Fairway Villas

Solar System Feasibility Study

Compiled Document for Community Survey

April 19, 2022

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Fairway Villas Solar Feasibility Study Comparative Analysis

April 2022

Rev. April 19, 2022

		Project Options					
Q	**Description**	**Active Solar Purchase (A)**	**Active Solar PPA (B)**	**Active Solar 20 year Annuitization C-PACE (C)**	**Community Solar Only (D)**	**Hybrid Community Solar + Active Solar (E)**	**No Solar (F)**
1	Project Option Cost (Final Installed and Operational)	$211,500	$167,500	$280,358	0	See Note 1	0
2	Total # of community households	370	370	370	370	370	370
3	Average Cost per household - number arrived at by averaging cost divided by 370 residences. Based upon valuations, some households will pay more, some less asuming a property tax collecton basis.	$571.62	$452.70	$757.72	0	See Note 1	0
4	Annually, this project option will provide what **%** of the total facility's (Clubhouse + Lodge) energy needs from solar power (at current electrical usage).	47.29%	47.29%	47.29%	100	100	0
5	Annual Cost to Operate	$0.00	$0.00	$0.00			0
6	Annual Cost to Maintain	$0.00	$0.00	$0.00			0
7	Annual Cost to Insure - See Note 2	$0.00	$0.00	$0.00			0
8	Total Recurring Annual Cost	$0.00	$0.00	$0.00			0
9	Average Total Cost per household	$571.62	$452.70	$757.72			0
	Average Annual Cost per Houshold						
10	Projected Total savings over 20 years	$181,994	$225,994	$113,135	$45,874	$24,180 plus Solar option savings over 20 years	N/A
11	Projected Total savings over 25 years	$322,139	$366,139	$253,280	$67,603	$35,633 plus Solar option savings over 25 years	N/A
11a	Average Annual Household savings over 25 years	$34.83	$39.58	$27.38	$7.31		
12	Time (yrs) it will take for this project option to pay for itself (i.e. break even)	12.2 years	9.11 yrs	0 yrs - See Note 3			N/A
13	Time (yrs) it will take for this project option to pay for itself (i.e. break even) with Option E	11.8 years	9.7 years	0 yrs - See Note 3			N/A
14	Will this project option require solar panels to be installed in on the roof tops of the Club and the Lodge?	Yes	Yes	Yes	No	Yes	N/A
15	If yes, will the solar panels change the appearance of the Club and the Lodge?	Yes	Yes	Yes	No	Yes	N/A
16	Will all of the related hardware be owned by the Club and the Lodge?	Yes	Yes	Yes	No	Yes	N/A
17	Will maintaining and replacing malfunctioning, damaged, broken equipment be the responsibility of the Club and the Lodge? A hedge against unanticipated expenses could be to reserve a portion of the expected energy savings in a set-aside liine item in the operating budget.	Yes, if anything were to occur outside of warranty coverage	Yes, if anything were to occur outside of warranty coverage	Yes, if anything were to occur outside of warranty coverage	No	Yes, for the Solar Panel option component if anything were to occur outside of warranty coverage	N/A

Q	Description	Active Solar Purchase (A)	Active Solar PPA (B)	Active Solar 20 year Annuitization C-PACE (C)	Community Solar Only (D)	Hybrid Community Solar + Active Solar (E)	No Solar (F)
18	Will all service support and on-site service calls for system problems, be free of charge?	Yes - under warranty for 25 years	Yes - under warranty for 25 years	Yes - under warranty for 25 years	N/A	Yes	N/A
19	Current 'delivered cost' per KWH (Xcel)	$0.125	$0.125	$0.125	$0.0661		N/A
20	Final 'delivered cost' per KWH (system)	$0.0765	$0.06060	$0.1014	$0.0624		N/A
21	Savings per kWh	$0.0485	$0.0644	$0.0236	$0.0037		N/A
22	If solar panels are installed, what is the mfg's stated annual efficiency loss? (% loss /yr)	0.50%	0.50%	0.50%	0.50%	0.50%	N/A
23	Assuming our current usage rates stay constant, based on the annual efficiency loss, what % of total power will the system provide after:						N/A
23a	5 yrs	46.35%	46.35%	46.35%	0.975%		N/A
23b	10 yrs	45.20%	45.20%	45.20%	0.950%		N/A
23c	15 yrs	44.08%	44.08%	44.08%	0.925%		N/A
23d	20 yrs	42.99%	42.99%	42.99%	0.900%		N/A
23e	25 yrs	41.93%	41.93%	41.93%	0.875%		N/A
24	**Obsolescense Risk** Could the discovery of a future lower cost, higher efficiency, cleaner energy source make this project option obsolete?	Maybe	Maybe	Maybe	Maybe	Maybe	N/A
25	**Performance Risk Assessment** Solar energy generation is 100% dependent on variables not within our control, such as weather, or system downtime due to a maintenance issue. What are the breakeven points (years) if lifetime system performance is only:						
25a	95%	12.81	9.5655	0	N/A		N/A
25b	90%	13.42	10.021	0	N/A		N/A
25c	85%	14.03	10.4765	0	N/A		N/A

