its useful life for the Police Station. This is due to the fact that this site has a relatively low maximum demand, resulting in minimal battery energy storage savings due to demand reduction. Additional bill savings are available through energy arbitrage, and is discussed further in the body of the report. A third-party ownership model was also assessed and although this is an option that the City could consider in order to pay for the costs of the installation of the battery energy storage system over time instead of upfront, the financial savings were not as favorable as the cash scenario due to the need for a return on investment by the third-party system owner.

This battery energy storage systems results in a net loss at the end of its useful life but is sized to meet the maximum demand based on the consumption data between February 2019 and January 2020, is eligible for SGIP, and can provide resiliency. The analysis does not currently consider other expenses that the City may incur and that may arise due to a power outage at either of the sites analyzed (loss of refrigerated items, loss of communication, loss of data back-up systems, etc.). The analysis also does not include costs related to other forms of backup power, such as fossil fuel generators. The City may want to consider these additional expenses as part of the overall financial benefit that could result from the installation of a battery energy storage systems and an associated microgrid. As can be seen in Table 1, this battery energy storage system has roughly a 70% probability of supporting 100% of the anticipated site load for a 12-hour outage. If the City is interested in providing resiliency to only the critical site loads, this battery size could potentially be able to support those needs for a much longer duration, more information is provided in section 5.2.

As an addition to the battery energy storage system analysis, an assessment of installing a new solar PV system was conducted for the Police Department. Solar panel efficiencies have increased significantly over the past 17 years; thus, a new solar PV system of the same size would take up less space, potentially allowing for a larger PV system to replace the old one. The new proposed PV system is sized to offset roughly 85% of the site load, and as can be seen in Table 1, provides a positive cash position at the end of the project's useful life. Additionally, the increase solar PV size paired with the same battery energy storage system has roughly an 86% probability of supporting 100% of the anticipated site load for almost 12-hour outage

Should the City be interested in pursuing either of the projects outlined in this report, the next step would be a competitive solicitation process to find the best vendor for the City to partner with. Prior to running a solicitation process, additional due diligence including site walks to finalize project specifications are suggested. Running a competitive solicitation process to obtain pricing for the options explored in this report will provide SCP and the City of Cotati the opportunity to verify the preliminary feasibility findings presented herein.

## 2 GLOSSARY OF TERMS & ACRONYMS

CA	California	MWh	Megawatt-hour
CPUC	California Public Utilities Commission	PCIA	Power Charge Indifference Adjustment
GHG	Green-House-Gas	PG&E	Pacific Gas and Electric
GRC	General Rate Case	PV	Photovoltaic
IOU	Investor Owned Utility(ies)	SCP	Sonoma Clean Power
kW	Kilowatt	TOU	Time-of-Use
kWh	Kilowatt-hour	W	Watt
MW	Megawatt		

### 3 POLICY AND TARIFF BACKGROUND

#### 3.1 TIME-OF-USE TRANSITION

In May 2017, PG&E completed a General Rate Case (GRC) filing, wherein it proposed a series of revisions to rate schedules and implemented a California Public Utilities Commission (CPUC) approved decision 17-01-006 in January of 2017 that allowed all the California investor owned utilities (IOUs) to adjust their definitions of TOU peak periods. The decision allowed PG&E to expand the definition of the on-peak period from 12:00-6:00pm during the summer to all year from 4:00-9:00pm. The GRC filing has currently been approved by the CPUC and the new rate schedules have been available for voluntary enrollment since November 2019. The new rate schedules will become mandatory in March of 2021 for all PG&E accounts that are not eligible for some form of legacy rates (defined using “grandfathering” in current IOU documents). All the City of Cotati’s electric accounts will be subject to changes in TOU period definitions and corresponding rates, starting with the Police Department in March 2021.

#### 3.2 NET ENERGY METERING

Due to the proliferation of behind-the-meter solar PV systems in California over the past ten years, the State’s net energy metering program (NEM) cap was reached, which has triggered a transition from the original net metering program tariff, known as NEM 1.0, to a new “successor” NEM tariff known as NEM 2.0. PG&E reached their NEM 1.0 program capacity caps in 2016.

The primary differences between the original NEM 1.0 tariff and the new NEM 2.0 tariff is the removal of caps on solar PV system size, and a decrease in potential cost savings due to the removal of credits for utility bill components known as non-bypassable charges. While the new NEM 2.0 tariff does not provide the same level of retail credit value as the NEM 1.0 tariff, the fact that the 1MW CEC-AC system size cap limitation is no longer in place means solar PV systems can be sized for optimum offset of energy consumption and maximum energy cost savings potential.

The NEM tariff also includes a special condition option known as Net Energy Metering Aggregation (NEM-A). NEM-A allows a PG&E customer with multiple meters on the same property, or on adjacent or contiguous properties, to use the generation from a solar PV system interconnected behind one meter to provide NEM benefits for the other (aggregated) meters through a Utility accounting process. NEM-A customers are prohibited by State law from receiving net surplus compensation.

Decision 19-01-030 by the CPUC in February of 2019 has expanded the NEM 2.0 tariff to allow battery energy storage systems to receive NEM credits for energy exported to the grid when the battery energy storage system is charged 100% from a renewable generation source, such as solar PV systems, and has a power control configuration that is certified by a national recognized standard.

#### 3.3 POWER CHARGE INDIFFERENCE ASSESSMENT

In 2002, California passed Assembly Bill 117 enabling the establishment of Community Choice Aggregators (CCAs) and thus providing customers of the California Investor-Owned Utilities (IOUs) an alternative source to procure energy from. The Power Charge Indifference Adjustment (PCIA) fee is considered an “exit” fee, which IOU customers must pay for electing to purchase their energy from an alternative source, such as a CCA. The PCIA fee was established on the premise that it ensures that all electricity ratepayers pay an equal share of the costs the IOU spent on procuring energy

(generation) prior to customers electing to procure energy from a CCA instead of the IOU. The PCIA charge is dependent on when a customer starts procuring their energy from a CCA and based on this a “vintage” for the PCIA charge is established.

In October of 2018, the CPUC approved a new methodology for calculating the PCIA. The decision allows the IOUs to continue charging the PCIA, with no time limitations, on all legacy IOU owned generation sources that qualify as energy procured by the IOU to meet customer needs. Beginning in 2020, the CPUC decision also placed a \$0.005/kWh yearly limit on the PCIA cost and added credits for greenhouse gas-free resources, renewable resources, and capacity attributes towards the costs associated with the legacy generation sources.

## 4 FACILITY ASSESSMENT AND ENERGY USE PROFILE

### 4.1 PG&E ACCOUNTS AND CONSUMPTION PROFILE ASSESSMENT

#### ELECTRICITY CONSUMPTION (KWH)

As part of this report the consumption profiles for each of the City of Cotati sites were investigated. The following figures provide information on the solar PV production, on-site consumption of the solar PV, and grid-power consumption net of solar. Additional information can be found in Exhibit A. It is important to note that operational production data was unavailable and the solar PV production data used in this analysis was estimated based on the solar PV system data provided and an estimation software (PVWatts). Additional information on assumptions and calculations can be found in Section 9.1.

FIGURE 1: TRAIN STATION ELECTRICITY CONSUMPTION OVERVIEW

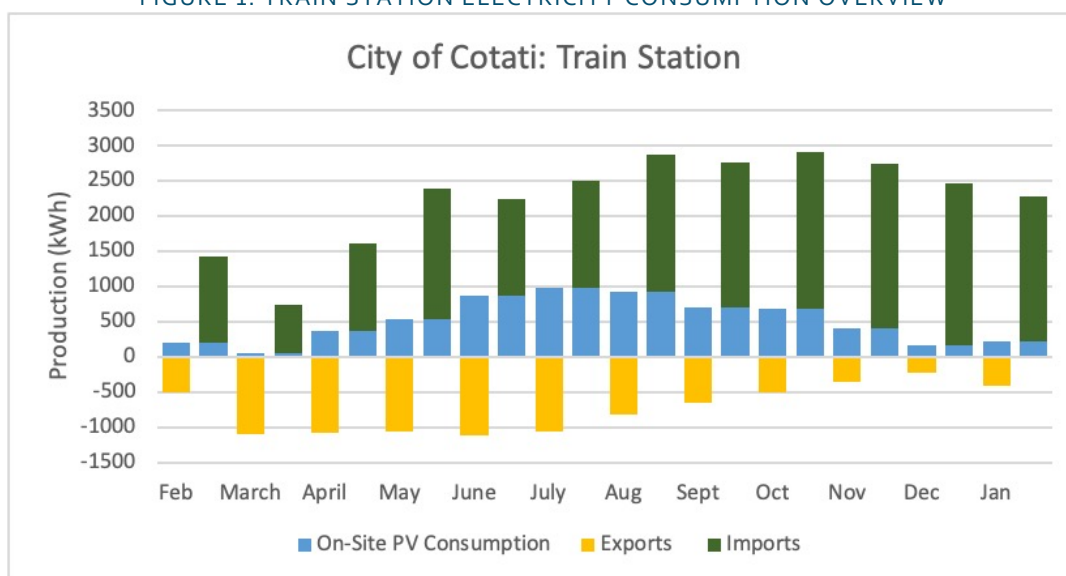
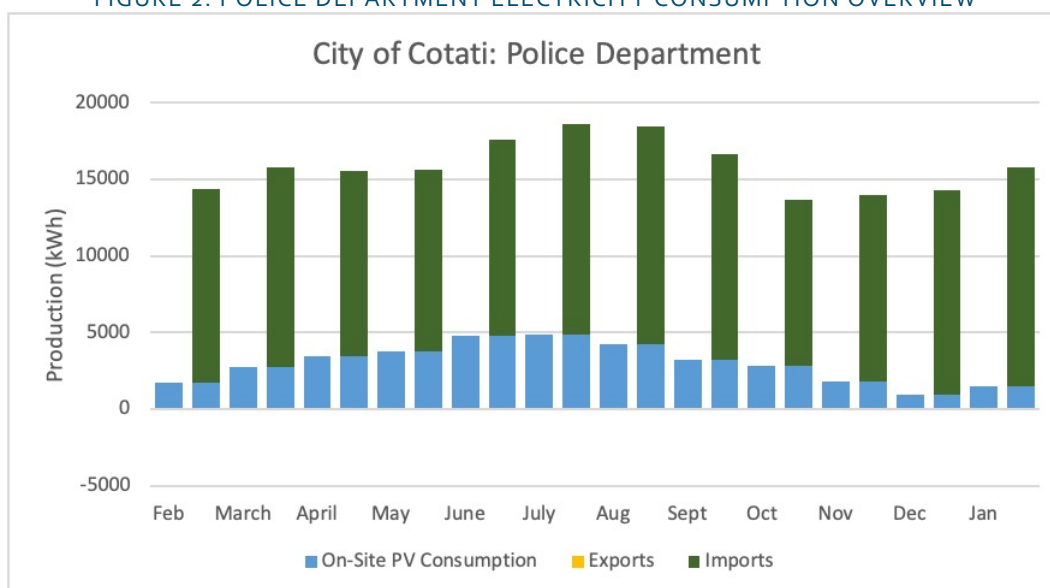


FIGURE 2: POLICE DEPARTMENT ELECTRICITY CONSUMPTION OVERVIEW



PG&E provides energy distribution services to both City of Cotati sites, while SCP provides generation services. Both City of Cotati electric accounts are enrolled in SCP's EverGreen service, the 100% renewable, locally produced energy 24/7 option. The following tables provide information currently available about the electric accounts, including rates and total consumption over the specified 12-month period.

TABLE 2: ELECTRIC ACCOUNT OVERVIEW

Site	PG&E SAID	Current Rate Tariff	Annual Consumption Feb. 2019-Jan. 2020 (kWh)	Highest Monthly Load (kW) between Feb. 2019-Jan. 2020	Demand Charges on Current Rate?	Permission to Operate Date
Train Station	XXXX507074	A-6	11,977	18	NO	2015
Police Department	XXXX507311	A-10	154,377	43	YES	2003

Electricity consumption is measured by metering the usage of kilowatt-hours (kWh) of electricity and is updated in PG&E's meter reading system every 15 minutes (known as an interval). Electric load profile is expressed as "demand" or "load" and is measured in kilowatts (kW). Over the 12-month period (February 2019 to January 2020) used in the analysis, the City of Cotati consumed 166,354 kWh of electricity across the two accounts listed in Table 2.

Understanding electricity consumption and utility billing requires knowledge of the TOU rate structures for the various accounts. The City of Cotati accounts are enrolled on different rate structures which are shown for each account in Table 2. Rate structure selection for each account is dependent on the consumption and load profile of the applicable meter. Table 3 below provides a summary of the various TOU rate structures assigned to the City of Cotati accounts based on the current TOU period definitions and the limits on demand (kW) and consumption (kWh) that dictate which rate structures the accounts are enrolled in. Each TOU rate structure consists of a set of three standard charges:

- monthly customer (meter) charge which is the same each month;
- time-of-use energy charges per kWh of consumption; and
- time-of-use demand charges which use a rate that varies depending on the time of the day and season and are applied to the highest demand recorded during the applicable TOU periods for a given month.

TABLE 3: CURRENT TOU ELECTRIC ACCOUNT DETAILS

Rate Structure	Peak Monthly Demand Limit	Consumption Limits	Additional Considerations
A-6 (Pre 4.1.2017)	499 kW	N/A	Rate not available for enrollment after April 1, 2017. Accounts enrolled before April 1, 2017 remain eligible for this rate structure. No demand charges.
A-6 (Post 4.1.2017)	75 kW	150,000 kWh	Demand must not exceed Monthly Demand Limit for more than 3 consecutive months or a transition to A-10 would be required. No demand charges. Higher rates on summer weekdays during peak periods than A-1. Slightly lower winter and off-peak kWh rates than A-1.
A-10	499 kW	N/A	Demand must not exceed Monthly Demand Limit for more than 3 consecutive months or a transition to E-19 would be required. Demand charges based on maximum kW per month and vary by season. Lower TOU kWh energy charges than A-1 and A-6.

