Solar Options for GCCCD

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Overview

Solar PV power is less expensive than electricity from the local utility, is 100% renewable and creates zero emissions. GCCCD has received a variety of solar and battery storage proposals, each of which are fiscally and environmentally preferable to purchasing energy from SDG&E. Through completing a solar project GCCCD will benefit from improved pricing on electricity, shade for parked cars, and significantly reduced pollution emissions. It should also be noted that Grossmont College and Cuyamaca College are among the only few colleges in San Diego without a solar array. It is in GCCCD's best interest, and the interest of the community, that GCCCD adopt solar as an electricity source.

In addition to costs saved through PV, battery storage enables users to shave the "peak load" or demand charges from electricity costs. This is significant as demand costs are often more than two thirds of total electricity expenditures. As an example, - in May 2018 Grossmont College paid $64,609.63 in demand charges for the main electric meter whereas the total electric cost was $103,049.44. Including demand charges, the average cost per kilowatt hour is $0.17. Every solar company which has submitted a proposal to GCCCD offers electricity for $0.11 per kilowatt hour or less, - a tremendous savings.

Finally, the world's energy crisis is no secret, nor is it controversial. Fossil fuels, which are burned at coal and natural gas power plants to create electricity, have devastating consequences on the natural environment. From extraction by drilling or mining, to transport, to the burning of fuels at power plants, these materials emit environmentally devastatingly gases; the worst of which are methane, carbon dioxide, and nitrous oxide which pollute the air, soil, and water. In a report released by the International Panel of Climate Change on October 8, 2018, severe language was used to delineate the drastic changes necessary to curb emissions in the next ten years in order to keep the planet from increasing 1.5 degrees Centigrade. GCCCD has the opportunity to support the global community in fighting global warming through changing electricity sources.

Please consider the following proposals as a globally conscious, and fiscally responsible change that GCCCD can make in providing electricity to the colleges and District.