Note 1) The answer to this question will vary depending upon the Active Solar Option considered. The real intent of this option is to provide a mechanism for mitigating the cost of electricity that an active solar system can't provide. The entry cost to participate in the program is zero.

Note 2) All property insurance premiums are currently covered under a master policy obtained by TCMD. The SD 1 & 4 Budgets do not have monies allocated to pay any part of the annual premiums for SD1 & 4 coverage

Note 3) Option C is based on a 20 year ammortization payment structure. At no time during the amortization period do the average annual property tax costs exceed the projected annual savings, so there is never a negative cash flow. Assuming the operating budget for utilty expense is reduced by the solar saving, the operating budget mill levy could be reduced to cover the tax increase for the C-PACE obligation. Projections indicate this would net the average household a minimal positive cash flow in the first year, and increase slightly over time. See the projected calculations.

Fairway Villas Solar System Feasibility Study - February 2022

Revised April 2022
Text added or modified from the February document is shown in green
Additonal revision April 19, 2022, revised text is shown in Red

Background:

The 2021 Capital Projects Survey ranked a feasibility study as the 3rd highest priority. In order to save the expenditure of money to have the District Manager look into this subject, the CAC decided it was within its capabilities to independently pursue it. Below are the results we have obtained to date. After almost a year of research, we are at a point in time where we can present some meaningful alternatives for the community to consider. Shortly, we will be putting together a survey so that the community can weigh in on a specific direction that it would like to pursue, or leave the question entirely and not pursue the idea any further at this time.

The Original Question: Undertake a Cost / Benefit study to Install Solar Panels on the Clubhouse and Lodge Buildings to offset the large monthly electricity bills.

The Challenge: In addition to establishing the potential size, cost, and potential savings for an active solar system, determine if there is a way for the Subdistrict, which is tax-exempt, to capture the currently offered tax credit available for a system installation, in such a way as to reduce the overall system costs.

The High-level summary of the presented options A through F:

1) Install an Active Solar system on the roofs of the Clubhouse and Lodge. Payment options examined are
    A. Option A - Simple Purchase – ownership of system after installation
    B. Option B - PPA Agreement (Prepaid lease structure) – 8 year timeframe for payment, ownership of system after total repayment.
    C. Option C - Long Term financing using the Colorado C-PACE program as an alternative payment program to structure repayment of the PPA agreement – min. of 10 yr up to 25 year amortization period. Ownership of system transferred from PPA provider in year 8.
2) Community Solar – Subscription to a commercially installed “solar farm” that allows us to purchase power at a slightly reduced rate compared to Xcel Energy’s rates.
    D. Option D - Do not install an active solar system, and subscribe for 100% of power needs.
    E. Option E - A Hybrid installation. Use the Community Solar approach as a supplement to an active solar system to make up the difference in consumption vs on-site generating capacity.
3) Do Nothing
    F. Option F - Do not install any solar, or participate in a Community Solar program.

Background:

Energy consumption to heat and cool our two buildings consumes approximately 4.5% of the budget, the vast majority of those dollars going for electricity. The issue of considering a way to save on energy costs is worth tackling. How to go about that task has two components: 1) what changes can be made to the existing infrastructure to reduce consumption, to capture the potential “low hanging fruit”, and 2) would the addition of active solar system infrastructure be worth the investment?