Any City of Cotati accounts that were enrolled continuously in A-6 since March 31, 2017 are enrolled in legacy rates under the pre 4.1.2017 A-6 rate structure. This applies to the City's Train Station account. Additionally, any site with solar PV systems installed less than 10 years ago behind the meter are enrolled in legacy rates under a TOU-period definition that includes a summer on-peak period from 12-6pm and will remain enrolled in legacy rates under this TOU-period definition through the 10-year anniversary of the solar PV systems' Permission to Operate (PTO) date as established by PG&E (see Table 2). Given that the Police Station solar PV system was installed more than 10-years ago, this account is no longer eligible for the TOU period legacy rate. The City's Train Station remains eligible for the TOU period legacy rate through 2025. All other accounts can currently voluntarily transition to the new rate schedules and will undergo a mandatory transition to the new TOU period definitions by March of 2021.

Table 4 below presents the limits on demand (kW) and consumption (kWh) that dictate which rate structure accounts will be enrolled for the new TOU period definitions. There are minimal changes in the rates structures related to maximum demand limits with the key differences between the current TOU and new TOU rate structures outlined below:

- All new TOU rates will contain a year-round, 7-days a week, on-peak period of 4pm – 9pm.
- The new TOU rates created a super-off-peak period in the months of March through May that will run between 9am - 2pm.
- The definition of the summer season has changed from a 6-month summer in the current TOU rates to a 4-month summer season (Jun-Sep) in the new TOU rates.
- The standby option on B-19 or B-20 rates structures (new TOU) will be the first-time daily demand charges have been implemented in California.
- The new TOU rates removed the consumption limitations that was in place on A-1 and A-6.

TABLE 4: NEW TOU ELECTRIC ACCOUNT RATE DETAILS

Rate Structure	Peak Monthly Demand Limit	Additional Considerations
B-6	75 kW	Demand must not exceed Peak Monthly Demand Limit for more than 3 consecutive months or a transition to A-10 would be required. No demand charges. Higher rates on summer weekdays during peak periods than A-1. Slightly lower winter and off-peak kWh rates than A-1.
B-10	499 kW	Demand must not exceed Peak Monthly Demand Limit for more than 3 consecutive months or a transition to E-19 would be required. Demand charges based on maximum kW per month and vary by season. Lower TOU kWh energy charges than A-1 and A-6.



4.2 RATE ANALYSIS

TABLE 5: RATE OPTIMIZATION

		CURRENT TOU RATES AND COSTS PER CURRENT BILLS					CURRENT TOU IDEAL RATES <sup>1</sup> & COSTS					NEW TOU PROJECTED RATES AND COSTS					NEW TOU IDEAL RATES & COSTS				
PG&E SAID	SITE NAME	PG&E Rate	Bundled PG&E Costs	PG&E Solar Choice <sup>2</sup> Costs	PG&E + SCP Costs	PG&E + SCP EverGreen <sup>3</sup> Costs	PG&E Rate	Bundled PG&E Costs	PG&E Solar Choice <sup>2</sup> Costs	PG&E + SCP Costs	PG&E + SCP EverGreen <sup>3</sup> Costs	PG&E Rate	Bundled PG&E Costs	PG&E Solar Choice <sup>2</sup> Costs	PG&E + SCP Costs	PG&E + SCP EverGreen <sup>3</sup> Costs	PG&E Rate	Bundled PG&E Costs	PG&E Solar Choice <sup>2</sup> Costs	PG&E + SCP Costs	PG&E + SCP EverGreen <sup>3</sup> Costs
XXXX507074	Train Station	A-6	\$2,259	\$2,317	\$2,297	<b><i>\$2,597</i></b>	A-6	\$2,259	\$2,317	\$2,297	<b><i>\$2,597</i></b>	B-6	\$3,135	\$3,192	\$3,200	<b><i>\$3,500</i></b>	B-6	\$3,135	\$3,192	\$3,200	<b><i>\$3,500</i></b>
XXXX507311	Police Department	A-10	\$34,987	\$35,079	\$35,830	<b><i>\$39,688</i></b>	A-10 TOU	\$34,063	\$34,155	\$34,887	<b><i>\$38,745</i></b>	B-10	\$36,036	\$36,128	\$36,767	<b><i>\$40,625</i></b>	B-10	\$36,036	\$36,128	\$36,767	<b><i>\$40,625</i></b>

<sup>1</sup>Ideal rates are assumed to be the rate that provides the lowest annual energy bill based on both PG&E and SCP costs.

<sup>2</sup>PG&E Solar Choice is PG&E's 100% solar option, this program has a cap and is available on a first come first serve basis.

<sup>3</sup>SCP Evergreen is SCP's 100% renewable (geothermal and solar) option, produced entirely within the SCP service territory.

As discussed in Section 4.1, the maximum demand of a site/meter determines which rate tariff(s) the site is eligible to enroll in. Additionally, within a specific rate tariff, there are alternative options such as enrolling in a 100% green option, or procuring energy from a CCA, such as SCP. ***City of Cotati is currently enrolled in the EverGreen rate program with SCP for all their accounts (see bolded italicized blue text in the Table above).*** All of the various options shown in the table above are outlined below:

- a) ***“Bundled PG&E Costs”*** - provides the annual bill cost based on PG&E standard rates for both generation and distribution costs (no SCP participation).
- b) ***“PG&E Solar Choice Costs”*** – provides the annual bill cost based on PG&E distribution cost and generation Solar Choice rates wherein 100% of energy procured comes from solar PV systems owned and operated by PG&E (no SCP participation).
- c) ***“PG&E + SCP Costs”*** – provides the annual bill cost based on PG&E rates for distribution and SCP rates for generation and participation in the Standard CleanStart rate program wherein energy procured is 50% renewable and 97% carbon free.
- d) ***“PG&E + SCP EverGreen Costs”*** - provides the annual bill cost based on PG&E rates for distribution and SCP rates for generation and participation in the EverGreen rate program wherein the energy procured is 100% renewable, locally generated energy, day and night.

Due to the transition from the current TOU rate definitions to the new TOU rate definitions in March of 2021 as discussed in Section 4.1, the rate tariffs investigated for each site analyzed both current TOU rates and the new TOU rates. The analyses included annual bill costs for the rate tariff that the site is currently enrolled in, and also identified a potential rate tariff change that could provide financial savings (***“Ideal”***) should the City decide to pursue the change. The columns shown in bold italicized purple text in the table above indicate the rate tariff option that the sites are currently enrolled in (***“Current TOU Rates and Costs per Current Bills”***) and the equivalent rate tariff option in the other categories. The ***“Current TOU Ideal Rates & Costs”*** section identifies the ideal rate tariff and associated annual bill costs for each site. The ***“New TOU”*** sections are the same as the first two, instead utilizing the new TOU rate tariffs versus the current TOU rate tariffs.

### 4.3 RESULTS OF RATE ANALYSIS

As can be seen by the figures in Section 4.1 and Exhibit A, the Train Station solar PV system has been sized to allow for exports which will result in utility bill savings from the exports. The Train Station is consuming approximately 6,100 kWh from the PV, while the system is producing approximately 15,000 kWh. The Police Department PV system has been sized to only offset onsite load and does not export to the grid. However, this system still provides utility bill savings by requiring a lower quantity of energy to be purchased from SCP.

It is important to note that the savings projections in Table 6 (below) are based on PG&E tariffs made effective May 1, 2020, and SCP tariffs made effective July 1, 2020. As of May 1, 2020, PG&E has increased their PCIA fees. Currently, SCP is providing the lowest possible rates to their customers, however, due to the increase in the PCIA fees from PG&E, as of May 1, 2020 SCP customers are now paying slightly more than they would as a bundled PG&E customer. See section 3.3 for more details.

TABLE 6: HISTORICAL RATE ANALYSIS SUMMARY

	Current TOU Current Rates	Current TOU Ideal Rates <sup>1</sup>	New TOU Similar Rates	New TOU Ideal Rates <sup>1</sup>
<b>Total Annual PG&amp;E Costs</b>	<b>\$37,246</b>	<b>\$36,322</b>	<b>\$39,171</b>	<b>\$39,171</b>
<b>SCP Annual Savings (CleanStart)</b>	<b>(\$881)</b>	<b>(\$862)</b>	<b>(\$796)</b>	<b>(\$796)</b>
<b>SCP Annual Savings (EverGreen)</b>	<b>(\$4,889)</b>	<b>(\$4,870)</b>	<b>(\$4,805)</b>	<b>(\$4,805)</b>
<b>Optimized Annual Rate Savings</b>	<b>\$943<sup>2</sup></b>		<b>\$0</b>	

<sup>1</sup>Ideal rates are assumed to be the rate that provides the lowest annual energy bill based on both PG&E and SCP costs.

<sup>2</sup>This is a projected annual savings value, only a portion of this savings value could be realized given that the current TOU rates are only available through March of 2021.

Additionally, the Police Department will benefit from a shift from A-10 to A-10 TOU. By making this immediate switch under the current TOU, a portion of the projected annual savings of \$943 can be realized. The full annual savings will not be able to be realized given that the current TOU rates are only available through March of 2021.

The Police Department will benefit from transitioning to the TOU option of A-10 because the non TOU A-10 has a higher energy charge than the part-peak or off-peak energy charges of A-10 TOU.

## 5 PROJECT SIZING ANALYSIS

This section provides information about battery energy storage systems and microgrid systems and describes the process for determining optimized system capacity and estimated implementation costs associated with the proposed system.

The analysis begins with a comprehensive data collection and quality control process, then proceeds to an operations profile analysis (demand, consumption and billing), and concludes with sizing of proposed project components, cost estimates, and a financial projection of project economics using proprietary rate tariff and financial modeling programs.

To perform the baseline operations profile analysis at least 12 months of billing and electricity consumption data must be compiled (in 15-minute intervals). This data is used as a baseline for defining future electricity consumption, and as an input for projecting electricity cost savings over time. Electricity usage data is collected utilizing PG&E authorization forms and communicating with PG&E's 3<sup>rd</sup> party data collection team. The data collected is in the form of 15-minute interval data files and/or paper (.pdf) bills. Billing data summarizes metered energy consumption (and energy generation in the case of existing on-site solar PV systems or other renewable energy technologies), monthly maximum demand values, and corresponding charges incurred by the agency during each billing period. Paper bills contain information that help to confirm each meter's rate schedule, service voltage, and demand response program participation. Interval data is comprised of metered demand values at 15-minute intervals and shows the shape and load profile of a specific operation/facility (meter/site). Using the interval data and information extracted from the paper bills, along with most current rate information (PG&E tariff periods and costs), it is possible to reconstruct monthly bills to establish an accurate basis for comparing expected energy and demand reductions associated with proposed energy storage systems.

Verification of the accuracy of data used to create the baseline billing (electricity costs) assumptions is critical to determining an accurate avoided cost calculation and energy cost savings estimate. To ensure that billing assumptions and tariff related variables are correct for each meter prior to modeling project cash flows and net savings, 12 months of billing for each proposed meter is recalculated by calendarizing the 15-minute interval data and applying the applicable (historic) rate schedules. If a large variance between the actual PG&E bills and the recalculated bills is observed, the inputs are re-evaluated for missing data, or missing or incorrect rate components. Factors that can affect the calculated baseline billing assumptions include voltage levels, demand response programs, standby charges, and exported energy production. This iterative process of systematically reducing the total variance between actual and recalculated historical billing provides confirmation that the inputs are correct and accurate, which results in accurate avoided cost calculations and projected savings values.

### 5.1 BATTERY ENERGY STORAGE SYSTEMS BENEFITS

The primary financial benefits from battery energy storage systems are electric demand reduction and peak shaving. For energy usage profiles that have significant jumps in demand over a billing period, a battery can be used to provide an alternative source of power that ensures that the peak amount of power drawn from the utility company never exceeds a set threshold, thereby allowing a customer to remain on a more cost-effective rate structure, and/or to reduce demand costs.

Battery energy storage systems can also provide a number of other financial and operational benefits including energy arbitrage (charging and discharging the battery based on time-of-use price of electricity) and resiliency (back-up power).

### DEMAND REDUCTION AND PEAK SHAVING

Integrating battery energy storage with solar PV can facilitate an optimum (maximum) level of financial savings. A solar PV system by itself provides per-kWh utility bill savings and some level of peak demand reduction. However, solar PV is subject to intermittency based on weather conditions, and therefore is unreliable in ensuring consistent demand charge reduction. In cases where customers are experiencing high demand charges and cannot adjust the demand profile of the operation/facility, solar PV and energy storage can be controlled together to provide the optimal overall bill savings and peak demand savings. This capability can be managed through charge/discharge management software capable of making “decisions” to optimize financial savings based on the actual operating profile and the TOU rate structure on a real-time basis. The software can direct the battery system to charge with solar PV energy, ensuring that the battery is always charged and available for use during periods of low solar energy production.

