



# Kern Community College District

---

Delano Campus Evaluation

Brian Taylor

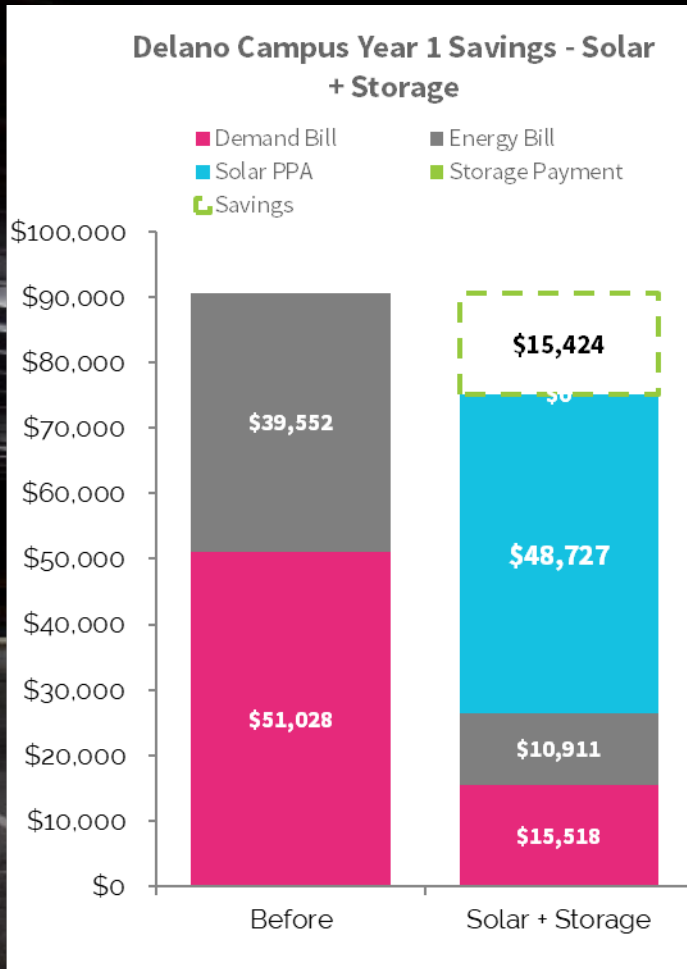
Senior Director – CA Public Sector

January 2020





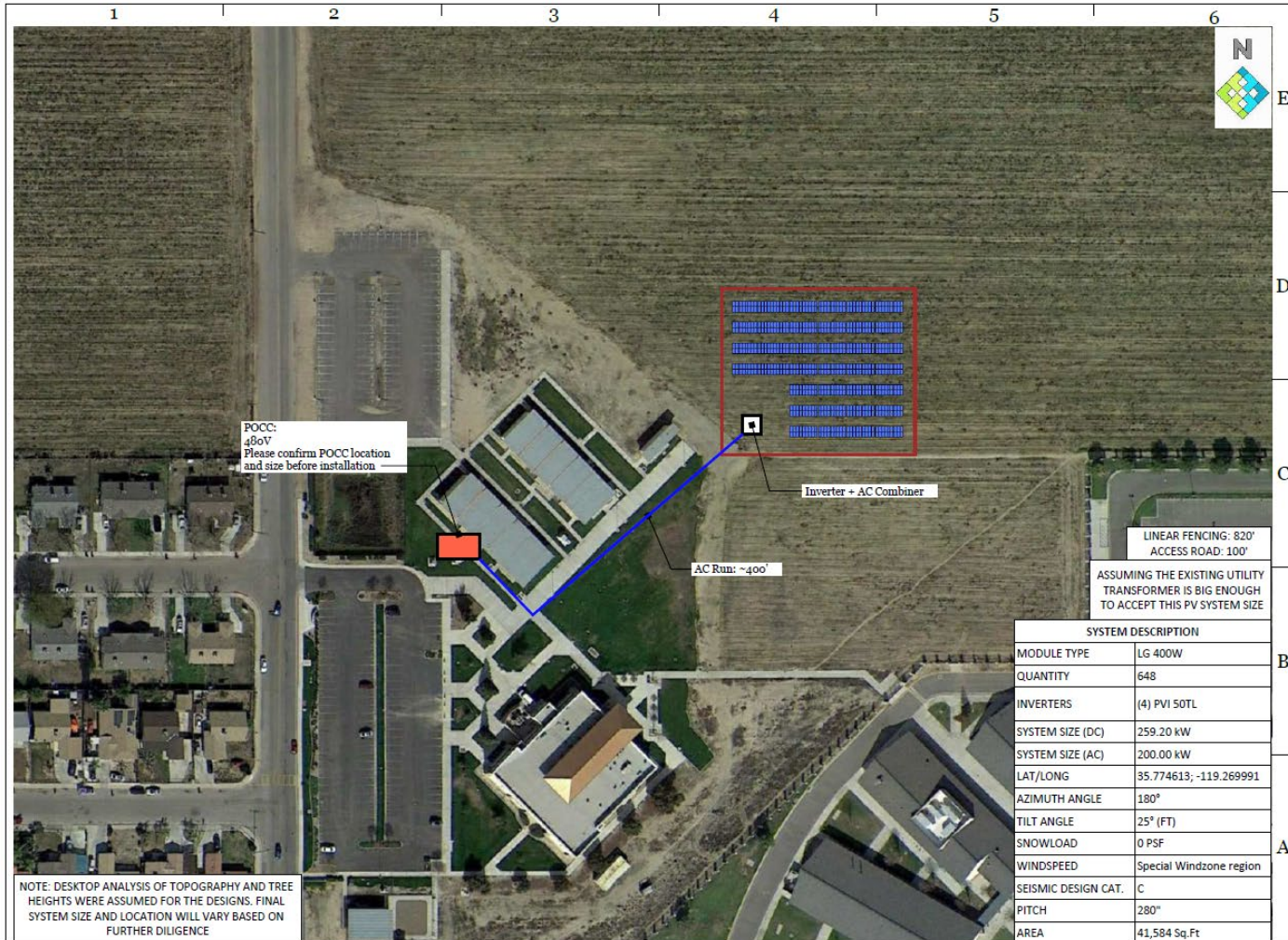
# Kern CCD Renewable Strategy



- **Bakersfield College (Delano Campus)**
  - 259 KW Fixed Tilt Ground mount
  - Optimal 94% Energy Offset
- **Save**
  - +\$15K Year 1 Savings (17%)
  - +\$770K over 20 Years
- **DSA Exempt Ground Mounted Systems**
  - Maximize Production
  - Most Efficient Design
- **Construction: Timed with Bakersfield College / District office**
- **Piggyback RFP with SPURR**



# Delano Campus



POCC:  
480V  
Please confirm POCC location  
and size before installation

AC Run: ~400'

Inverter + AC Combiner

LINEAR FENCING: 820'  
ACCESS ROAD: 100'

ASSUMING THE EXISTING UTILITY  
TRANSFORMER IS BIG ENOUGH  
TO ACCEPT THIS PV SYSTEM SIZE

SYSTEM DESCRIPTION	
MODULE TYPE	LG 400W
QUANTITY	648
INVERTERS	(4) PVI 50TL
SYSTEM SIZE (DC)	259.20 kW
SYSTEM SIZE (AC)	200.00 kW