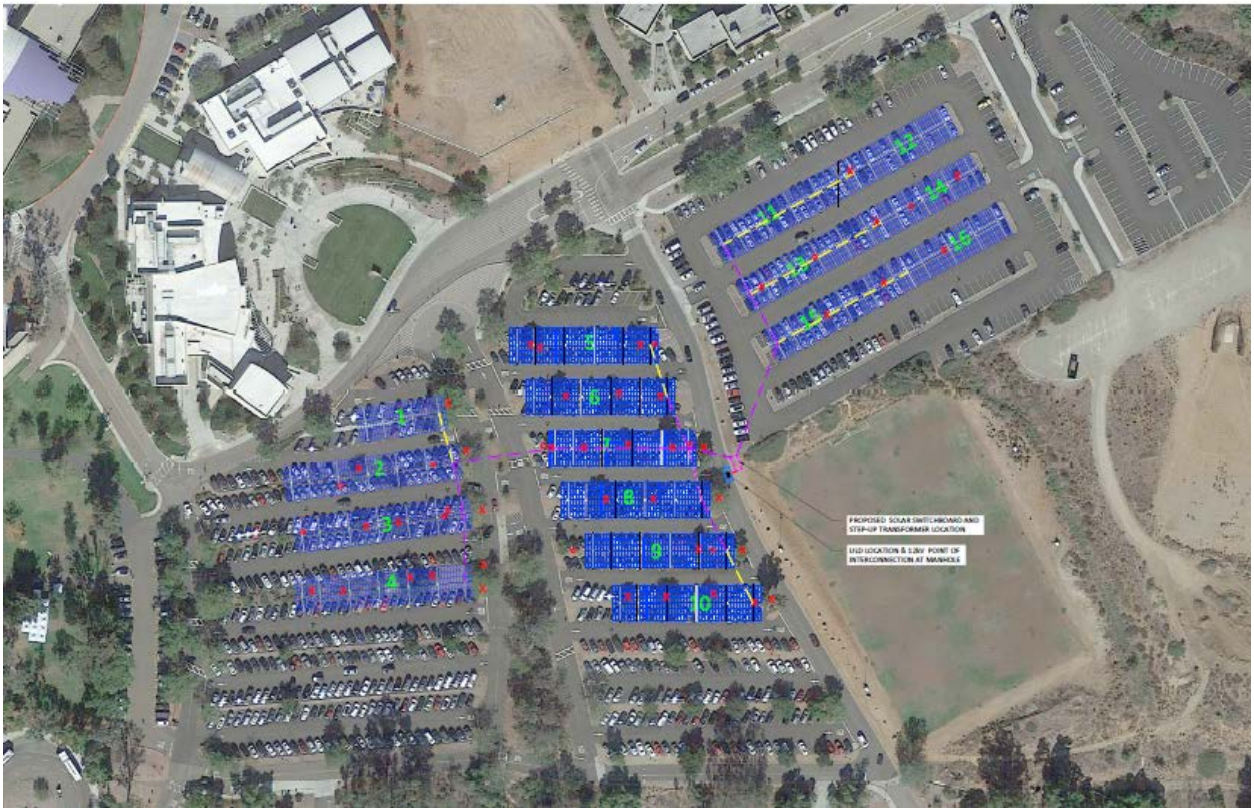
Power Purchase Agreement (PPA) Options

Solar Company	Sunpower	ForeFront	Borrego
PV System Size	6,401.4 kW DC	5,690 kW DC	4,860 kW DC
Grossmont	4,201.8 kW DC	3,765 kW DC	3,838 kW DC
Cuyamaca	2,199.6 kW DC	1,925 kW DC	1,022 kW DC
Grossmont Offset	94.30%	85%	86%
Cuyamaca Offset	96.90%	81%	45%
Combined Offset	95.20%	84%	65.50%
Storage System Size	**2,500 kW**	840 kW	1,000 kW
Grossmont	1,500 kW	600 kW	1,000 kW
Cuyamaca	1,000 kW	240 kW	0
PV PPA Rate			
Grossmont	$0.1075/kWh	$0.1150/kWh	$0.100/kWh
Cuyamaca	$0.1075/kWh	$0.1150/kWh	$0.1090/kWh
Escalator	no	no	1%
purchase price	n/a	n/a	n/a
Storage Rate	$0.0199/kWh, $221,675 in year 1	$82,105	$84,738/year
PV Savings Projection			
10 years	$2,219,482	$1,304,827	n/a
20 years	$9,100,228	$4,726,056	$2,551,418
25 years	$14,695,347	n/a	$7,125,615
30 years	$57,282,376	n/a	n/a
PV + Storage Saving Projection – 20 years	$16,288,748	$14,972,578	$2,551,418
Production Guarantee	yes, 100%	95% performance	no
Panel Degradation Rate	0.25%/year	0.50%/year	0.50%/year
Length of Contract	25 years	20 years	25 years
O&M Cost	included	included	included
O&M Contract length	25 years	20 years	25 years
RFP Required	yes	no	yes

