

Energy Project Analysis Firm Offer Proposal

Main Office

05/28/2025

Prepared for: Dale Roberts
Principal Engineer
Sonoma Water

Prepared by: Tim McDuffie PE



**Sonoma
Water**

SCALE 
MICROGRIDS

Executive Summary

Key Takeaways



Solar + Battery Lifetime Savings: **\$917,705**



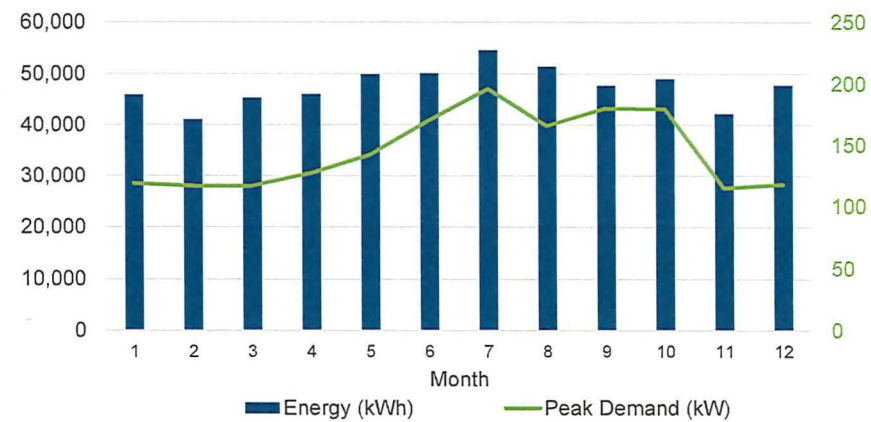
72+ Hours of Clean Energy Backup

Consolidated Load Analysis

Load Profile Analysis

Peak Load	196 kW
Average Load	65 kW
Annual Electricity Usage	571,216 kWh
Projected PG&E Rate	B-10
Projected Annual PG&E Costs	\$227,604
Proj. Cost per kWh (PG&E)	\$0.398

Load Profile Graph



Combined Load Profile for

Main Meter: 1009885172
Electric Vehicle Meter: 1010261710
Sub Meter: 1005720717

Asset Sizing and Footprint

Savings Plus Resiliency

Peak Load	196kW
Solar PV (kW DC)	356.4 Fixed Tilt
Energy Storage (kW/kWh)	196* / 2,121
Energy Resilience on Peak Day (July 2 nd , 2024)	72+ hours at 100% Load
Microgrid Switchgear & Controller	Included

* 530kW Unit derated to meet incentive requirements



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(1) Tesla Megapack 530 kW / 2121 kWh
30'W x 6' D x 9' H

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Preliminary Solar Layout

Economics

Summary

	20 Year Service Agreement Demolition Included
Upfront Cost	\$0
Tax Credits and Incentives	\$0
Operations & Maintenance Cost	\$0
Yr-1 MSA/PPA Cost	(\$266,000)
Yr-1 Utility Savings	\$230,194
Yr-1 REC's	\$3,475
Yr-1 Avoided Genset Cost	\$260,000
Yr-1 Net Savings	\$227,668
Cumulative Net Savings	\$917,705*
Net Present Value	\$381,558
Payback Period (Yrs)	Instant*

*Net Positive Bill Savings projected in Year 7, see ProForma

Assumptions

- 30% Federal Investment Tax Credit.
- The economics include an allowance for microgrid switchgear installation.
- Sonoma Clean Energy Evergreen Rates used
- Solar Billing Program credit applied for exports (\$0.025/kWh)
- PWRPA Renewable Energy Credits included (\$0.005/kWh)
- Escalators used in economics are as follows:
 - Energy Charges: 5 %
 - Demand Charges: 5%
 - Discount Rate: 8%
- Demolition price = \$357,800, includes:
 - Existing Rooftop PV Array
 - Existing Array Cabling & Abandoned Conduits (WBE)
 - Existing Equipment Yard Enclosure
 - Existing PV Equipment within Equipment Yard
 - Existing PV Disconnect within Electrical Room
- Both estimates include the following adders:
 - New generator camlock panel
 - New wall around BESS
 - Meter consolidation
 - 150' underground feeder to BESS