FIGURE 3: EXAMPLE DEMAND REDUCTION CURRENT TOU

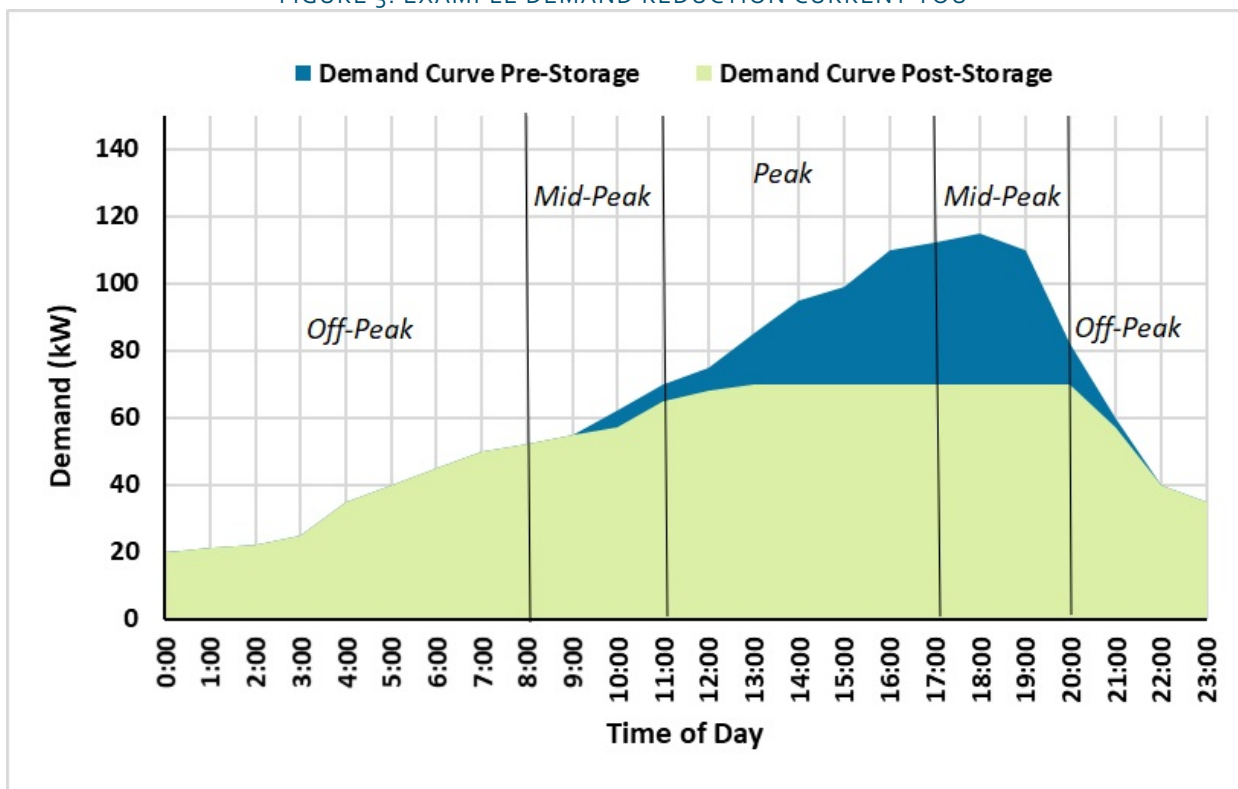


FIGURE 4: EXAMPLE DEMAND REDUCTION NEW TOU

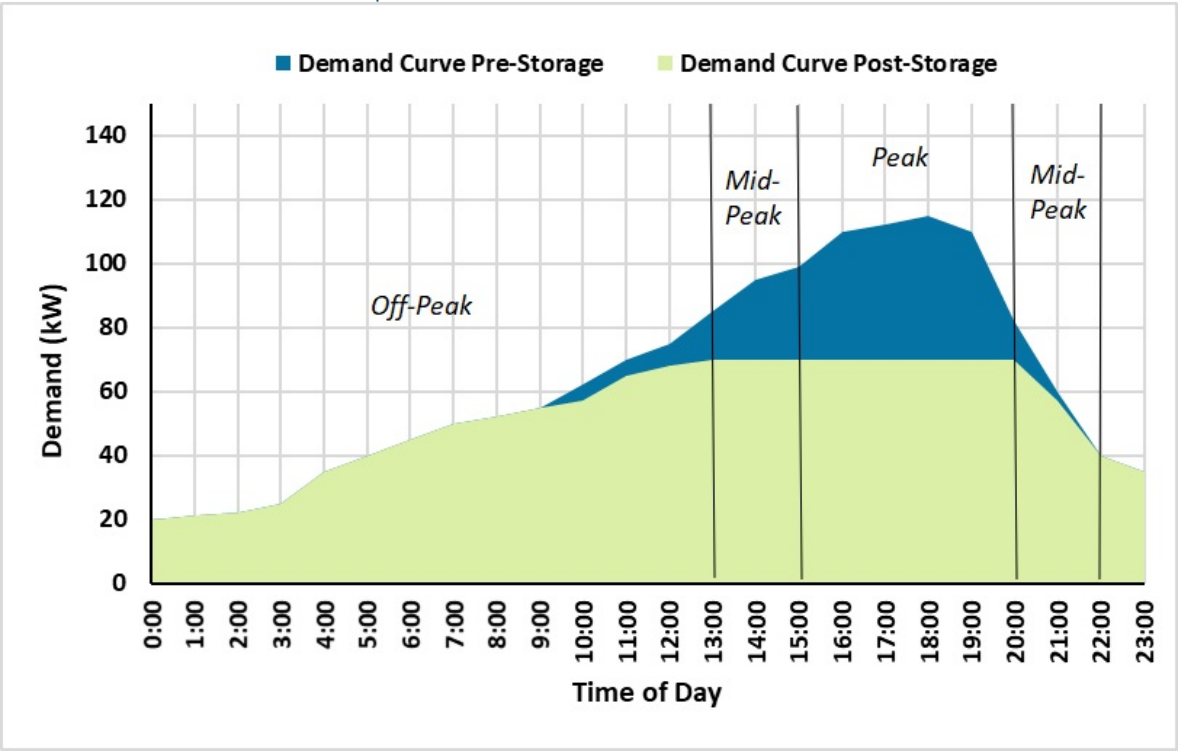
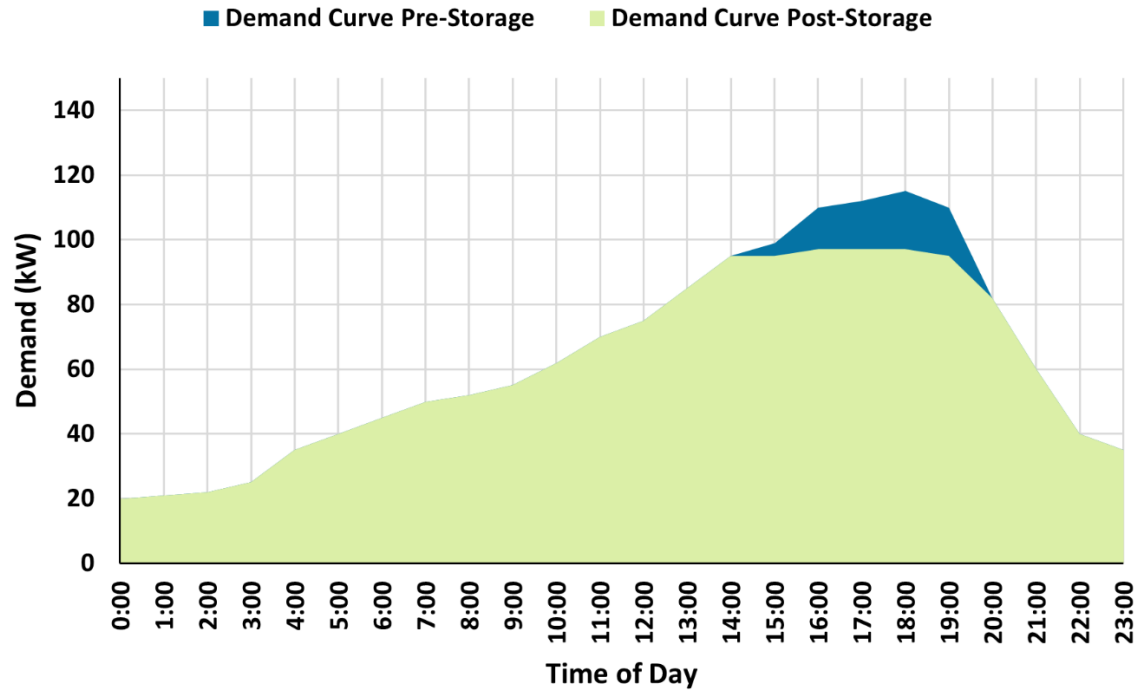


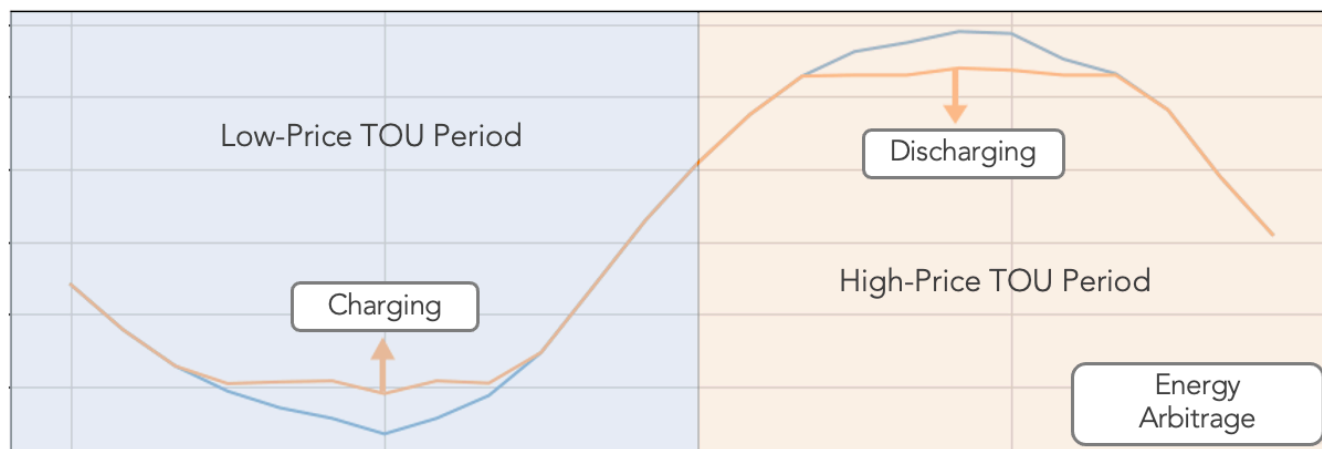
FIGURE 5: EXAMPLE PEAK SHAVING



## ENERGY ARBITRAGE

As noted previously, batteries charged by a solar PV system also have the potential of providing “energy arbitrage” savings, i.e., charging the batteries from the solar PV system during low bill credit periods and discharging the batteries for facility operation and/or exporting the energy during high bill credit periods. In the first year of operation, the battery energy storage system at the Police Department could provide approximately \$1,074 in savings due to “energy arbitrage”.

FIGURE 6: EXAMPLE ENERGY ARBITRAGE CHARGE / DISCHARGE PROFILE



## ENERGY STORAGE NET ENERGY METERING

Integrated solar PV and battery energy storage systems should also be designed to include the installation of a Net Generating Output Meters (NGOM) to allow the facility to participate in energy storage net energy metering programs while maintaining the flexibility to charge from the grid. An NGOM is a meter required by the Utility to ensure that only renewable energy generation systems receive net metering credits under current net metering rules (i.e., to ensure only the NEM solar PV system or energy storage systems charged 100% from solar energy receive export credits). Energy storage net energy metering (NEM) allows facilities to receive export credits from the Utility for energy exported to the grid from energy storage systems that are charged solely from on-site (co-located) solar PV systems. To achieve maximum flexibility in controlling the battery energy storage system, the interconnection application submitted to the Utility for the battery system should assume the battery system will export through Energy Storage NEM.

## RESILIENCY

In addition, an integrated solar PV and energy storage system can be configured for the added benefit of providing an alternative source of back-up power when the grid is either unreliable or not available. This added resiliency allows for the site electrical load to be maintained during a grid outage and is explored in more depth in Section 5.2.

## 5.2 MICROGRID SYSTEMS

As noted previously, microgrids use onsite electricity generation (such as solar PV) and a battery energy storage system to create an onsite miniature version of the distribution grid. Microgrids typically function in parallel with the utility grid but can also become electrically isolated from the grid in the event of a power outage.

Battery energy storage and solar PV systems installed with proper switching and a microgrid controller can be configured to provide various levels of back-up power for facilities including all or a portion of a facilities loads. Microgrids can be designed to provide backup power for an entire facility/site electrical load, certain critical loads only, or somewhere in between. The determination of “critical loads” will vary site-by-site depending on the goal of the microgrid (e.g., life sustaining services only, maintaining critical operations during an emergency, etc.). In many cases, the most economically viable path is to select a portion of a facilities loads (critical loads) to be supported by these systems. The complexity and cost of a microgrid system increases as the size of the load it must service increases. Larger loads require larger (and more expensive) battery energy storage systems. The length of time a microgrid can support a given load (kW) is dependent on the battery energy storage system which will have a limited capacity without being recharged, but also on the ability of the energy generation source to recharge the battery energy storage system.

For solar PV systems, energy generation only occurs during the day. Once the sun goes down, the battery energy storage system will be the only source of power unless additional energy generation sources are available. Despite the fact that the solar PV system only produces energy during the day, with sufficiently sized components, a combined solar PV and battery energy storage system can provide sufficient energy to meet both daytime and night-time loads.

If it is determined that only a subset of the site’s loads need to be kept online during a grid outage, load management techniques (such as controllable breakers or dedicated electrical load panels) can be used to isolate those loads so that they are the only loads that draw power from the microgrid during a power outage. Determination of which loads should continue to receive power during a grid outage requires feedback from site personnel. If a subset of loads is identified for inclusion in a microgrid, an investigation to determine what portion of the overall site consumption the identified loads represent would be required for resizing of the battery energy storage system.

