



# etb consulting

## Introducing ETB Consulting:

*Outsource your Solar + Storage Analysis to our Experts*

PV-only, 540 kW



**SYSTEM DESIGN NOTES**

ETB designed a roof-mounted array to be California compliant and (5) separate carport arrays per Client guidance. The system design layout is preliminary and subject to change for budgetary purposes.

**SOLAR PV SYSTEM SPECS**

Power Rating: 540,000 W-DC  
 PV Generation (yr 1): 881,012 kWh  
 Yield (kWh/kW): 1,632 kWh/kW-DC



Wednesday, September 4, 2024



# WEBINAR SPEAKERS

---



**Yulia Krivchenkova**  
Manager, ETB Consulting & Data  
Energy Toolbase



**Tracy Fosterling**  
Marketing Manager  
Energy Toolbase

# Why Choose ETB Consulting?

- Multiple complex solar and energy storage opportunities
- Exploring projects in a new sector (commercial vs. residential)
- Client wants to consider adding energy storage
- Need assistance with optimal designs and different financing options

**energy toolbase**  
ETB CONSULTING

**2.1.1 ENERGY USAGE PROFILE**

Usage & Cost Summary:

Quantity:	000-010
Rate Schedule:	000-TU (Clean 0)
Annual Usage:	000,400 kWh
Annual Bill (0):	\$101,279
Avg blended cost:	\$1.283 /kWh
Load Factor:	20%

Usage Cost by Month:

Month	Usage (kWh)	Cost (\$)
Jan	30,000	\$38,490
Feb	25,000	\$32,075
Mar	35,000	\$44,655
Apr	40,000	\$51,320
May	45,000	\$57,985
Jun	50,000	\$64,650
Jul	55,000	\$71,315
Aug	50,000	\$64,650
Sep	40,000	\$51,320
Oct	35,000	\$44,655
Nov	25,000	\$32,075
Dec	30,000	\$38,490

**2.1.2 MONTHLY LOAD PROFILE**

The chart below shows the customer load profile for the month of July to illustrate the peak of the load profile over the course of a summer morning.

**2.1.3 UTILITY BILL AFTER**

UTILITY: 000-010  
RATE SCHEDULE: 000-TU (Clean 0)

Category	Item	Rate	Usage	Amount
Pay Fee	per billing period	\$0.00	0	\$0.00
	per billing period	\$0.00	0	\$0.00
Energy Charge	per kWh	\$0.120	400,000	\$48,000.00
	per kWh	\$0.120	400,000	\$48,000.00
Demand Charge	per kW	\$10.00	100	\$1,000.00
	per kW	\$10.00	100	\$1,000.00
Total				\$97,000.00

**2.1.6 PV SYSTEM DESIGN (PRELIMINARY)**

SYSTEM DESIGN NOTES: ETB designed a roof-mounted array to be CalFire compliant and (5) separate carport arrays per Client guidance. Note: PV system design layout is preliminary and meant for budgetary purposes.

SOLAR PV SYSTEM SPECIFICATIONS: Power Rating: 540 kW, PV Generation (yr 1): 80 kWh/kW/yr, Yield (kWh/kW/yr): 80

**energy toolbase**  
ENTERPRISE SERVICES

**PV-only, 540 kW**

Prepared for: **Kalita Distribution**  
Customer name: **Moses Riabo**  
EID: 003-4248  
mriabo@kalitadistribution.com

### 2.1.1 ENERGY USAGE PROFILE

An energy usage profile (EUP) contains a full year of energy consumption (kWh) and demand (kW) data for a specific meter. In Energy Toolbase, all EUPs are made up of 365 days of 15-minute interval data, which enables us to precisely simulate a project's actual use. Your EUP creation method is described below.

**EUP creation notes:** Customer could not get internet data. This EUP was by backfilling against a DOE Office Building load profile.

**USAGE & COST SUMMARY:**  
 Utility: SCE-NEM3  
 Rate Schedule: GS-3-TDU (Option D)  
 Annual Usage: 888,436 kWh  
 Annual Bill (\$): \$350,279  
 Avg blended cost: \$0.393/kWh  
 Load factor: 36%

**USAGE COST BY MONTH:**

**MONTHLY LOAD PROFILE**  
The chart below shows the customer's load profile for the month of July to illustrate that shape of their load pattern over the course of a summer month billing cycle.