Regarding existing infrastructure changes, the CAC believes several initiatives should be explored regardless of any additional infrastructure consideration:

a) Consider light switching devices to go from the completely “passive” existing switches to switches that incorporate occupancy and room illumination levels to automatically turn lights on or off as actual usage dictates.
b) Review of the building envelope to determine if excessive infiltration is occurring around door openings, and upgrade weatherstripping as needed.
c) Look at heavy usage electrical motors, specifically the pool water pumps, that are single-stage single-speed operation, to be replaced with variable speed pumps and controllable for cycle-timed operation.
d) Building thermostat control.
e) Verification that mechanical equipment is operating to manufacturers' specifications.
f) Review necessity to operate exhaust fans 24 hours per day.
g) Implementation of load demand devices to limit peak kW demand. This would enable a revision in the meter rate structure for the Clubhouse building. This suggestion was made by the vendor proposing the active solar system. More specific information on the subject is below.

Active Solar System

After the February presentation, we received some comments about not mentioning the climate change issues facing us today. We need to acknowledge that some believe, in a purely idealistic way, there is sufficient motivation for adding an active solar generating system to our buildings. To do so would contribute to the effort to move away from a carbon-based method of generating electricity that Xcel is currently using for a sizeable portion of their portfolio. Xcel states that its objective is to be 80% carbon-free by 2030, and 100% carbon-free by 2050. As of 2020, their stated “Certified Renewable Percentage” is 31.9%. There is a school of thought that the cost for Xcel to implement more renewable energy sources into their portfolio will cost money. The cost for that transition will be borne by the consumers in one way or another, and there will be little if any reductions in the cost of power as a result. The change will be in methods of power generation, and not necessarily in reductions in the cost of the energy produced.

There is a cost involved in constructing a power generation system, regardless of who does the construction. There is an available opportunity to be able to predict the cost of power by taking control of the system used to generate that power. The installation of a solar system is one of those methods that will lock in the costs of power production in a controllable way.

The other widely accepted method of electrical generation is wind power. The vast majority of wind power installations are utility-scale, and utility-owned or subscribed projects. Individual or small commercial-scale wind generation is not prevalent now. Some exciting research and development is going on in that space that might make locally generated wind energy economically feasible in the next decade or so.

The proposal currently being used to model the cost and savings potential is now the third revised proposal from a company named “Solar for Planet A”. Andrew Ehrnstein is one of the owners of the company, and the individual who has been working with us as we explore the options. The latest proposal incorporates a newly allowed practice of aggregate metering, which

changes how the roof areas at the Clubhouse and Lodge can be utilized to the greatest advantage.

The initial proposal was based on the roof area for each building, and sizing the system to meet the energy needs of the building to the maximum extent possible. The Lodge had more than enough roof area to install a system to meet 100% of its energy needs, however, the Clubhouse roof area was a long way away from supporting 100% of the Clubhouse energy requirements. Combined, the two systems would provide a little more than 34% solar offset, and had a total generating capacity of 55kW.

The current proposal is to place a 46.6 kW system on the Clubhouse roof, and the Lodge roof system is sized at 28.2 kW, for a total system size of 74.8 kW. There are a total of 170 - 440 watt panels. Solar offset combined for both buildings is projected to be 47.5% of current utility billing expense.

The Proposal incorporates adding a demand load limiting device on the clubhouse equipment. This is an interesting part of the proposal. At the time the Clubhouse was occupied, Xcel's commercial rate structures were determined by the amount of energy actually consumed, plus a demand factor for "instantaneous 15-minute usage". All commercial properties start off using the "C-Commercial" rate but get transitioned to a "Secondary General" rate once demand goes above 25 kW for the 15-minute instantaneous usage. Under new recently enacted rules, the 25 kW breakpoint is increased to 50 kW. The attempt with the new proposal is to use newly installed load limiting controllers to keep the Clubhouse demand below the 50 kW threshold, thus ensuring we stay on the C-Commercial rate. It is to our economic benefit to do so, as the rates for solar production get counted at a higher kWh rate. The limiter would keep high usage equipment loads from being all on at the same time, staggering when they come online to keep the overall demand level down. The solar system, when generating, will help to accomplish the load limitation, but the winter months are when kWh consumption is highest, demand is the highest, and solar production is the smallest. In another irony, the analysis Andrew did shows that June had the least kWh utility consumption, but demand was still 52 KW.