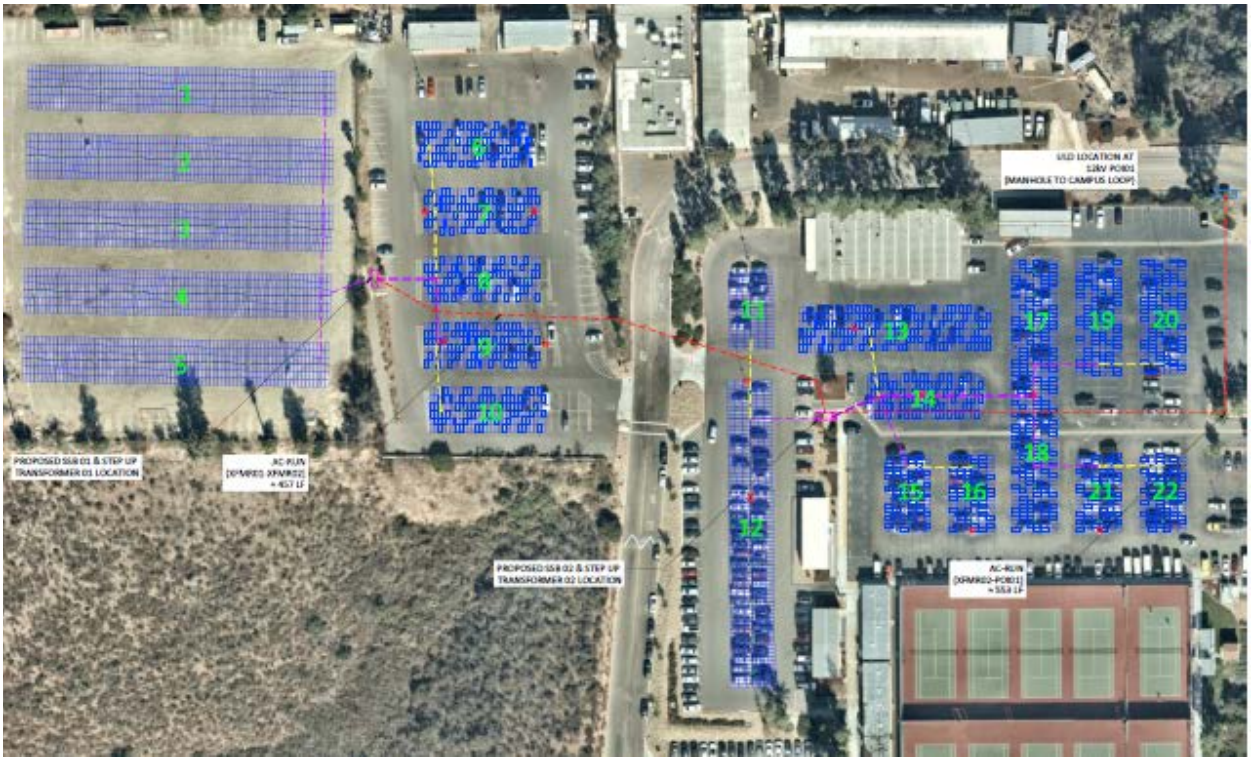
Cash Purchase Options

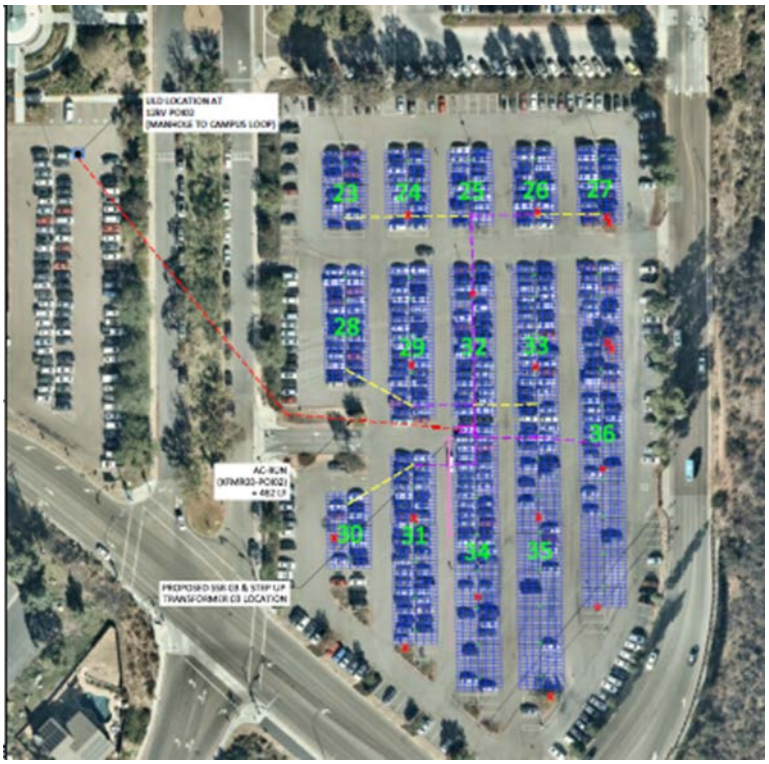
Solar Company	Sunpower	Forefront	Borrego
PV System Size	6,401.4 kW DC	5,690 kW DC	4,410 kW DC
Grossmont	4,201.8 kW DC	3,765 kW	3,387.6 kW
Cuyamaca	2,199.6 kW DC	1,925 kW	1,022.4 kW
Grossmont Offset	94.30%	85%	75%
Cuyamaca Offset	96.90%	81%	45%
Combined Offset	95.20%	84%	60%
purchase price total	$24,000,000	$17,000,000	$13,558,443
Grossmont Purchase	n/a	n/a	$10,793,849
Cuyamaca Purchase	n/a	n/a	$2,764,594
Payback Period	21 years	16 years	n/a
Grossmont	n/a	n/a	20 years, 2 months
Cuyamaca	n/a	n/a	9 years
PV Savings Projection			
10 years	n/a	n/a	n/a
20 years	n/a	$12,910,845	n/a
25 years	$19,294,876	n/a	n/a
30 years	$41,374,351	n/a	$17,089,611
Production Guarantee	100%	90%	no
PV Panel Degradation Rate	0.25%/year	0.50%/year	.50%/year
O&M Cost	$75,000/year + 3% escalator	Included	$61,589 + 2% annual escalator
O&M Contract length	30 years	10 years	20 years average
RFP Required	yes	No	yes

Rendering: Cuyamaca Campus



Rendering: Grossmont Campus





Talking Points

Costs:

- Solar PPA or Purchase converts GCCCD's electrical utility cost to PPA cost or loan payment
- GCCCD continues to pay SDG&E and Constellation for the remaining electricity consumption
- On-site Battery Storage provides an additional savings by shaving peak demand costs
- PPA provides a guaranteed fixed electric rate for the next 20-25 years

PPA Includes:

- No upfront cost
- EV Stations at both Campuses (no trenching necessary, additional cost savings, appeals to staff)
- Solar companies plan & manage construction
- On-going maintenance at zero cost
- Options at end of 20 or 25 year agreement
- Panel performance guarantee
- Provides shade & increased security lighting to parking lots
- Utilizes local East County companies for construction and maintenance
- Approved RFP Process with Sunpower – JPA ensures a fast tracked experience

Potential Challenges:

- Disruptions to parking
- Concern over impacts and annoyances
- If GCCCD does not want to go with the JPA/Forefront proposal, must complete an RFP

Planning and References:

- Supports Districtwide Sustainability goals
- Consistent with FMP priorities
- PPA Provider is endorsed by the Community College League of California