### 2.1.6 PV SYSTEM DESIGN (PRELIMINARY)

**SYSTEM DESIGN NOTES**  
ETB designed a load-mounted array to be California compliant and DC separate support arrays per Client guidance.  
Note: PV system design layout is preliminary and subject to budgetary purposes.

**SOLAR PV SYSTEM SPECS**  
Power Rating: 540,000 W DC  
PV Generation/yr: 888,436 kWh  
Yield (kWh/kW): 1,632 kWh/kW/DC

### 2.1.3 UTILITY BILL AFTER

UTILITY: SCE-NEM3  
RATE SCHEDULE: GS-3-TDU (Option E)

The table below shows a breakdown of the bill charges and components of your new utility rate schedule (GS-3-TDU (Option E)) which assumes that your rate switch.

Customer Charges				Energy Charges				Demand Charges			
Charge Type	Rate Type	CRS-5 Option	Rate Type	CRS-5 Option	Charge Type	Rate Type	CRS-5 Option	Charge Type	Rate Type	CRS-5 Option	Rate Type
W	Flat Rate - per billing period	\$54.81	W	MidPeak	Import	\$3.2765	W	Flat Rate	Import	\$1.2	
S	Flat Rate - per billing period	\$54.81	W	OffPeak	Import	\$0.10053	W	MidPeak	Import	\$1.2	
			S	Super Off Peak	Import	\$0.75645	S	OffPeak	Import	\$0.4	
			S	MidPeak	Import	\$0.81105					
			S	OffPeak	Import	\$0.1971					

The table below shows a summary of your remaining usage and utility bill cost, after adding solar and/or storage.

Item	Amount	Energy (kWh)	Max Demand (kW)	Change
10/1/2022 - 9/1/2023 W	-12,234	28,220	276	-196
9/1/2022 - 8/1/2023 W	8,856	19,816	204	142
8/1/2022 - 7/1/2023 W	4,371	10,300	197	121
7/1/2022 - 6/1/2023 W	1,480	3,279	166	117
6/1/2022 - 5/1/2023 W	397	914	166	106
5/1/2022 - 4/1/2023 W	-1,538	36,274	195	-101
4/1/2022 - 3/1/2023 W	3,875	8,871	189	89
3/1/2022 - 2/1/2023 W	3,208	37	119,864	-214
2/1/2022 - 1/1/2023 W	3,875	9,874	197	205
1/1/2022 - 12/1/2022 W	3,989	21,162	197	183
12/1/2022 - 11/1/2022 W	12,162	28,098	197	189
11/1/2022 - 10/1/2022 W	12,347	28,287	197	188
Total	18,228	98,716	200,897	-

**UTILITY BILL (AFTER): \$112,718**

### 2.1.4 UTILITY BILL SAVINGS

Utility Bill Savings (aka "Avoided Costs") is calculated by taking "Utility Bill (Before)", "Utility Bill (After)", "Utility Bill Savings" from solar and/or storage takes into account the applicable local meter Net Energy Metering (NEM) and rate tariff rules, which are summarized below. **NEM3 rate tariff notes:** Assumes NEM3 in CA where exports are valued at ACC (the rate switched customer at that was most optimal).

**SAVINGS BREAKDOWN:**  
 Utility Bill (Before): \$350,279  
 Utility Bill (After): \$112,718  
 Utility Bill Savings: \$237,561  
 Utility Bill Offset (%): 56.7%

**ANNUAL BILL SAVINGS:**

**MONTHLY BILL SAVINGS:**  
The chart below shows a monthly breakdown of "Utility Bill Cost (before)" solar and/or storage, and "Utility Bill Cost (After)" accounting for solar and/or storage.