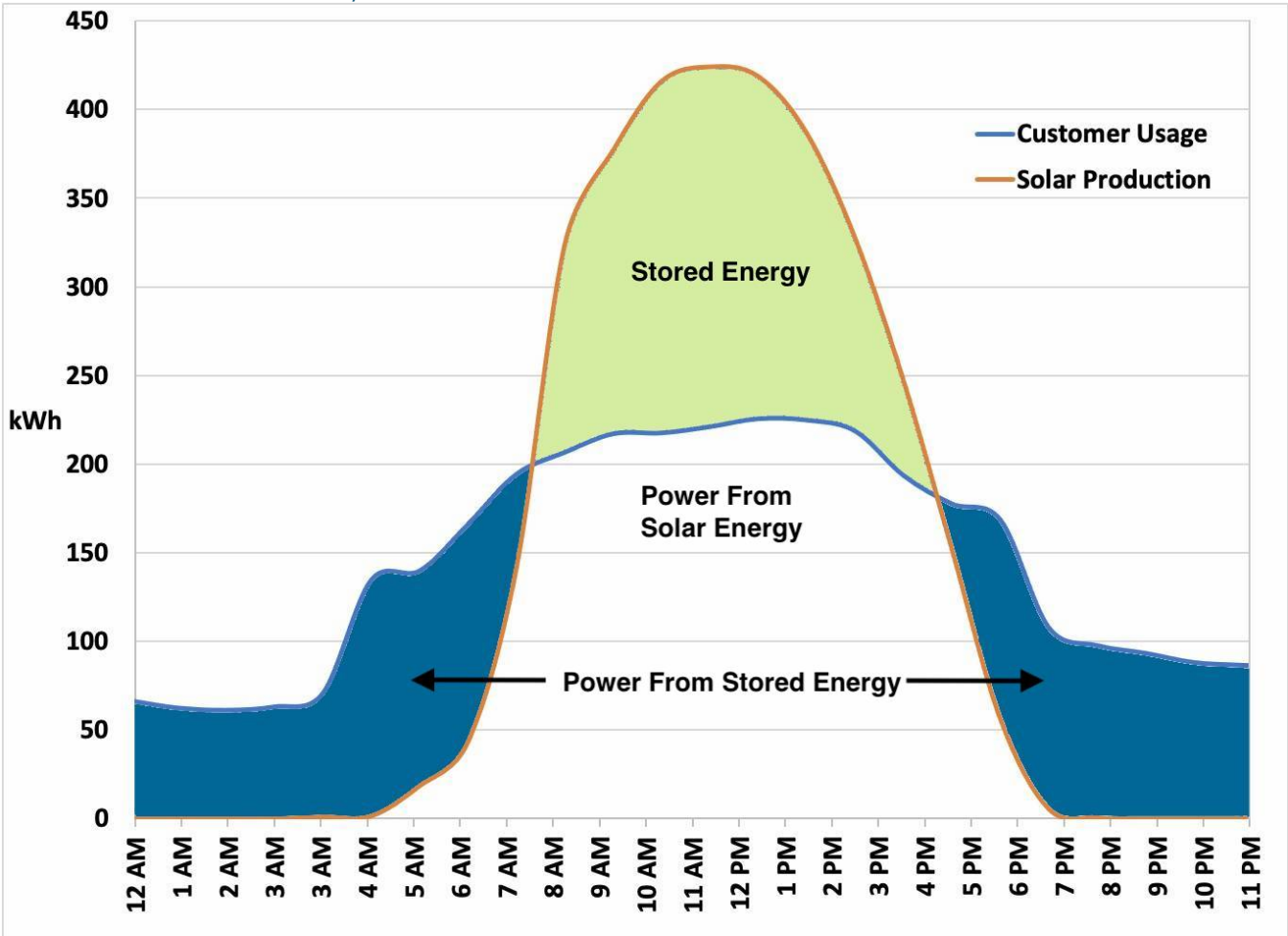
Regardless of whether back-up energy is provided by the microgrid to all loads or critical loads only, a means to isolate the site from the distribution grid (typically a transfer switch or equivalent) and a controller that optimizes the performance of the microgrid are required. The costs associated with a typical transfer switch (or equivalent) and microgrid controller is estimated to be approximately \$50,000 per interconnection point.

TOTAL BACKUP CAPACITY (NIGHT-TIME) = RATED CAPACITY OF THE BATTERY SYSTEM (kW)

TOTAL BACKUP DURATION (NIGHT-TIME) = RATED DURATION OF THE BATTERY SYSTEM (HRS)

TOTAL BACKUP CAPACITY (DAY-TIME) = RATED CAPACITY OF THE BATTERY SYSTEM (kW) + SOLAR PV SYSTEM OUTPUT (kW)

FIGURE 7: ENERGY CONSUMPTION AND SOURCES IN A MICROGRID





## 6 FINANCING OPTIONS

### 6.1 SGIP INCENTIVES OVERVIEW

The CPUC offers the Self-Generation Incentive Program (SGIP) that provides funding to support existing, new, and emerging distributed energy resources (DERs) installed on the customer's side of the utility meter. Qualifying technologies include wind turbines, waste heat to power technologies, pressure reduction turbines, internal combustion engines, microturbines, gas turbines, fuel cells, and advanced energy storage systems (including batteries). There are 5 "Steps" that categorize the funding levels for certain DER types and sizes, and the different budgets that apply to various types of customers. The rebate is administered through program administrators throughout the State, in this case, PG&E.

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#### INCENTIVE LEVELS

There are four SGIP incentive levels for municipal battery energy storage projects, based on the facility type and geographical location of the site:

- General Market Large-Scale Storage
- General Market Resiliency Adder
- Equity
- Equity Resiliency

Please see below for current availability.

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#### ELIGIBILITY

All customers are eligible for a General Market Large-Scale Storage incentive level.

To qualify for the SGIP Resiliency Adder, the site must qualify as a "critical facility", and either be located in or serve a high fire threat district (HFTD) or have experienced 2 more discrete Public Safety Power Shutoff (PSPS) events. Qualified critical facilities include: police & fire stations, emergency response providers, emergency operations centers, 911 call centers, hospitals & health care facilities, public and private gas, electric, water, wastewater or flood control facilities, jails and prisons, cooling centers, homeless shelters, independent living centers, food banks, small business grocery stores, or locations designated by the utility to provide assistance during power shutoffs.

To qualify for SGIP Equity, the site must be located in a low-income designated community or a designated disadvantaged community. To qualify for SGIP Equity Resiliency, the site must be located in or serve a HFTD or have experienced 2 or more PSPS events, and is a "critical facility" that serves a low-income or disadvantaged community and that is in HFTD or has experienced two or more PSPS events.

## PROGRAM STATUS

SGIP generally can offset 30% of energy storage project costs but can offset potentially more, depending on a number of factors: the eligible SGIP budget, current incentive step level, consideration for taking the Investment Tax Credit (ITC) benefit, duration of the battery's discharge period (2hr, 4h, etc.), overall battery capacity, cycling and greenhouse emission requirements, and site specific installation costs.

Currently, PG&E's SGIP allocation is in step 3 for the Large-Scale Storage budget, and there is approximately \$25.7M in funding remaining in step 3 as of October 30, 2020. Step 3 incentive levels start at \$0.35/Wh and are adjusted downward with consideration for the factors mentioned above. The SGIP Resiliency Adder can provide an additional \$0.15/Wh in incentives on top of the Large-Scale Storage incentives for eligible sites. The SGIP Equity Resiliency budget is currently waitlisted, and the SGIP Equity is currently oversubscribed as of May 12, 2020.

TABLE 7: SGIP PROGRAM LEVELS & STATUS

	Large-Scale Storage	Resiliency Adder
<b>General Market</b>	\$0.35/Watt-hour \$350/kilowatt-hour	+ \$0.15/Watt-hour
<b>Equity</b>	Non-Residential Storage <b>WAITLISTED</b> \$0.85/Watt-hour \$850/kilowatt-hour	
<b>Equity Resiliency</b>	Residential and Non-Residential <b>WAITLISTED</b> \$1.00/watt-hour \$1,000/kilowatt-hour	

This analysis uses the Large-Scale Storage with the Resiliency Adder incentive due to the current lack of funding for the SGIP Equity Resiliency budget.

## IMPORTANT PROGRAM INFORMATION

The SGIP program continues to evolve rapidly. Current program information can be found on the PG&E website [www.pge.com/sgip](http://www.pge.com/sgip). SCP staff are available to provide updates on the program and advise customers. Additionally, it is important to note, that the SGIP incentive is performance based. 50% of the incentive value is provided in year 1 of operation, with 10% each year for the next 5 years, as long as the battery cycles at least 104 times per year.

In order to submit an application for an SGIP incentive, an incentive application fee of 5% of the requested incentive amount is required. The incentive application fee is required to be paid once a project is notified of

incentive award and is refunded once the project is constructed. The anticipated SGIP application fee for each project is shown below:

TABLE 8: SGIP APPLICATION FEE

Site Name	SAID	Site Address	Proposed Battery System Size (kW / kWh)	SGIP Application Fee (\$)
Police Department	XXXX507311	203 W Sierra Ave, Cotati CA	43 kW / 232 kWh	\$5,050

## 6.2 OTHER INCENTIVES OVERVIEW

### INVESTMENT TAX CREDITS

Federal incentives for battery energy storage systems are available in the form of investment tax credits, known as the Investment Tax Credit (ITC) when the battery energy storage system is paired with a new renewable energy system (such as a solar PV system). In addition, in order to be eligible for the ITC, the battery energy storage system and solar PV system must be owned by the same tax-qualified entity and the battery energy storage must be charged a minimum of 75% of the time on an annual basis by the paired solar PV system. Battery energy storage systems that are charged by solar PV systems between 75% and 100% of the time will receive the equivalent percentage of the ITC value. In City of Cotati's case, since the City is a public agency, they are not eligible to receive the ITC directly, thus the ITC can only be realized under the third-party ownership model.

Not all project costs are eligible for ITC considerations, however Internal Revenue Services (IRS) rules allow for some level of interpretation, and each company makes an independent assessment of what costs are considered eligible based on the final project requirements, inclusions, and investor risk profile. The ITC is currently set to decrease from its current 26% value at the end of 2020 to 22% starting January 1, 2021. The ITC will remain at 10% indefinitely starting in 2022 for commercial projects without a change in current legislation. Starting construction for a project before the designated date of change in ITC value will maintain eligibility for the relevant ITC level (i.e. to achieve the 26% credit, construction must be started prior to the end of 2020).

In addition to the ITC, the IRS allows for accelerated depreciation through the Modified Accelerated Cost-Recovery System (MACRS). Without consideration for a paired renewable energy system to charge the battery energy storage system, a battery energy storage system may be eligible for the 7-year MACRS. When paired with an eligible renewable energy system and meeting the minimum 75% charging requirement, the 5-year MACRS should be available.

### DEMAND RESPONSE REVENUE OPPORTUNITIES

A future revenue opportunity for the City of Sonoma's battery energy storage systems might be demand response programs, such as Sonoma Clean Power's [GridSavvy Community](#). Programs like the GridSavvy Community allow Sonoma Clean Power to dispatch a group of grid-connected technologies such as battery storage systems as an alternative to purchasing expensive, carbon-intensive power in wholesale electricity markets. By participating in wholesale energy markets—either directly with a demand response provider or

through a utility sponsored program—battery energy storage system owners have the opportunity to shift load when demand for energy is high (i.e.: during peak hours) and thereby receive financial incentives for providing balance to the electric grid.

Although these additional revenue streams have been available for a long time, knowledge about this is limited, and thus participation in the wholesale markets by customers is currently limited. Additionally, there is typically some certainty around the amount and timing of the additional revenue streams, and hence have not been considered in our financial analysis.

A recent study by the Smart Electric Power Associated (SEPA) and prominent technology vendors in the industry currently consider these alternative revenue streams as reliable enough to justify the cost of a battery energy storage system under a third-party ownership model. The Demand Response (DR) marketplace, business models, technology solution is also rapidly changing making it harder to identify the right solution for the City of Sonoma. Given the current evolution of the market, the ideal way to find a partner willing to consider all potential revenue streams for a battery energy storage system is through a competitive solicitation process that clearly outlines the market considerations and revenue streams to be considered by participants.

### 6.3 BATTERY ENERGY STORAGE SYSTEM FINANCING OVERVIEW

There are two main ownership and financing options available for battery storage system projects: direct ownership and third-party ownership.

**Direct Ownership:** Under a direct ownership scenario, the customer finances and owns the battery storage system asset(s). There are several options that can be used individually or collectively to achieve full project funding for direct ownership.

- a) **Cash** - Battery storage systems can be purchased outright when the facility owner/operator possesses available capital in reserves or other liquid assets. Purchasing a battery system project using cash can have the additional benefits:
  - i) allows faster and more streamlined installation process that sidesteps potentially time-consuming third-party financing approval processes; and
  - ii) provides the potential for greater savings by avoiding third-party financing expenses and interest costs. It is important to also consider estimated operations and maintenance costs when comparing project financing options. In a cash purchase scenario, the facility owner/operator is responsible for the scope and cost of system operation, maintenance, warranty support and equipment replacement over the anticipated EUL of the system (typically 10 years).
- b) **Loans** - For facility owners/operators who do not possess upfront capital, a loan can provide the necessary funds to allow for a direct purchase. Loans can be obtained directly from a preferred lender or alternatively many battery storage system vendors also have approved lending partners that are familiar with battery storage system projects.

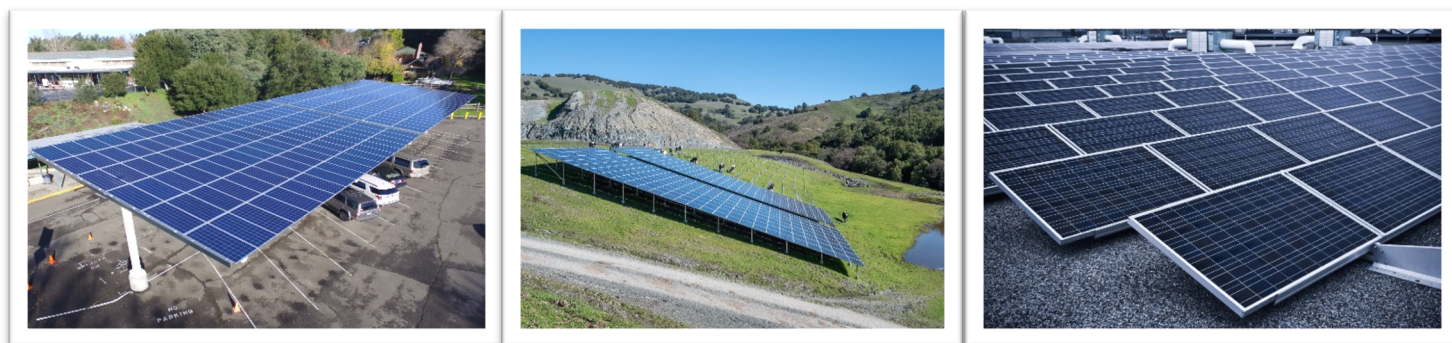
### ***Third Party Ownership:***

The third-party ownership model for battery systems provides direct demand cost savings to the customer without capital investment or operation and maintenance responsibilities. In this scenario all applicable SGIP incentives are retained by the third-party owner, who uses the incentives to help offset the cost of installation and on-going maintenance. In addition to SGIP incentives, discussed in Section 6.1 above, the system owner may receive revenues by requiring the customer to pay for a portion of the kW demand reduction based on a \$/kW rate determined at the time of contract signing, or through an arrangement where the monthly utility demand cost savings are shared ("split") between the customer and the system owner.

## **6.3 SOLAR FINANCING OVERVIEW**

This section explores the different ownership and financing options available for the solar PV installations, including direct ownership and third-party ownership.