For the Clubhouse the prior year's billings show the average monthly demand being barely over 50kW. The high month demand was 61kW, and the low month demand was 40. There were 7 months of the year that demand exceeded 50 kW. Under the 25 kW rule, we were always locked into the SG rate. The C rate schedule also has a lower cost per month for the service and facility fees plus meter charges - $15.60/mo vs. $54.77/mo. That will occur regardless of whether we have a solar system or not. Update on electrical usage: For 2021, the average monthly demand was 53.83 kW, month high demand was 70, month low demand was 43, and 9 months of the year demand exceeded 50 kW.

We have defined for analysis purposes, three costing options for an Active Solar System. Option A is a cash purchase, with no ability to capture any solar tax credits. Option B utilizes a PPA agreement, which is a lease agreement that would transfer ownership of the system once the final payment has been made. Option C uses the PPA agreement to determine pricing, and instead of making lease payments directly to the leaseholder, the payments would be amortized through a C-PACE loan program and paid to a third-party lender.

A. Option A – Cash Purchase. The total payment for the system is $211,500, with a projected payback of 12 yrs and 2 months. This option is the highest system cost, one that would be termed a full initial expense, without the benefits of obtaining a solar energy tax credit. Payback is defined to mean when the accumulated cost to

purchase and the accumulated savings are equal. The payback period for this option is the longest because the system costs are higher.

B. Option B – Utilizing a PPA Lease Agreement. This option would enable the leaseholder to obtain the benefit of the tax credits, and in turn, they would use the net cost of the system to determine the PPA agreement amount. Thus, Fairway Villas would be able to capture the benefit of a decreased system cost factoring in the tax credits available. The total payment for the system over the term of the lease is $165,000, with projected payback at 9 yrs and 11 months. Payback is defined to mean when the accumulated cost to purchase and the accumulated savings are equal.

C. Option C – Utilizing a C-PACE lending program to finance the PPA purchase.
    i. There are several amortization period options with the C-PACE program, from a minimum time period of 10 years, and in 5-year increments, up to 25 years. We have done projections for each of the 5-year incremental periods and selected a 20 year amortization period for this option. At 20 years, the calculation shows that there is never a negative cash flow. This means that the annual financing costs in any year are always less than the projected savings the system will produce.
    ii. The principal amount that would be financed is $174,694, which is the sum of the PPA agreement amount of $167,500 plus estimated loan costs of $7,194. The total system cost, including interest charges over the amortization period of 20 years is projected to be $280,358. Based upon the definition of payback period, we are saying the payback period is 0 (zero) years.

A) What is the cost of production for the solar system?. Essentially when you purchase solar, you are buying a power production system. If you amortize the cost of the system over its 25 year warranty period, the production cost based upon the proposal we have received for each option defined above is:
    a. Option A is $0.0765 / kWh. The savings per kWh for on-site solar generation = $0.0458 / kWh, or 41.12% of the Xcel rate in current cost.
    b. Option B is $0.0606 / kWh. The savings per kWh for on-site solar generation = $0.0644 / kWh, or 51.52% of the Xcel rate in current cost.
    c. Option C is $0.1014 / kWh. The savings per kWh for on-site solar generation = $0.0236 / kWh, or 18.88% of the Xcel rate in current cost.

B) Lifetime expectation: The proposal indicated a 25+ year warranty on the panels and a 12-year warranty on the inverters. The system lifetime should exceed 40 years, at which time the panel production will be about 80% of the originally installed production capacity, but still high enough to continue to generate significant monthly savings on the utility bills. (The calculations factor in a 0.50% degradation in power production on an annual basis) There will be 5 inverters with this system design, 3 at the Clubhouse, and 2 at the Lodge. We asked about the cost to replace the inverters. The proposer said that with the proposal structured the way it is, he can add to the capital cost an insurance policy for the inverters to extend their lifetime warranty to 25 years, same as the panels, for a cost of about $500 per inverter, or a total add of about $2,500. That way if an inverter ever goes south, it would be replaced at no cost for the equipment, but we'd probably have to supply the labor to replace it. That part of the replacement wouldn't be terribly expensive. There would also be a loss of production by the panel array that is connected to the inverter during the time that any repairs would be needed.