LAT/LONG	35.774613; -119.269991
AZIMUTH ANGLE	180°
TILT ANGLE	25° (FT)
SNOWLOAD	0 PSF
WINDSPEED	Special Windzone region
SEISMIC DESIGN CAT.	C
PITCH	280°
AREA	41,584 Sq.Ft

NOTE: DESKTOP ANALYSIS OF TOPOGRAPHY AND TREE HEIGHTS WERE ASSUMED FOR THE DESIGNS. FINAL SYSTEM SIZE AND LOCATION WILL VARY BASED ON FURTHER DILIGENCE

**FOREFRONT POWER**  
3017 FOREFRONT POWER, LLC AND ITS AFFILIATES ALL RIGHTS RESERVED  
 100 MONTGOMERY STREET #1400  
 SAN FRANCISCO, CA 94104  
 (855) 204-5083  
 www.forefrontpower.com

STAMP:  
**NOT FOR CONSTRUCTION**

**Kern CCD  
Bakersfield College  
Delano Campus**  
1450 Timmons Ave,  
Delano, CA 93215

PROJECT NUMBER:  
CA-20-0012  
SHEET TITLE:  
CONCEPTUAL LAYOUT  
SHEET SIZE:  
TABLOID 11" X 17"

THIS DRAWING IS THE PROPERTY OF FOREFRONT POWER, LLC. THIS INFORMATION IS CONFIDENTIAL AND IS TO BE USED ONLY IN CONNECTION WITH WORK DESCRIBED BY FOREFRONT POWER, LLC. NO PART IS TO BE DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION FROM FOREFRONT POWER, LLC.