FIGURE 8: SAMPLE SOLAR INSTALLATION<sup>1</sup>



<sup>1</sup>Image from iStock

## **SOLAR PV OWNERSHIP AND FINANCING**

***Direct Ownership:*** Under the direct ownership scenario, the solar PV system is purchased with available cash, or is financed using different loan structures. There are several options that can be used individually or collectively to achieve full project funding under a direct ownership scenario.

- a) **Cash** - PV systems can be purchased outright when the facility owner/operator has the capital available in reserves or other liquid assets. For tax-paying entities with tax liabilities, this procurement path allows the use of the Federal Investment Tax Credit (ITC), which can offset up to 30% of the gross capital cost of the project in the form of a direct tax credit in the tax year the system(s) is completed and commissioned. Purchasing a solar PV system using cash can have the additional benefits: i) allows for a faster and more streamlined installation process that sidesteps the potentially time-consuming third-party financing approval process; and ii) provides for improved project economics by avoiding loan costs and interest expenses associated with debt servicing. It is also important to consider operating costs when comparing project financing options. In particular, projects purchased through direct procurement options require the system owner perform all necessary operation maintenance and equipment replacement for the PV system

over the anticipated estimated useful life (EUL) of the system (25 years or more). Operations, maintenance and warranty support can be self-performed, or a third-party asset management firm can be contracted to perform these services.

- b) **Loans** - For facility owners/operators interested in owning a solar PV system, but lacking the upfront capital for the purchase, a loan can provide the necessary funding. Loans can be obtained from a preferred lender, or alternatively many solar PV system vendors have approved lending partners that are familiar with financing solar PV projects.

**Third-Party Ownership:** Under a third-party ownership scenario, an outside entity (typically a private sector tax paying entity that can benefit from the ITC) finances and owns the solar PV asset(s), thus requiring little or no upfront capital cost by the facility owner/operator. Most third-party financing strategies also provide an optional path to direct ownership over the term of the contract.

- a) **Power Purchase Agreements (PPA)** - Under a PPA contract, the customer enters into an agreement with a private company who finances, installs, owns, operates and maintains the PV system for a set contract term (typically 20, 25, or 30 years). The customer agrees to purchase all of the energy generated by the system for a negotiated PPA rate. Typically, the PPA rate (expressed as cents per kWh or "\$/kWh") is lower than the utility cost of electricity (referred to as the avoided cost, or what the energy would otherwise cost to purchase from PG&E in the absence of the solar PV system). PPA rates can be either fixed (0% annual escalation) for the term of the agreement or can use annual escalators to keep the PPA rate artificially lower in the early years of the agreement. Historically, the cost of purchasing energy from PG&E has escalated over time; thus, a PPA rate with a 0% escalator provides a hedge against the anticipation of rising energy prices.

A performance guarantee aligned with the term of the PPA is typically included to ensure that if the solar PV project does not perform as expected potentially reducing the expected savings to the facility owner/operator (the PV system host), a payment will be made by the third-party owner to address a portion of the lost savings based on the shortfall in production on an annual basis.

For public agencies (and non-profit entities) who do not possess tax-liability or sufficient tax-appetite to monetize the available tax credits, a PPA financing strategy allows the third-party financier/system owner to monetize the tax incentives, and pass a portion of the savings benefit to the host customer in the form of a lower PPA rate(s). All PPA contracts should include certain buyout provisions that allow the host customer to purchase the PV system at a depreciated value ("fair market" value) after the financiers have consumed the tax benefits (typically at the end of the sixth year of operation, or at other pre-defined periods of the PPA contract term). Exercising a buyout option during the PPA can provide added savings potential, however the added cost of maintenance, warranty support, insurance, and other owner-related costs (along with the cost of capital or financing) should be closely evaluated when considering taking over ownership.

At the end of the term of the PPA, the customer has the option to purchase the system, renew the PPA for additional years (typically 5 years), or have the system removed.

- b) **Leases** - Equipment leasing is a common method for facility owners/operators to finance certain hard assets associated with the PV system. Similar to the PPA, there is a monthly payment to the equipment owner, but

unlike a PPA the monthly payment is tied to the system installation cost versus the operation of the system over time. Typically, the lease payment is offset by the savings on the customer's electricity bills. At the end of the lease agreement (typically 15-20 years), the customer has the option to purchase the system, renew the lease, or have the system removed.

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## SOLAR INCENTIVES

**Investment Tax Credit:** Federal incentives for solar PV systems are provided in the form of investment tax credits, known as the Solar Investment Tax Credit (ITC). The ITC provides a 26% tax credit based on the capital value of the installed solar PV investment. Not all project costs are eligible for ITC considerations, however Internal Revenue Services (IRS) rules allow for some level of interpretation, and each company makes an independent assessment of what costs are considered eligible based on the final project requirements, inclusions, and investor risk profile. The ITC is currently set to decrease from its current 26% value at the end of 2020 to 22% starting January 1, 2021. The ITC will remain at 10% indefinitely after 2021 for commercial projects without a change in current legislation. Starting construction for a solar PV project before the designated date of change in ITC value will maintain eligibility for the relevant ITC level (i.e. to achieve the 26% credit, construction must be started prior to the end of 2020).

In addition to the ITC, the IRS allows for accelerated depreciation of solar assets through the Modified Accelerated Cost-Recovery System (MACRS). The MACRS allows for a class life of five years for solar PV systems, meaning the solar PV asset may be fully depreciated in only five years.

**Renewable Energy Credits (RECs):** RECs are the environmental attributes associated with the production of electricity from a renewable resource. One REC represents the environmental attributes associated with 1.0 MWh of electricity generated by a qualified and registered renewable energy source. A REC generated from an onsite solar PV can be sold into a REC trading market either "bundled" with its underlying energy or "unbundled" as a separate commodity from the energy itself. Once unbundled, the energy associated with the unbundled RECs may no longer be claimed as renewable or "green" energy. RECs can be traded in the Voluntary Market, which includes RECs purchased by private and public entities in fulfillment of sustainability goals. An example would be a corporation reducing their carbon footprint by purchasing RECs to offset nonrenewable energy supplied to their facilities by local energy retailers. Currently, the value of RECs from Distributed Generation projects in California is approximately \$9.00 to \$10.00 per REC. Due to the relatively low value, especially for smaller projects, the administrative costs of registering, certifying, and taking RECs to market may be cost prohibitive in California.

## 7 BATTERY ENERGY STORAGE SYSTEM FEASIBILITY ANALYSIS RESULTS

Based on the load and consumption profiles of the Police Department that was investigated in this study, the table below displays the proposed battery energy storage system size to pair with the existing solar PV system. This battery energy storage system size is based on maximizing the SGIP incentive, in order to allow for the most financial benefits. Additionally, Table 9 displays the proposed solar PV system sized to offset 85% of the site load. Table 9 also presents the duration these systems will provide resiliency on the worst-case day.

**TABLE 9: SOLAR & BATTERY SYSTEM COMPONENT SIZING, COSTS AND BACK-UP POWER DURATIONS**

SITE NAME / SCENARIO	Resiliency Benefit (%) <sup>1</sup>	PROJECTED DURATION MET BY MICROGRID ON WORST DAY <sup>2</sup>	SOLAR PV SYSTEM SIZE (KW DC)	PROPOSED SYSTEM SIZE (KW AC)	PROPOSED SYSTEM SIZE (KWH)	CAPITAL COST <sup>3</sup> (\$)
POLICE DEPARTMENT / EXISTING SOLAR PV	64.8%	11 HOURS	30	43	232	\$261,391
POLICE DEPARTMENT / PROPOSED SOLAR PV	86.2%	17 HOURS	108	43	232	\$591,113

<sup>1</sup>Resiliency Benefit represents the probability of supporting 100% of the load for a 12-hour outage. This value is determined by taking the average probability amongst random days using historical consumption from February 2019 through January 2020, assuming the battery is 100% charged at the start of the outage and the solar PV system will produce 75% of its anticipated production.

<sup>2</sup>Worst day is the day with the highest consumption (kWh) using historical consumption data from February 2019 through January 2020. The durations provided assume that the battery is 100% charged at the start of the outage and the applicable solar PV system will produce 75% of its anticipated production.

<sup>3</sup>This is an estimate of the capital cost for: (i) the proposed battery energy storage system; and (ii) the micro-grid controller and transfer switch. It does not include costs for load management or labor costs for electrical work that may be required to implement these systems as a microgrid.



TABLE 10: BATTERY SYSTEM COSTS &amp; SAVINGS

SCENARIO	SYSTEM PURCHASE COST <sup>1</sup> (\$)	SGIP INCENTIVE <sup>2</sup> (\$)	EST. YR 1 GROSS BENEFITS (\$)	EXPECTED YR 1 OPERATION COSTS (\$)	EST. YR 1 NET BENEFITS <sup>3</sup> (\$)	CUMULATIVE NET CASH POSITION (YR 15 / 25) (\$)
CASH PURCHASE / EXISTING SOLAR PV	\$261,391	\$101,000	\$3,720	\$3,529	\$191	(\$152,599)
CASH PURCHASE / PROPOSED SOLAR PV	\$591,113	\$101,000	\$31,858	\$8,060	\$23,798	\$267,316
THIRD PARTY OWNERSHIP / EXISTING SOLAR PV	BY PROVIDER	TO PROVIDER	\$3,720	\$21,682	(\$17,962)	(\$259,636)
THIRD PARTY OWNERSHIP / PROPOSED SOLAR PV	BY PROVIDER	TO PROVIDER	\$31,858	\$39,572	(\$7,714)	\$187,239

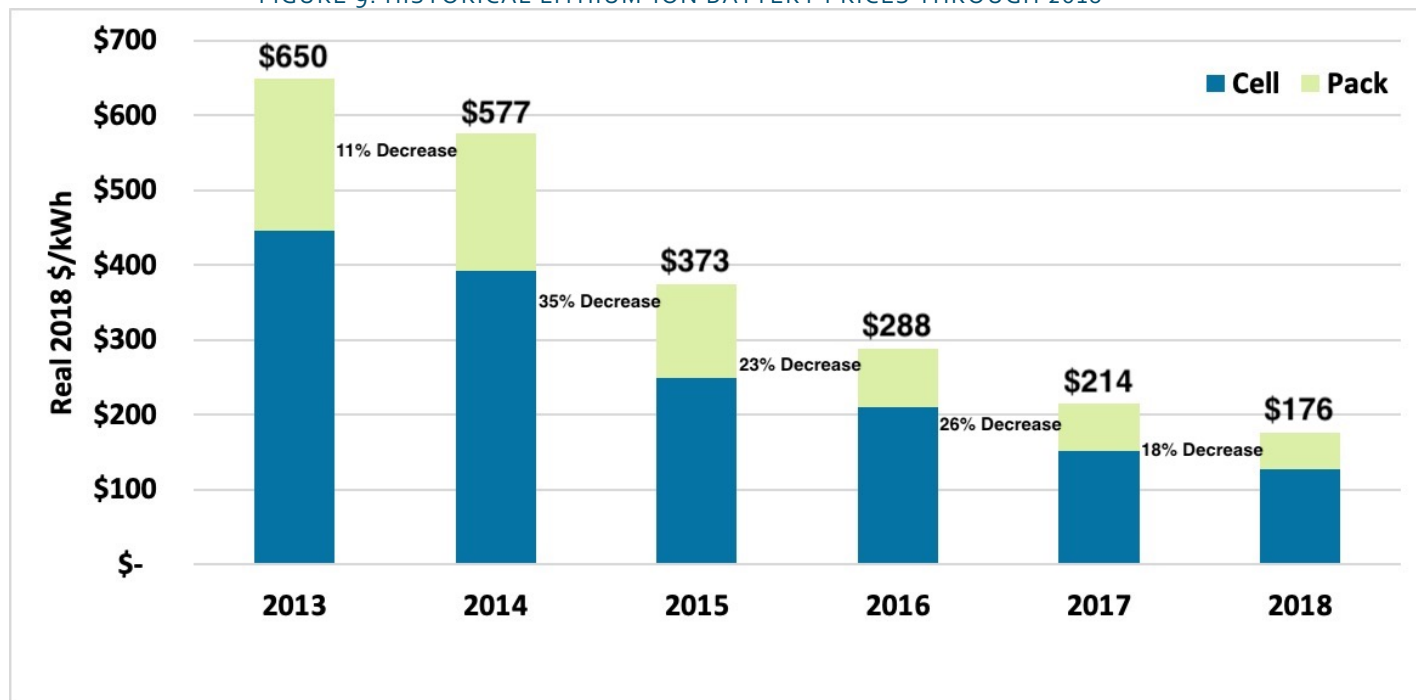
<sup>1</sup>System Purchase costs include: (i) the proposed battery energy storage system, (ii) the micro-grid controller switch, and all installation-related costs. It does not include costs for load management or added electrical work that may be required to reconfigure the existing interconnection to facilitate the microgrid.

<sup>2</sup>Assumes the Large-Scale Storage Budget with the Resiliency Adder due to the current lack of funding for the SGIP Equity Resiliency budget.

<sup>3</sup>Does not include SGIP.

The above tables present the overall findings of the battery energy storage system analysis. Utilizing lithium-ion batteries and their current market value, the cost of a micro-grid controller and transfer switch, and installation costs, the system purchase cost of \$261,391 was determined for just adding the battery energy storage system. In the case where a larger solar PV system is proposed, the purchase cost for all of the above plus the larger solar system was determined to be \$591,113. While it is expected that current battery energy storage system market prices will continue to decrease, the market is seeing a plateau in these prices, as can be seen in Figure 9 below.

FIGURE 9: HISTORICAL LITHIUM-ION BATTERY PRICES THROUGH 2018



Data Source: Bloomberg NEF, <https://about.bnef.com/blog/behind-scenes-take-lithium-ion-battery-prices/>

This analysis also assumes the battery energy storage system will charge from the energy produced by the solar PV system providing for the option to use the stored energy from the battery energy storage system to offset the site's energy usage at times when the utility electricity rate is more expensive – called “energy arbitrage”. In doing so, this could impact the green-house-gas (GHG) emissions associated with the energy consumption at the site in a couple of ways. By charging from the solar PV system, the battery energy storage system may be reducing the amount of zero emission energy the site is receiving during the day from the existing solar PV system, which may result in slightly higher equivalent GHG emissions during the day given that more energy would be consumed from the utility grid. However, by discharging the batteries during the more expensive hours, which usually also coincide with the hours of the day in which the electric grid has the most GHG emissions, the batteries could be reducing the sites overall GHG emissions by reducing the amount of energy required from the grid when the distributed energy has a higher GHG content.