C) Economic modeling assumptions: Andrew used a yearly escalation factor of 3.5% in Xcel utility costs. He provided us with a study that indicated from the time period of 2001 to 2014 the average annual increase in commercial rates was 5.5%. He feels that using the 3.5% number is being conservative, in that it generates less in the way of calculated savings, and serves to extend the payback period. Should the yearly escalation factor increase, the accumulated savings will be more over time. If the escalation rate is less than projected, the accumulated savings will be less.

Issues – Active Solar System:

1) Cost - is it a fair cost? The PPA proposal cost is $2.21 / watt. (Al Morie for comparison: My system cost about $2.23 / watt when installed 3 1/2 years ago. My system was installed on a shingle roof, as would be the case with the Lodge roof. However, the tile roof on the clubhouse is a more complicated and costly installation. Plus, the collection areas are not contiguous, which increases installation costs. My panel installation was contiguous.)
2) The PPA Lease: the proposer has identified a consortium that would enter into a lease-purchase arrangement, which gives us the advantage of purchasing at the net system cost after available tax credits, which we otherwise would not be able to take advantage of. The tax credit for 2022 is 26%, which is the number used in the proposal. If there is a time delay beyond 2022 for the installation, the available tax credit for 2023 is 22%, which would mean that acquisition costs will increase. The other proposal we received didn't offer that as an option, so the system acquisition costs were higher, and we subsequently discounted that proposal from consideration.
3) Cost - Is it important for a neighborhood of "short-termers" to consider when the real payback under the Option A – Cash Purchase, Option B - PPA proposal, or the 10 and 15-year C-Pace amortization payback methods (which have not been presented) put the burden of paying for the system at the front end (current residents)? The real economic benefit to be received from the investment would be realized by the residents living in FV beginning after about 10 years have gone by.
4) The Option C – 20-year C-Pace analysis, with some assumptions being made regarding loan costs, indicates that for a 20 year amortization period for repayment of the system costs, the current residents and future residents will reap the benefits during the period of time they are living in FV. The 20-year amortization schedule shows that in the initial year of production, the average annual residence cost to fund the purchase is slightly less than the average annual household savings, by $2/year. That difference would grow larger every year, up to about $31 / household in the final year of amortization payment, and for the following years, the average annual household savings would jump up to $71 / year, and increase every year thereafter. Thus, as time goes on, the annual economic benefit of having the system will increase.
5) What if a roof needs to be replaced? There would be a non-reimbursed expense for system removal and re-installation if a roof needs to be replaced outside of some insurance-covered event - such as a hailstorm. Thus, if, the roof has reached its lifetime of service without a hailstorm replacement assistance.
6) Hail Damage: We live in a high hail damage-prone area. So, panel damage is a concern. However, upon inquiry, Andrew stated that “I have never had hail of 3.25” or smaller damage any of my systems. The two storms that had 4.5” hail did damage panels”. Al Morie had a solar system on the roof of his house before the move to Fairway Villas, that suffered through a vicious hailstorm several years ago in northwest Denver. The roof was totaled, but the solar system was undamaged. Property insurance paid not only for

the roof replacement, but the cost involved in the removal and reinstallation of the panel system to accommodate the roof replacement.