### 3.1 Cash Purchase

**Assumptions and Key Financial Metrics**

Year	Project Costs	REC Revenue	Net Present Value	Internal Rate of Return	Payback Period	Simple Payback	IRR	NPV	Net Present Value	Simple Payback
1	-	\$1,700	\$1,700	100%	1.0	1.0	10%	\$1,700	1.0	1.0
2	-	\$3,400	\$3,400	100%	2.0	2.0	10%	\$3,400	2.0	2.0
3	-	\$5,100	\$5,100	100%	3.0	3.0	10%	\$5,100	3.0	3.0
4	-	\$6,800	\$6,800	100%	4.0	4.0	10%	\$6,800	4.0	4.0
5	-	\$8,500	\$8,500	100%	5.0	5.0	10%	\$8,500	5.0	5.0
6	-	\$10,200	\$10,200	100%	6.0	6.0	10%	\$10,200	6.0	6.0
7	-	\$11,900	\$11,900	100%	7.0	7.0	10%	\$11,900	7.0	7.0
8	-	\$13,600	\$13,600	100%	8.0	8.0	10%	\$13,600	8.0	8.0
9	-	\$15,300	\$15,300	100%	9.0	9.0	10%	\$15,300	9.0	9.0
10	-	\$17,000	\$17,000	100%	10.0	10.0	10%	\$17,000	10.0	10.0
11	-	\$18,700	\$18,700	100%	11.0	11.0	10%	\$18,700	11.0	11.0
12	-	\$20,400	\$20,400	100%	12.0	12.0	10%	\$20,400	12.0	12.0
13	-	\$22,100	\$22,100	100%	13.0	13.0	10%	\$22,100	13.0	13.0
14	-	\$23,800	\$23,800	100%	14.0	14.0	10%	\$23,800	14.0	14.0
15	-	\$25,500	\$25,500	100%	15.0	15.0	10%	\$25,500	15.0	15.0
16	-	\$27,200	\$27,200	100%	16.0	16.0	10%	\$27,200	16.0	16.0
17	-	\$28,900	\$28,900	100%	17.0	17.0	10%	\$28,900	17.0	17.0
18	-	\$30,600	\$30,600	100%	18.0	18.0	10%	\$30,600	18.0	18.0
19	-	\$32,300	\$32,300	100%	19.0	19.0	10%	\$32,300	19.0	19.0
20	-	\$34,000	\$34,000	100%	20.0	20.0	10%	\$34,000	20.0	20.0
21	-	\$35,700	\$35,700	100%	21.0	21.0	10%	\$35,700	21.0	21.0
22	-	\$37,400	\$37,400	100%	22.0	22.0	10%	\$37,400	22.0	22.0
23	-	\$39,100	\$39,100	100%	23.0	23.0	10%	\$39,100	23.0	23.0
24	-	\$40,800	\$40,800	100%	24.0	24.0	10%	\$40,800	24.0	24.0
25	-	\$42,500	\$42,500	100%	25.0	25.0	10%	\$42,500	25.0	25.0
26	-	\$44,200	\$44,200	100%	26.0	26.0	10%	\$44,200	26.0	26.0
27	-	\$45,900	\$45,900	100%	27.0	27.0	10%	\$45,900	27.0	27.0
28	-	\$47,600	\$47,600	100%	28.0	28.0	10%	\$47,600	28.0	28.0
29	-	\$49,300	\$49,300	100%	29.0	29.0	10%	\$49,300	29.0	29.0
30	-	\$51,000	\$51,000	100%	30.0	30.0	10%	\$51,000	30.0	30.0
TOTAL	\$1,900,000	\$217,234	\$1,682,766	100%	30.0	30.0	10%	\$1,682,766	30.0	30.0

# What Does ETB Consulting Provide?

- Solar and battery system sizing optimization
- Preliminary solar PV design layout
- Revenue and incentive program assessment (REC, demand response, etc.)
- Rate switch and tariff eligibility analysis
- Value of adding energy storage
- Real-time support

# ETB CONSULTING TEAM



**Yulia Krivchenkova**

Manager, ETB Consulting & Data

Yulia leads and oversees our Data and Services team. Within her six-year experience in the industry, she has analyzed thousands of tariffs, net metering policies, market rules, and rate structures. Yulia is responsible for the accuracy of the ETB global rates database and performs final round QA/QC on all ETB Consulting engagements.



**Justin Hammond**

Manager, Enterprise Services

Justin is the Manager of Enterprise Services and technical team lead. NABCEP Certified PV Professional® and holds Bachelor of Science in Civil Engineering from San Diego State University. Justin is a 13-year solar-and-storage industry veteran, responsible for the successful design and development of hundreds of commercial systems.



**Stephen McVicar**

Manager, Business Development

Stephen leads our Business Development and Onboarding teams. He and his teams are responsible for onboarding new ETB Developer customers, training current users, and expanding our presence in the renewable energy market. The combined experience of his teams brings unparalleled value to each engagement.

## Services Team Members – Engagement



**Cheyenne  
Arana**



**Erin  
Hickey**



**Allison  
Diefenbach**



### What's Next?

- **Sign up for the ETB Consulting App!**
- **Schedule a Call**
- **Contact us:**  
[consulting@energytoolbase.com](mailto:consulting@energytoolbase.com)



Q & A