The year 1 utility bill savings values presented in Table 10 are determined utilizing the results of the rate change analysis. The Police Department's savings values are based on the assumption that the rate change to A-10 TOU will occur before the battery energy storage system installation. Additionally, the analysis assumes utility rates will increase by 3% each year based on a conservative approach using historical data. The actual escalation value depends on the specific rate schedule, and actual escalation rates may differ from this assumption. Figures 10 and 12 represents the cumulative cash position of the projects under a cash purchase scenario, while Figures 11 and 13 represents the cumulative cash position under a third-party ownership scenario.

FIGURE 10: BATTERY ENERGY STORAGE SYSTEM CASH PURCHASE CUMULATIVE CASH POSITION

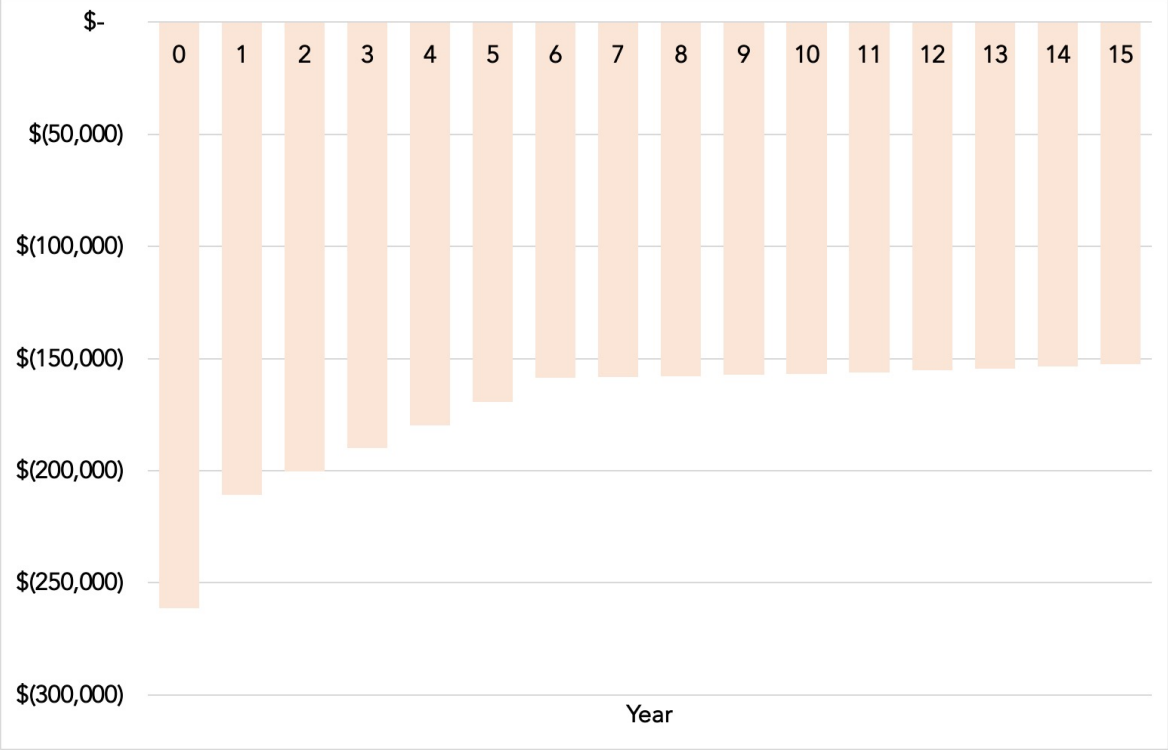


FIGURE 11: BATTERY ENERGY STORAGE SYSTEM THIRD-PARTY OWNERSHIP CUMULATIVE CASH POSITION

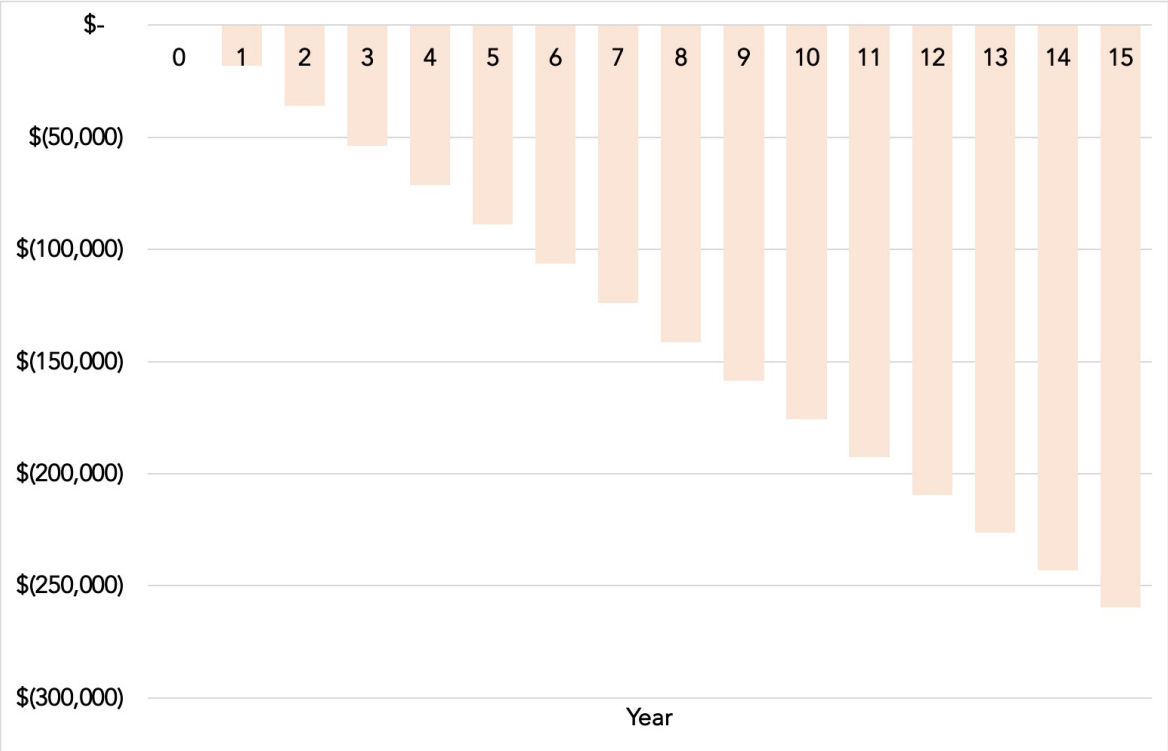


FIGURE 12: BATTERY ENERGY STORAGE SYSTEM & SOLAR PV CASH PURCHASE CUMULATIVE CASH POSITION

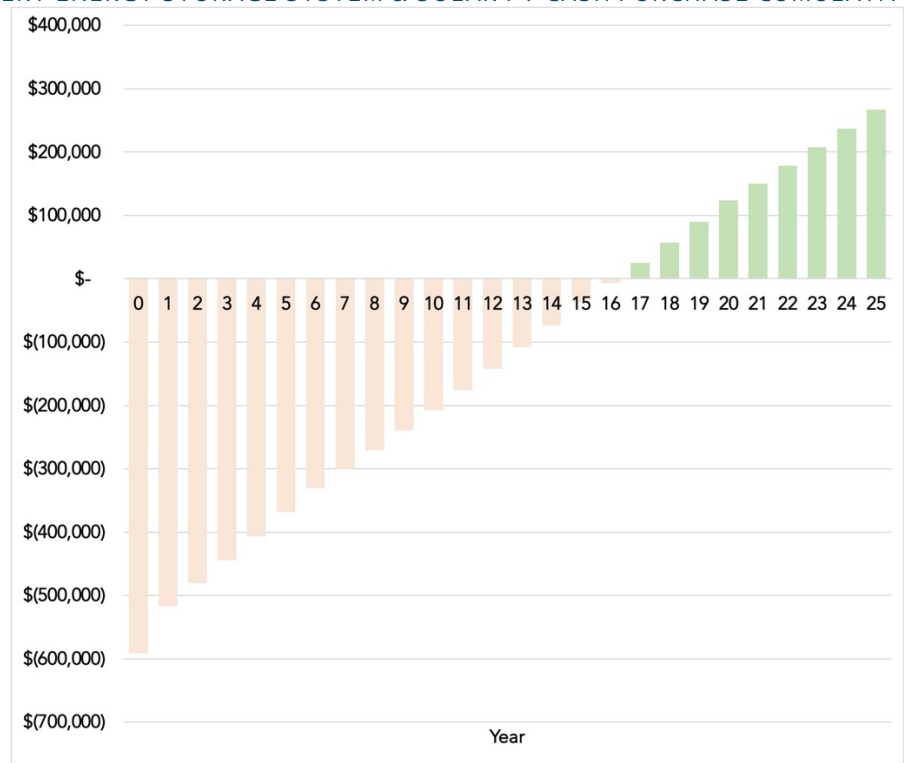
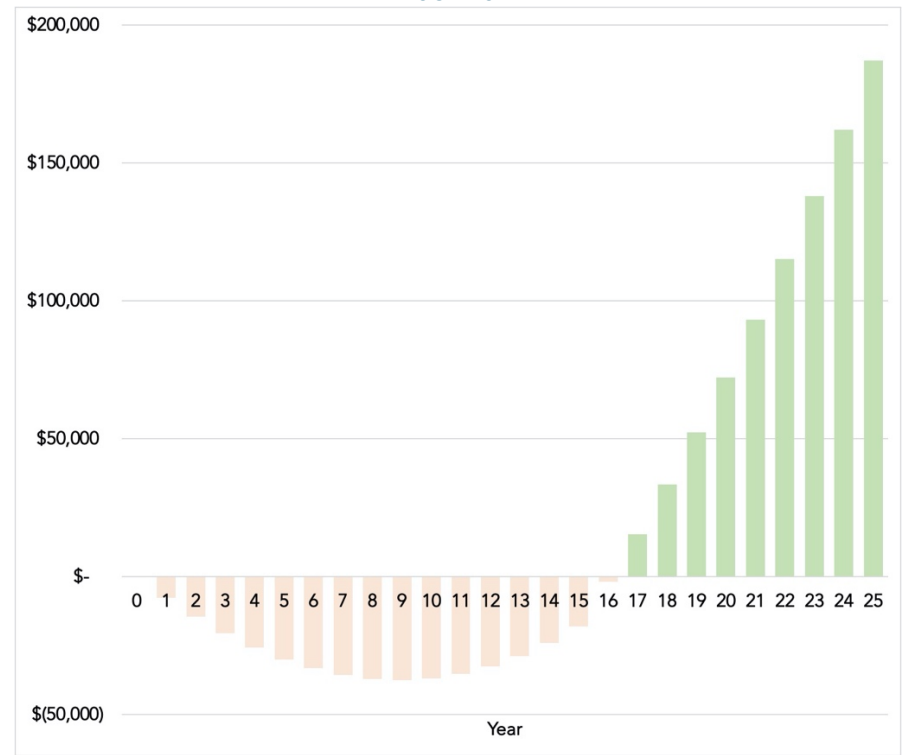


FIGURE 13: BATTERY ENERGY STORAGE SYSTEM & SOLAR PV THIRD-PARTY OWNERSHIP CUMULATIVE CASH POSITION



## 8 CONCLUSION

TerraVerde's financial analysis for the proposed battery energy storage system/microgrid project when added to the existing solar PV system resulted in a projected cumulative cash position of (\$152,599) over the life (warranty period) of the system in the case of the cash purchase scenario which yielded the highest cumulative net cash position. The analysis for the battery energy storage system/microgrid project when considering a new and larger solar PV system resulted in a projected cumulative cash position of \$267,316 over the life (warranty period) of the system in the case of the cash purchase scenario which yielded the higher cumulative net cash position. This analysis does not include other cost savings that may be site specific benefits from resiliency or take into account other backup power costs associated with fossil fuel generators. Given the relatively small size of the proposed battery energy storage system and the associated costs, the cumulative net cash position for these projects is primarily a result of insufficient SGIP incentives and projected utility bill demand savings (kW) to offset the costs of the battery energy storage system. Adding a larger solar PV system will not only have the benefit of providing additional financial savings, it also provides additional financing resiliency and allows the paired battery energy storage system to be eligible for the ITC if installed under a third-party ownership scenario. The results of the analysis are summarized in the table below.

TABLE 11: PROPOSED RATES, SYSTEM SIZING, INCENTIVES & SAVINGS UNDER A CASH PURCHASE SCENARIO

SITE / SCENARIO	CURRENT RATE	IDEAL RATE <sup>1</sup>	ANNUAL SAVINGS FROM RATE CHANGE (\$)	EXISTING SOLAR PV SIZE (KW DC) / PROPOSED SOLAR PV SIZE (KW DC)	PROPOSED BATTERY SYSTEM SIZE (KW AC)	RESILIENCY BENEFIT (%) <sup>2</sup>	SGIP INCENTIVE <sup>3</sup> (\$)	CUMULATIVE NET CASH POSITION (YR 15 / 25) (\$)
TRAIN STATION	A-6	A-6	N/A	12	N/A	-	N/A	N/A
POLICE DEPARTMENT / CURRENT SOLAR PV	A-10	A-10 TOU	\$943	30	43	64.8%	\$101,000	(\$152,599)
POLICE DEPARTMENT / INCREASED SOLAR PV	A-10	A-10 TOU	\$943	108	43	86.2%	\$101,000	\$267,316

<sup>1</sup>Ideal rates are assumed to be the rate that provides the lowest annual energy bill based on both PG&E and SCP costs.

<sup>2</sup>Resiliency Benefit represents the probability of supporting 100% of the load for a 12-hour outage. This value is determined by taking the average probability amongst random days using historical consumption from February 2019 through January 2020, assuming the battery is 100% charged at the start of the outage and the solar PV system will produce 75% of its anticipated production.

<sup>3</sup>Assumes the Large-Scale Storage Budget with the Resiliency Adder due to the current lack of funding for the SGIP Equity Resiliency budget.