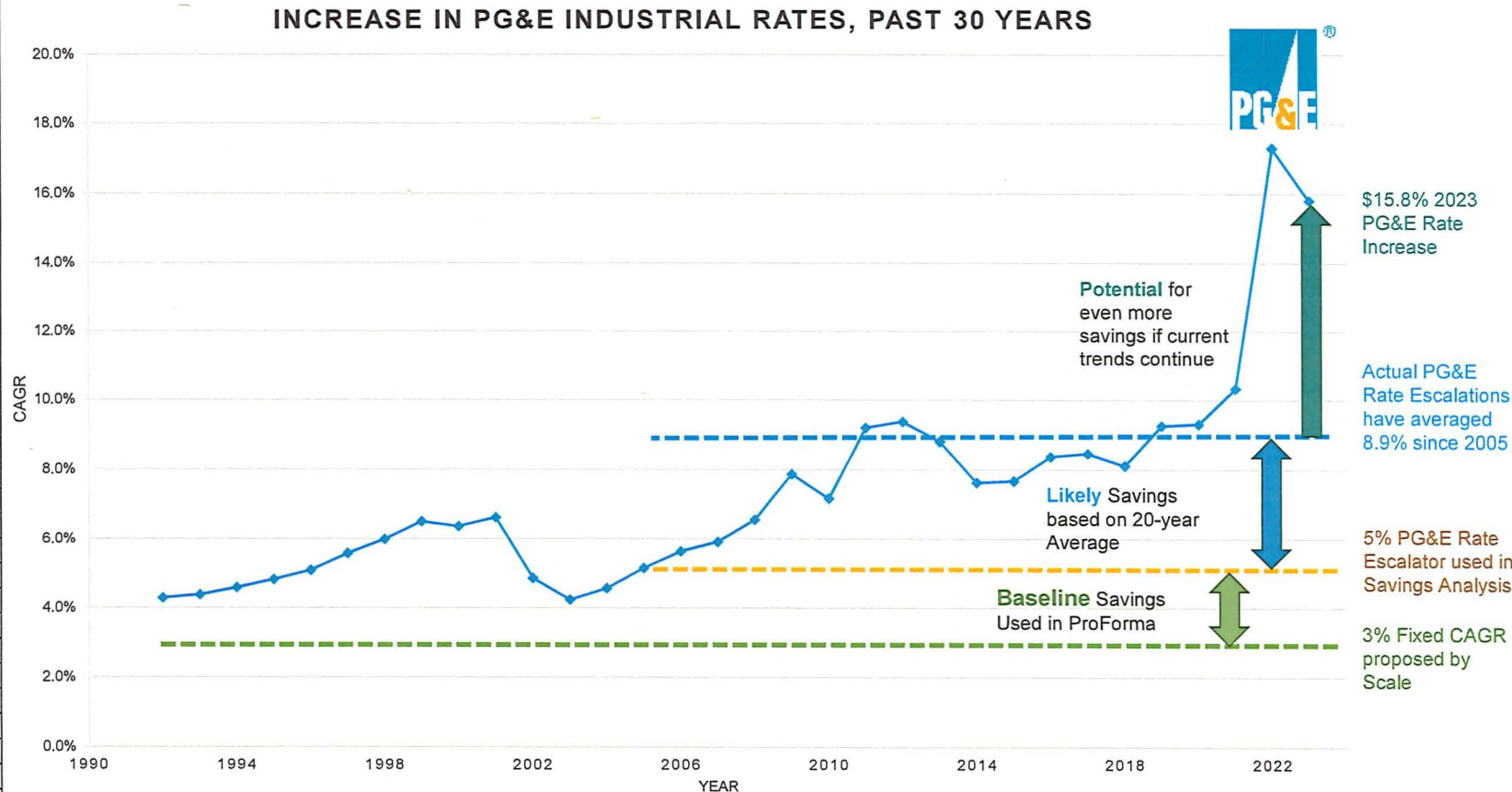
Pro-Forma

20 Year Service Agreement <u>With</u> Demolition							
Year	Cumulative Impact	Annual Impact	Electricity Savings	REC's	MSA Costs	Avoided Capex	Avoided Opex
Totals	\$917,705	\$917,705	\$7,471,020	\$88,757	(\$7,147,520)	\$250,000	\$255,447
0	\$250,000	\$250,000	\$0	\$0	\$0	\$250,000	\$0
1	\$227,668	(\$22,332)	\$230,194	\$3,475	(\$266,000)		\$10,000
2	\$208,816	(\$18,852)	\$241,316	\$3,561	(\$273,980)		\$10,250
3	\$193,747	(\$15,069)	\$252,973	\$3,651	(\$282,199)		\$10,506
4	\$182,782	(\$10,965)	\$265,190	\$3,742	(\$290,665)		\$10,769
5	\$176,262	(\$6,519)	\$277,993	\$3,835	(\$299,385)		\$11,038
6	\$174,551	(\$1,712)	\$291,410	\$3,931	(\$308,367)		\$11,314
7	\$178,030	\$3,479	\$305,471	\$4,029	(\$317,618)		\$11,597
8	\$187,107	\$9,077	\$320,206	\$4,130	(\$327,146)		\$11,887
9	\$202,212	\$15,105	\$335,648	\$4,233	(\$336,961)		\$12,184
10	\$223,801	\$21,589	\$351,831	\$4,339	(\$347,070)		\$12,489
11	\$252,357	\$28,556	\$368,789	\$4,448	(\$357,482)		\$12,801
12	\$288,390	\$36,033	\$386,560	\$4,559	(\$368,206)		\$13,121
13	\$332,441	\$44,051	\$405,182	\$4,673	(\$379,252)		\$13,449
14	\$385,083	\$52,641	\$424,696	\$4,790	(\$390,630)		\$13,785
15	\$446,918	\$61,836	\$445,145	\$4,910	(\$402,349)		\$14,130
16	\$518,588	\$71,670	\$466,574	\$5,032	(\$414,419)		\$14,483
17	\$600,767	\$82,179	\$489,028	\$5,158	(\$426,852)		\$14,845
18	\$694,170	\$93,403	\$512,557	\$5,287	(\$439,657)		\$15,216
19	\$799,550	\$105,380	\$537,212	\$5,419	(\$452,847)		\$15,597
20	\$917,705	\$118,155	\$563,046	\$5,555	(\$466,433)		\$15,987