NO.	REVISION	DATE	INIT.

DATE: 16 Jan 2020  
DRAWN BY: RP  
ENGINEER: RP  
APPROVED BY:

PROJECT PHASE:  
PRELIMINARY DESIGN  
SCALE: 1" = 100'  
SHEET NO:  
**CL-1**



# Kern CCD - Pricing & Savings

## Project Cashflows: Kern CCD Phase 2

Rate Scenario	TOU 2.0
Solutions	Solar Only
Project	Delano Campus
Year 1 Savings	\$15,424
Cumulative Savings	\$772,553
Cumulative NPV Savings	\$449,080
Payback Period	Immediate
Solar System Size (KW)	259
Storage System Size (KW)	0

## Financial Assumptions

Parameter	Value
Year 1 PPA Rate (\$/kWh)	\$0.1085
PPA Rate Escalator (%/yr)	0.0%
Utility Energy Escalator (%/yr)	2.7%
Utility Demand Escalator (%/yr)	5.0%
PPA Term (Years)	20
Discount Rate (%)	5.0%
Solar Degradation Rate (%)	0.50%

Year	PPA Rate (\$/KWH)	KWH Generated	Historic Utility Bill (without solar)	PPA Payment	Storage Payment	New Utility Bill (with solar)	Total Electricity Costs (PPA + Utility)	Net Savings	Cumulative Savings
1	0.1085	449,101	90,580	48,727	0	26,429	75,156	15,424	15,424
2	0.1085	446,855	94,200	48,484	0	28,355	76,839	17,361	32,786
3	0.1085	444,621	97,975	48,241	0	30,369	78,611	19,364	52,150
4	0.1085	442,398	101,915	48,000	0	32,477	80,477	21,438	73,588
5	0.1085	440,186	106,025	47,760	0	34,680	82,440	23,585	97,173
6	0.1085	437,985	110,314	47,521	0	36,983	84,504	25,810	122,983
7	0.1085	435,795	114,791	47,284	0	39,390	86,674	28,116	151,099
8	0.1085	433,616	119,463	47,047	0	41,907	88,954	30,509	181,608
9	0.1085	431,448	124,340	46,812	0	44,536	91,348	32,992	214,600
10	0.1085	429,291	129,431	46,578	0	47,283	93,861	35,570	250,169
11	0.1085	427,145	134,746	46,345	0	50,153	96,498	38,248	288,417
12	0.1085	425,009	140,296	46,113	0	53,151	99,264	41,032	329,449
13	0.1085	422,884	146,091	45,883	0	56,282	102,165	43,926	373,375
14	0.1085	420,769	152,144	45,653	0	59,552	105,205	46,938	420,313
15	0.1085	418,665	158,465	45,425	0	62,966	108,392	50,073	470,386
16	0.1085	416,572	165,067	45,198	0	66,532	111,730	53,337	523,723
17	0.1085	414,489	171,963	44,972	0	70,254	115,226	56,738	580,461
18	0.1085	412,417	179,168	44,747	0	74,139	118,886	60,282	640,743
19	0.1085	410,355	186,696	44,523	0	78,195	122,719	63,977	704,720
20	0.1085	408,303	194,561	44,301	0	82,428	126,729	67,832	772,553
<b>Total</b>		<b>8,567,906</b>	<b>\$2,718,231</b>	<b>\$929,618</b>	<b>\$0</b>	<b>\$1,016,060</b>	<b>\$1,945,678</b>	<b>\$772,553</b>	<b>\$772,553</b>

Assumes 2.7% Annual Utility Energy Rate Increase, 5.0% Utility Demand Rate Increase