In the first portion of the analysis it is determined that the Police Department would benefit from a rate change to A-10 TOU. In the battery energy storage system portion of the analysis, it is assumed this rate switch has taken place when determining the financial impacts of the addition of a battery energy storage system. It was found that the battery energy storage system does not provide financial savings from bill savings sufficient to offset the cost of the battery energy storage system. However, the battery energy storage system can provide resiliency, as can be seen in Table 11, this battery energy storage system has roughly a 70% probability of supporting 100% of the anticipated site load for a 12-hour outage.

Additionally, this first assessment was conducted assuming the existing solar PV system remains in place. The standard life of a PV system is 25 years, although they may last longer. Given that operational data was not available, it is difficult to assess the condition of the system and its output. It is suggested that the City install monitoring equipment to assess operational status of the solar PV systems before determining if there would be a benefit from replacement. Solar panel efficiencies have increased significantly over the past 17 years; thus, a new solar PV system of the same size would take up less space. The second battery energy storage system assessment included an assessment to replace the existing solar PV system with a new larger system. Under this scenario, the new systems together can provide financial benefit over the system life and increases the probability of resiliency in the case of an outage.

There are also additional potential revenue streams that were not included in this analysis. These have to do with virtual power plants (VPPs) and demand response programs. VPPs are networks of local energy storage devices that may be centrally controlled by a Load Serving Entity (LSE) to dispatch power as an alternative to purchasing power in wholesale electricity markets. VPPs can also dispatch excess power to sell into the wholesale markets at times when wholesale prices are high. In addition, VPPs can store excess generation as an alternative to selling into wholesale markets when prices are low. Demand response programs are offered through direct contracts with local LSEs and the California Independent System Operator (CAISO). For example, in regions where existing LSE substations and distribution networks are experiencing high demand conditions and are deemed “unreliable” to support late afternoon and early evening demands for electricity, and/or are in locations where additional grid infrastructure is contemplated to resolve reliability concerns, energy storage systems may be contracted for use through an LSE demand response program.

Although these additional revenue streams are currently available, they have not evolved to the point where there is certainty around the amount and timing of the additional revenue streams, and hence have not been considered in our financial analysis. A limited number of vendors in the industry currently consider these alternative revenue streams as reliable enough to justify the cost of a battery energy storage system under a third-party ownership model, although this is also rapidly changing.

Given that the industry is evolving and there are a number of policy changes coming in the near future, it may be wise to run an RFP process to obtain pricing for the options explored in this report, including the battery energy storage system (with a specific request for all potential revenue streams to be explored for the battery energy storage system). An RFP process will provide the City the opportunity to verify the preliminary feasibility findings presented herein. A typical RFP process takes approximately 4-5 months, which includes running a comprehensive and transparent process, vendor selection, contract negotiations, and any required governing body approval. If successful, the RFP process would be followed by the design/construction phase of the project typically running between 7-10 months dependent on many of the key factors that can influence project schedule such as interconnection application and study processes, permitting, and the construction timeline for any Distribution Utility identified upgrades that may be required by the project. It may also be advantageous for the City to determine if any other agencies in the area surrounding the proposed project may be interested in a joint procurement process.

## 9 ADDITIONAL CALCULATIONS, ASSUMPTIONS AND REFERENCES

### 9.1 ASSUMPTIONS & CALCULATIONS

#### 9.1.A RATE ANALYSIS ASSUMPTIONS

- 1) PG&E meter 15-minute interval data was obtained from SCP for all PG&E meters.
- 2) The analysis shown in this report were calculated using the interval data, the PG&E tariffs made effective May 1, 2020, and the SCP tariffs made effective July 1, 2020.
- 3) The analysis shown in this report used 2013 vintage rates for the Power Charge Indifference Adjustment (PCIA) charges for the Police Department and the 2014 vintage rates for the Train Station.
- 4) The solar production data was estimated using PVWatts, weather data, and a solar production de-escalator of 0.05% per year based on the solar PV system size data provided by the City of Cotati given that operational data was unavailable.

#### 9.1.B BATTERY STORAGE SYSTEM ASSUMPTIONS

- Current market data for battery costs (recent similar projects)
- Installation date (2021)
- City's credit rating (assumed to be investment grade)
- Operation and Maintenance costs, Insurance costs, and warranty costs per industry standard

#### 9.1.C SOLAR PHOTOVOLTAIC SYSTEM ASSUMPTIONS

- System sizes: per modeling to obtain optimal financial benefit or based on available space for the PV system
  - Solar Technology: High efficiency PV modules and inverters
  - Interconnection: Per PG&E Rule 21 and NEM 2.0 tariff
  - Project cost estimates: current market data (recent similar projects)
  - Consumption & billing analysis using 15-minute interval data
  - PG&E and MCE annual cost escalation rate: 3%
  - PV system annual production degradation rate: 0.5% (industry standard default)
  - Solar energy generation profile: per PVWatts hourly production model
  - Assumed no array shading: vegetation / trees / other obstacles removed where they would shade the arrays
- PPA rates assumptions:
- Current market data for rates (recent similar projects)
  - Investor IRR requirements per market rates
  - Federal ITC of 26% + Accelerated Depreciation Schedule (based on start of construction before EOY 2020)
  - PPA term length (25yrs)
  - Performance Guarantee terms (95% of projected annual production on a weather adjusted basis)

- Installation date (2020)
- County's credit rating is assumed to be investment grade
- O&M costs, insurance costs, and extended warranty costs per industry standards (are the responsibility of the PPA provider and are incorporated into the PPA rate)
- Project Development costs (i.e.,: consultants, permitting, CEQA, legal, geotechnical, interconnection are assumed to be the responsibility of the PPA provider and incorporated into the PPA rate)
- PPA escalator of 0% (PPA escalators are typically used when/if the avoided cost is greater than the PPA rate in the 1st year)
- REC ownership and value (revenue): RECs retained by the County. The County can elect to sell the REC's for additional revenue or, alternatively, green brand.
- Asset Management Services (AMS) cost: \$0.01/kWh with a 3% annual escalation rate (oversight of PPA provider to ensure compliance with contract terms and performance guarantee agreement)



## 10 EXHIBITS

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### CASH FLOW SAVINGS PRO FORMAS

## **Attachment B**

City of Cotati Professional Services Agreement  
(Anticipated for the Preliminary Evaluation/IGA Work)

**CITY OF COTATI  
STANDARD  
PROFESSIONAL SERVICES AGREEMENT**

Accounts \_\_\_\_\_

THIS PROFESSIONAL SERVICES AGREEMENT (“Agreement”) is entered into and effective as of \_\_\_\_\_ (“Effective Date”), by and between the City of Cotati, a municipal corporation (“City”) and \_\_\_\_\_ (“Consultant”) (collectively, the “Parties”).

WHEREAS, the Parties enter into this Agreement for the purpose of Consultant providing professional services to City under the terms and conditions set forth herein.

THEREFORE, in consideration of the mutual covenants contained in this Agreement, the Parties agree as follows:

1. **Services.** Consultant shall provide the services as described in and in accordance with the schedule set forth in Exhibit A, attached hereto and incorporated herein (“Services”). At all times, Consultant shall act as a Consultant and shall not be an employee, officer, agent, partner, or joint venture of the City by virtue of this Agreement. Consultant acknowledges that Consultant: (1) is free from the control and direction of the City in connection with the performance of Services; (2) performs Services outside the usual course of the City’s business; and (3) is customarily engaged in an independently established trade, occupation, or business of the same nature as the Consultant performs for the City, and has the option to perform such work for other entities. Consultant shall have no authority to contract for other otherwise bind the City.
2. **Compensation**
  - A. For the full performance of the Services described in Exhibit A hereto City shall compensate Consultant on a time-and-materials basis at the compensation rates specified in Consultant’s Services Rate Schedule included as the last page of Exhibit A; provided, however, that total compensation for the full performance by Consultant of all Services under all Task Orders shall not exceed \_\_\_\_\_ (\$ \_\_\_\_\_), of non-reimbursable, public monies (monies not reimbursed through permit fees or developer deposits; said amount being referred to herein as the “not-to-exceed” amount).
  - B. Consultant shall submit detailed monthly invoices reflecting all services performed during the preceding month, and including a revised schedule for performance and additional documentation requested by City, as applicable.
  - C. Consultant shall be compensated for services in addition to those described in Exhibit A, only if Consultant and City execute a written amendment to this Agreement describing the additional services to be performed and the compensation to be paid for such services. In no case shall the total compensation

under this Agreement exceed the “not-to-exceed” amount specified in Paragraph A, above, without prior written authorization of the City Manager.

- D. City’s obligation to pay compensation to Consultant as provided herein is contingent upon Consultant’s performance of the Services pursuant to the terms and conditions of this Agreement and any amendments thereto. Notwithstanding any other provision herein, Consultant shall not be paid any compensation until Consultant has complied with the City's Business Registration Ordinance.
3. **Term.** The term of this Agreement commences on the Effective Date, and terminates on \_\_\_\_\_, unless sooner terminated in accordance with Section 4. Upon termination, any and all of City’s documents or materials provided to Consultant and any and all of the documents or materials prepared for City or relating to the performance of the Services, shall be delivered to the City as soon as possible, but not later than fourteen (14) days after termination of the Agreement.
4. **Termination.** City may terminate this Agreement without cause upon ten (10) days’ written notice. City may immediately terminate or suspend this Agreement for cause. Cause for immediate termination or suspension shall include, but not be limited to, any breach of this Agreement by Consultant or Consultant’s bankruptcy or insolvency. Upon receipt of notice of termination or suspension for cause, Consultant shall immediately stop all work in progress under this Agreement. In the event of early termination of this Agreement by City, Consultant shall be entitled to payment for all Services performed to the date of termination to the extent such Services were performed to the satisfaction of City in accordance with the terms and conditions of this Agreement. If City terminates this Agreement for cause, Consultant shall be liable to City for any excess cost City incurs for completion of the Services.
5. **Consultant’s Representation; Independent Contractor.** Consultant represents that Consultant possesses distinct professional skills in performing the Services. City has relied upon said representation as a material inducement to enter into this Agreement. Consultant shall, therefore, provide properly skilled professional and technical personnel to perform all Services under this Agreement. It is expressly understood that Consultant, its agents and employees shall act in an independent capacity and as an independent contractor and not as officers, employees or agents of City. This Agreement shall not be construed as an agreement for employment.
6. **Facilities and Equipment.** Consultant shall, at its sole cost and expense, furnish all facilities and equipment that may be required for furnishing Services pursuant to this Agreement. City shall furnish to Consultant no facilities or equipment, unless the City otherwise agrees in writing to provide the same.
7. **Licenses, Permits, Etc.** Consultant shall, at Consultant’s sole cost and expense, keep in effect at all times during the term of this Agreement any licenses, permits or other such approvals which are legally required for performing the Services.

8. **Time.** Consultant shall devote such time to the performance of the Services as may be reasonably necessary for satisfactory performance of Consultant's obligations pursuant to this Agreement.
9. **Inspection.** Consultant shall provide the City every reasonable opportunity to ascertain that the Services are being performed in accordance with the requirements and intentions of this Agreement. All work done and materials furnished, if any, shall be subject to inspection and approval by the City. The inspection of such work shall not relieve Consultant of any of its obligations pursuant to this Agreement.
10. **Progress Reports.** Upon the City's request, Consultant shall provide, in a form acceptable to City, written progress reports of all oral and written observations, opinions, recommendations, analyses, progress and conclusions related to Consultant's performance of the Services.
11. **Confidentiality.** In the course of providing services for City, Consultant may have access to trade secrets and confidential information, disclosure of which is protected or limited by law. Consultant shall not directly or indirectly disclose or use any such confidential information, except as required for the performance of the Services.
12. **Conflict of Interest.** Consultant represents that it presently has no interest, and covenants that it shall not acquire any interest, direct or indirect, financial or otherwise, which would conflict in any manner or degree with the performance of the Services hereunder. Consultant further covenants that, in the performance of this Agreement, it shall not employ any subconsultant or person having such a conflict of interest. Consultant represents that no one who has or will have any financial interest under the Agreement is an officer or employee of City. If such conflict of interest arises during this Agreement or any extension, Consultant will immediately advise City and City may, at its sole discretion, immediately terminate this Agreement.
13. **Consultant No Agent.** Except as City may specify in writing, Consultant shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent. Consultant shall have no authority, express or implied, pursuant to this Agreement to bind City to any obligation whatsoever.
14. **Standard of Performance.** Consultant shall perform all the Services in a manner consistent with the standards of Consultant's profession. All instruments of service of whatsoever nature, which Consultant delivers to City pursuant to this Agreement, shall be prepared in a substantial, first class and workmanlike manner and conform to the standards of Consultant's profession. All such instruments of service shall become the sole and exclusive property of City upon delivery of the same.
15. **Assignment/Transfer.** Consultant shall make no assignment or transfer in whole or in part of this Agreement shall be made without the prior written consent of City.
16. **Subconsultants.** Consultant shall directly perform all Services, and shall not subcontract any portion of performance of the Services without the prior written consent of the City. Any such subconsultants shall be required to comply, to the full extent

applicable, with the terms and conditions of this Agreement, including but not limited to, procuring and maintaining insurance coverage as required herein and which shall name City as an additional insured.

17. **Business Registration.** Consultant shall file a Business License Application as required by the City. The Administrative Services Department shall provide the Consultant with the required form. Consultant shall complete and file the form with the City and shall pay the business license fee before any payment for Services under this Agreement is rendered.
18. **Statement of Economic Interests.** The City may determine that the Consultant must file a Form 700, Statement of Economic Interests, as required by the City's Conflict of Interest Code. If such is the case, the City Clerk's office will provide the Consultant with form and Consultant shall file form with the City Clerk's office. Said filing shall include an Assuming Office Statement within thirty (30) days of execution of this contract, annual statements on or before April 1 of each year, and a Leaving Office Statement within thirty (30) days after termination of this Agreement or any extensions thereto.
19. **Internal Revenue Service Form W-9.** Consultant must file an Internal Revenue Service Form W-9, Request for Taxpayer Identification Number and Certification, as required by the City to comply with regulations of the United States Department of the Treasury. If such is the case, the Administrative Services Department shall provide the Consultant with the required form. Consultant shall complete and file the form with the City before any payment for Services under this Agreement is rendered.
20. **Compliance With All Laws.** Consultant and any subconsultants shall fully comply with all applicable local, state and federal rules, laws, regulations and ordinances pertaining to performance of the Services required hereunder, including the Americans with Disabilities Act and any copyright, patent or trademark law. To the extent that any other government agency or entity provides compensation for any Services, Consultant shall comply with all rules and regulations applicable to such fiscal assistance. Consultant's failure to comply with any law(s) or regulations(s) applicable to the performance of the Services hereunder shall constitute a breach of contract.