SCALE MICROGRIDS

PG&E Tariffs Compound Annual Growth Rate (CAGR)

Year	PG&E Rate CAGR
2023	15.8%
2022	17.3%
2021	10.3%
2020	9.3%
2019	9.3%
2018	8.1%
2017	8.5%
2016	8.4%
2015	7.7%
2014	7.6%
2013	8.8%
2012	9.4%
2011	9.2%
2010	7.2%
2009	7.9%
2008	6.6%
2007	5.9%
2006	5.6%
2005	5.2%
2004	4.6%
2003	4.2%
2002	4.9%
2001	6.6%
2000	6.4%
1999	6.5%
1998	6.0%
1997	5.6%
1996	5.1%
1995	4.8%
1994	4.6%
1993	4.4%
1992	4.3%



Source: 2024 Annual Electric Power Industry Report, Form EIA -861

Appendices

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Proposed Racking Design

- 5 Degree Tilt
- Leaf-blower accessible
- Offset from rooftop to allow for drainage
- Space to walk in between rows
- Wind guards may be needed to prevent upward forces from wind, but do not impede drainage

Additional Information

<https://www.panelclaw.com/clawfr/#clawfr5>

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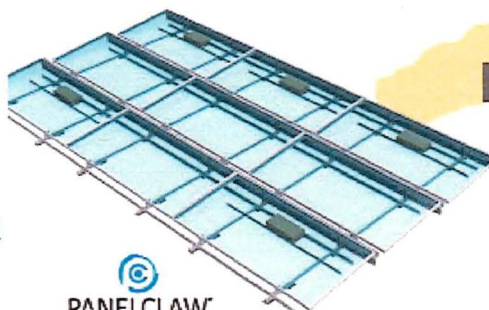
clawFR®
5°



Wind Guard

Flat Roof Racking Specialists

PanelClaw® is the only major racking provider in North America focused exclusively on flat roof racking. Our 11+ years of focus on flat roof result in a competitive advantage for our partners. No one knows more about flat roof racking than PanelClaw; no one delivers a more thoroughly tested and reliable platform; and no one matches our level of service. Our mission is to accelerate the deployment of flat roof PV and the best way to do this is to continue to lower its life-cycle cost while maintaining the highest levels of reliability. The clawFR platform is the result of this experience and commitment to flat roof.



PANELCLAW®

10.4" Row Gap

Engineered for Speed

- Single M6 bolt hardware kit
- No tool module attachment method
- 90 degree single-module tilt-up feature
- Flexible order of operations installation process allows for optimized coordination of building trades on the roof
- Integrated roof protection pads
- 6.9"± access ways between modules
- Only 1 ground lug required per array

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Scale Microgrids Installation at Soboba Casino

12/12/2024



Scale Microgrids Installation at Soboba Casino

12/12/2024

Full Turnkey Microgrid Services Agreement (MSA)

What's Included?



**ENGINEERING
& DESIGN**



**PERMITTING &
INTERCONNECTION**



CONSTRUCTION



FINANCING



**ASSET
MANAGEMENT**



**EQUIPMENT
REPLACEMENT**



**OPERATIONS &
MAINTENANCE**



**PERFORMANCE
OPTIMIZATION**

Project References



Entity: Goleta Water District
 Contact Person: Shannon Eminhizer, Project Lead
 Phone Number: 805-879-4665
 Email Address: seminhizer@goletawater.com
 Project Description: Installation of a 250kW / 1,000 kWh battery powered microgrid at GWD's Water Treatment Plant
 Date of Completion: November 11, 2024



Ribbon Cutting at Goleta Water District WTP



Entity: Gallaudet University
 Contact Person: Dave Good, CEM, LEED-AP BD+C | Director, Energy, Utilities, and Sustainability
 Phone Number: 202-651-5758
 Email Address: david.good@gallaudet.edu
 Project Description: Campus-wide microgrid consisting of 1.7MW of community solar, 1.7MW / 2.6MWh of batteries and 4.5MW of Combined Heat and Power
 Date of Completion: January 1, 2025

Origo



Entity: Origo Investments
 Contact Person: Adam Hayner
 Phone Number: 424-258-4995
 Email Address: adam.hayner@origoinvestments.com
 Project Description: Installation of a fully off-grid microgrid to support their cold storage facility in Madera, CA. Project consists of 2.4 MW of Solar, 2.4 MW/ 4.8 MWh of batteries, and 4.8 MW of Natural Gas generation.
 Date of Completion: June 2023