Such laws include, but are not limited to, the California Prevailing Wage Law, California Labor Code section 1720 et seq. Because the services described in Exhibit A include "work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work," the services constitute a public works within the definition of section 1720(a)(1) of the California Labor Code. Therefore, the services described in Exhibit A shall be performed in accordance with all applicable requirements of the California Prevailing Wage Law including, but not limited to, all applicable requirements contained in Exhibit B, which is attached to and made a part of this Agreement. To the extent that any other government agency or entity provides compensation for any services, consultant shall comply with all rules and regulations applicable to such fiscal assistance."

21. **Discrimination.** During the performance of this Agreement, Consultant shall not discriminate against any employee or applicant for employment because of race, religion, creed, color, national origin, ancestry, gender, sexual orientation, age or physical or mental disability in violation of any applicable law.
22. **Notice.** Except as otherwise specified in this Agreement, all notices to be sent pursuant to this Agreement shall be made in writing, and sent to the Parties at their respective addresses specified below or to such other address as a Party may designate by written notice delivered to the other Party in accordance with this Section. All such notices shall be sent by:
- A. Personal delivery, in which case notice is effective upon delivery;
  - B. Certified or registered mail, return receipt requested, in which case notice shall be deemed delivered on receipt if delivery is confirmed by a return receipt;
  - C. Nationally recognized overnight courier, with charges prepaid or charged to the sender's account, in which case notice is effective on delivery if delivery is confirmed by the delivery service; or
  - D. Facsimile transmission, in which case notice shall be deemed delivered upon transmittal, provided that (a) a duplicate copy of the notice is promptly delivered by first-class or certified mail or by overnight delivery, or (b) a transmission report is generated reflecting the accurate transmission thereof. Any notice given by facsimile shall be considered to have been received on the next business day if it is received after 5:00 p.m. recipient's time or on a non-business day.

City: \_\_\_\_\_ Attn: \_\_\_\_\_  
City of Cotati  
201 West Sierra Ave.  
Cotati, CA 94931-4217

Consultant Attn: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

23. **Ownership of Documents.** All original papers, documents or computer material on disk or microfilm, and copies thereof, produced as a result of this Agreement, shall be the property of the City and may not be used by Consultant without the written consent of City. Consultant shall provide documents in electronic form in a format required by the

City. Copies of such documents or papers shall not be disclosed to others without the written consent of the City Manager or his or her designated representative.

24. **Internet-Ready Deliverables.** If applicable to this Agreement, each contract deliverable shall be delivered as a data file suitable for publication on the Internet. The following specifications define the formats that satisfy this requirement:
- A. Brochures, reports, plan documents, catalogues, flyers with graphics included, and forms are to be formatted as screen-optimized “.pdf” files, if possible.
  - B. Freestanding, individual graphics such as logos, small maps and photos are to be formatted as “.tif” files, with the largest side no larger than four inches.
  - C. Large maps are to be formatted as “.jpg” files with the largest side no larger than four inches, unless mutually agreed otherwise by the Parties.
  - D. Short text documents with no graphics are to be in MS Word.
  - E. Freestanding charts, graphs and listings are to be in MS Excel.
25. **Indemnification.** To the fullest extent allowed by law, Consultant shall indemnify, defend with counsel acceptable to City, and hold harmless City and its officers, officials, employees, agents and volunteers from and against any and all liability, loss, damage, claims, suits, actions, arbitrations proceedings, administrative proceedings, regulatory proceedings, civil penalties and fines, taxes, expenses and costs (including, without limitation, attorney's fees and costs and fees of litigation) (collectively, "Liability") of every nature, whether actual, alleged or threatened, arising out of Consultant's performance of the Services, its misclassification of its employees (as independent contractors) who provide services under this Agreement, or its failure to comply with any of its obligations contained in this Agreement, except to the extent such Liability caused by the sole negligence or willful misconduct of City or its officers, officials, employees, agents or volunteers.

The Consultant's obligation to defend and indemnify shall not be excused because of the Consultant's inability to evaluate Liability or because the Consultant evaluates Liability and determines that the Consultant is not liable to the claimant. The Consultant must respond within thirty (30) days to the tender of any claim for defense and indemnity by the City, unless this time has been extended by the City. If the Consultant fails to accept or reject a tender of defense and indemnity within thirty (30) days, in addition to any other remedy authorized by law, so much of the money due the Consultant under and by virtue of this Agreement as shall reasonably be considered necessary by the City, may be retained by the City until disposition has been made of the claim or suit for damages, or until the Consultant accepts or rejects the tender of defense, whichever occurs first.

With respect to third party claims against the Consultant, the Consultant waives any and all rights of any type to express or implied indemnity against the Indemnitees.



Notwithstanding the forgoing, to the extent this Agreement is a "construction contract" as defined by California Civil Code section 2783, as may be amended from time to time, such duties of Consultant to indemnify shall not apply when to do so would be prohibited by California Civil Code Section 2782.

Notwithstanding the foregoing, to the extent that this Agreement includes design professional services under Civil Code Section 2782.8, as may be amended from time to time, such duties of Consultant to indemnify shall only be to the full extent permitted by Civil Code Section 2782.8.

If any term of portion of this section is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, said section shall be interpreted to allow the broadest indemnity permitted by law.

This obligation to defend and indemnify City set forth here is binding on the successors, assigns or heirs of Consultant and shall survive the termination or completion of this Agreement or this section or final payment to the fullest extent and duration allowed by law.

The defense and indemnification obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.

26. **Insurance.** Consultant shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Consultant, Consultant's agents, representatives and employees.

A. Minimum Scope of Insurance. Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).
2. Insurance Services Office form number CA 0001 (Ed. 12/90) covering Automobile Liability, code 1 (any auto), or code 8, 9 if no owned auto.
3. Workers' Compensation Insurance as required by the State of California and Employers' Liability Insurance. If no employees are utilized, the Consultant shall sign a declaration as described in California Health and Safety Code Section 19825.
4. Errors and Omissions liability insurance appropriate to the Consultant's profession. Architects' and Engineers' coverage is to be endorsed to include contractual liability.

- B. Minimum Limits of Insurance. Consultant shall maintain limits no less than:
1. General Liability: \$2,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
  2. Automobile Liability: \$2,000,000 per accident for bodily injury and property damage.
  3. Employers Liability: \$1,000,000 per accident for bodily injury or disease
  4. Workers' Compensation, Statutory Limits: \$1,000,000 per accident for bodily injury or disease.
  5. Errors and Omissions liability: \$1,000,000 per occurrence or claim as approved by the City's Administrative Services Director.
- C. No Coverage Limitations or Restrictions. It shall be a requirement under this Agreement that any available insurance proceeds broader than or in excess of the aforementioned specified minimum insurance coverage requirements and/or limits shall be available to the Additional Insureds (defined below). Furthermore, the requirements for coverage and limits shall be (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured; whichever is greater.
- D. Deductibles and Self-Insured Retentions ("SIR"). All deductibles or SIR must be declared to and approved by the City and shall not reduce the limits of liability. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or SIR as respects the City, its officers, officials, employees and volunteers, or the Consultant shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or the City. City reserves the right to obtain a full certified copy of any insurance policy and endorsements. Failure to exercise this right shall not constitute a waiver of the right to so exercise later.
- E. Other Insurance Provisions. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions:

1. The City, its officers, officials, employees and volunteers (“Additional Insureds”) are to be covered as insureds as respects: liability arising out of work or operations as performed by or on behalf of the Consultant; or automobiles owned, leased, hired or borrowed by the Consultant.
  2. The Additional Insured coverage under Consultant’s policy shall be “primary and non-contributory” and will not seek contribution from the City’s insurance or self-insurance, and shall be at least as broad as CG 20 01 04 13.
  3. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, unless thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City.
  4. The Workers’ Compensation endorsement shall contain a Waiver of Subrogation against the City. The Consultant shall provide to the City an endorsement from the Worker’s Compensation insurer, if any, agreeing to waive all rights of subrogation against the City for injuries to employees of the Insured resulting from work for the City or use of the City’s premises or facilities.
  5. The limits of insurance required in this Agreement may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of City (if agreed to in a written contract or agreement) before the City’s own insurance or self-insurance shall be called upon to protect City as a named insured.
- F. Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best’s rating of no less than A:VII, unless otherwise acceptable to the City.
- G. Verification of Coverage. Consultant shall furnish the City with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements should be on forms provided by the City or on other than the City’s forms provided those endorsements conform to the City’s requirements. All certificates and endorsements are to be received and approved by the City before work commences. The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements affecting the coverage required by these specifications at any time.
- H. Subconsultants. Consultant agrees to include with all subconsultants in their subcontract the same requirements and provisions of this Agreement, including the indemnity and insurance requirements to the extent they apply to the scope of a subconsultant’s work. Subconsultants hired by Consultant agree to be bound to

Consultant and City in the same manner and to the same extent as Consultant is bound to City under this Agreement. Subconsultants shall further agree to include these same provisions with any sub-subconsultant. A copy of these indemnity and insurance provisions will be furnished by Consultant to a subconsultant on request. Consultant shall require all subconsultants to provide a valid certificate of insurance and the required endorsements included in their agreement prior to commencement of any work and Consultant shall provide proof of compliance to City.

27. **Amendment.** This Agreement may be amended only by a written instrument executed by both Parties.
28. **Litigation.** If litigation ensues between City and a third-party which pertains to the subject matter of Consultant's services hereunder, Consultant, upon request from City, agrees to testify therein at a reasonable and customary fee.
29. **Construction.** This Agreement is the product of negotiation and compromise on the part of both Parties and that the Parties agree that, notwithstanding Civil Code Section 1654, any uncertainty in the Agreement shall not be construed against the drafter of the Agreement.
30. **Governing Law; Venue.** This Agreement shall be enforced and interpreted under the laws of the State of California and the City of Cotati. Any action arising from or brought in connection with this Agreement shall be venued in a court of competent jurisdiction in the County of Sonoma, State of California.
31. **Non-Waiver.** The City's failure to enforce any provision of this Agreement or the waiver thereof in a particular instance shall not be construed as a general waiver of any part of such provision. The provision shall remain in full force and effect.
32. **Severability.** If any term or portion of this Agreement is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of this Agreement shall continue in full force and effect.
33. **No Third Party Beneficiaries.** The Parties do not intend to create, and nothing in this Agreement shall be construed to create, any benefit or right in any third party.
34. **Mediation.** The Parties agree to make a good faith attempt to resolve any dispute arising out of this Agreement through mediation prior to commencing litigation. The Parties shall mutually agree upon the mediator and shall divide the costs of mediation equally.
35. **Consultant's Books and Records.**
  - A. Consultant shall maintain any and all ledgers, books of accounts, invoices, vouchers, canceled checks, and other records or documents evidencing or relating to charges for services, or expenditures and disbursements charged to the City for a minimum period of three (3) years or for any longer period required by law,

from the date of final payment to Consultant pursuant to this Agreement.

- B. Consultant shall maintain all documents and records which demonstrate performance under this Agreement for a minimum period of three (3) years or for any longer period required by law, from the date of termination or completion of this Agreement.
  - C. Any records or documents required to be maintained pursuant to this Agreement shall be made available for inspection or audit, at any time during regular business hours, upon written request by the City Manager, City Attorney, City Finance Director, or a designated representative of these officers. Copies of such documents shall be provided to the City for inspection at Cotati City Hall when it is practical to do so. Otherwise, unless an alternative is mutually agreed upon, the records shall be available at Consultant's address indicated for receipt of notices in this Agreement.
  - D. Where City has reason to believe that such records or documents may be lost or discarded due to dissolution, disbandment or termination of Consultant's business, City may, by written request by any of the above-named officers, require that custody of the records be given to the City and that the records and documents be maintained by the City. Access to such records and documents shall be granted to any party authorized by Consultant, Consultant's representatives, or Consultant's successor in interest.
36. **Headings.** The headings used in this Agreement are for convenience only and are not intended to affect the interpretation or construction of any provisions herein.
37. **Survival.** All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating liability between City and Consultant shall survive the termination of this Agreement.
38. **Entire Agreement.** This Agreement, including the exhibits attached hereto and incorporated herein, constitutes the entire agreement between the Parties with respect to the Services, and supersedes all prior agreements or understandings, oral or written, between the Parties in this regard.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day, month and year first above written.

For City of Cotati:

For Consultant:

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Damien O’Bid  
City Manager

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Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Taxpayer ID: \_\_\_\_\_

Recommended for Approval:

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Angela Courter  
Director of Administrative Services

Recommended for Approval:

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Approved As to Form:

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John Bakker  
City Attorney

## **Attachment C**

PE/IGA Pricing Proposal

# PE/IGA Pricing Proposal

RFP

DESIGN-BUILD ENERGY SERVICES

Pursuant to and in compliance with your Notice Requesting Proposals and all other documents relating thereto, the undersigned respondent, having familiarized him/herself with the terms and conditions of the proposal documents, hereby proposes and agrees to perform the work to be done and to provide all labor and materials necessary to perform the work.

Name of Respondent: \_\_\_\_\_

## Preliminary Evaluation (PE)

If the respondent charges fees to perform a preliminary evaluation, please provide the price and indicate if it's waived if the City proceeds to the IGA.

\$ \_\_\_\_\_ Fees waived if the City proceeds to IGA? YES ☐ NO ☐

## Investment Grade Audit (IGA):

Does the respondent require an IGA agreement to be entered into before a Guaranteed Savings Agreement scope of work, price and savings can be finalized?

YES ☐ NO ☐

If an IGA agreement is required, does it include exit fees and/or penalties in the event the City chooses to not implement some or all of the IGA findings?

YES ☐ NO ☐

If the City implements some or all of the IGA findings with the proposer, is the price of the IGA waived?

YES ☐ NO ☐

What is the respondent's price to complete an IGA?

\$ \_\_\_\_\_

## Certification by proposer

I hereby certify that I am able to commit the firm to the proposal submitted.

Company: \_\_\_\_\_

Name (printed): \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_