7) Golf Balls: This is a more serious concern. If you walk around Fairway Villas and observe the solar installations on the houses abutting the golf course, several of them have damage that appears to have been caused by golf balls. We believe the Lodge is well away from any potential for golf ball damage to occur, but the Clubhouse is certainly at risk. Damage to the Clubhouse exterior building walls, some broken glass, and damage to exterior light fixtures have occurred over the 8-year life of the building. The issue has been raised with Andrew; he is looking into insurance for replacement, and if there are panels that have top surfacing other than tempered glass. This is a huge cautionary risk to take into account in any final decision-making. Andrew has since indicated he hasn't found a solar panel manufacturer using any surfacing other than tempered glass.
8) Cost of increased building insurance: We will be asking the Metro District about policy coverages and what increases in premium costs there might be to cover this risk. The answer is not known at this moment, and any increase in costs that might occur hasn't been modeled into the cost analysis.
9) Aesthetics. How will the community feel about their signature buildings' appearance changing with the addition of solar panels? The Solar 4 Planet A proposal has images of the two buildings with depictions of the roof areas the panels would be installed upon, and the sizing of the panel arrays.
10) No equity appreciation. If a private individual or business considers solar, the arguments for a system usually are the same - lock in your power production costs at today's costs, and reap the benefits of incremental savings over time as utility rates rise. At the same time, if paid for outright or financed, or even under a lease with purchase option, some equity will accrue to the property with the system. In our case, equity accrual isn't a factor as we are tax-exempt, there are no books to balance, and no way to value an "equity increase".
11) Repairs outside of the warranted system components will need to be in a maintenance line item in the annual budgets. Usually, there should be minimal expenses here. However, setting aside some of the projected annual savings in a separate budgeted line item would be a way to hedge against unforeseen expenses. Doing so would create a reduced net projected savings. Examples of not-planned expenses might be the need to replace a circuit breaker, or the online production and consumption monitor. Also, there will be a need to provide an internet connection, to allow for system data transmission "to the cloud" which at this time isn't an additional cost burden, and isn't projected to be a burden in the future.

Issue: Is there an alternative to an active solar system because of its cost?

We have defined two potential options. Option D would be a 100% Community Solar program, and Option E would be a hybrid combination of an active solar system combined with a Community Solar program to make up the difference in generation shortfall with the active solar system.

Option D – 100 % Community Solar:

As an alternative to consider, participation in a Community Solar project (not FV community, but a large-scale solar farm type installation) might make more monetary sense. In this scenario, you typically are paying the large-scale Community Solar project owner for the electricity you are allotted, and you receive a corresponding kWh credit from Xcel against

your utility billing. In essence, You are replacing Xcel with another power provider, at a reduced kWh base rate compared to Xcel. The alternate provider would be supplying energy using 100% renewable resources. The decision would eliminate the mixture of carbon-based and renewable supply sources contained in the Xcel paradigm. This becomes a concurrent expense, as opposed to a big up-front expense. Plus, you are not limited to the physical building roof area to determine the offset you might subscribe for. There are a couple of these types of installations north of GVR Blvd and east of Pena Blvd. Usually, the way the economics work out, from a pure dollar cost, you save significantly less, but capital costs are eliminated. And they are structured to allow you to opt-out at any time. Therefore, there is no payback period, since there is no capital outlay.

It appears that most of the Community Solar options that exist in the marketplace are geared towards residential subscribers. However, there are a couple of companies that provide Community Solar subscriptions to commercial customers of Xcel. We have received two proposals from Community system providers. One indicated that the rates to purchase from their company would be the same as we would pay to Xcel. Thus, the only argument for opting to go with this provider would be that we would be getting our power from a purely dedicated alternative renewable energy source.

The second proposal would save us $0.00371 / kWh in the initial year. The savings is given based upon the differences in the Community Solar and Xcel “utility base rates”, which is not the actual final billing rate per kWh. Xcel has an entire host of “add-on” charges that are itemized on our utility billings, for such things as “Transmission Cost Adjustment”, “Electrical Commodity Adjustment”, “Demand Side Management Cost”, and “Transmission Electrical Plan”, etc. We would still be responsible for those charges to Xcel.

Over the course of a 20-year subscription, the total projected savings are $45,874. We have extrapolated those savings for 25 years to be comparable with the active solar analyses, with a total projected savings of $67,603. The estimated annual saving for the first year would be $979, growing slightly every year until year 20, the projected annual savings would be $3,787. In year 25 they would be $4,732. Unlike the analysis provided for the active solar systems, the number for savings is given for the entire community, **not per household**. The estimated savings are based upon a 100% subscription offset to our current combined building electrical consumption. This figure is in the process of being refined, as we have asked some additional questions regarding the impact of changing the rate schedule for the Clubhouse building from the SG to C meter rate schedule, by installing demand load limiting devices as discussed earlier in the active solar alternative. The preliminary indication is the saving increment would be “slightly higher”. The proposer has also indicated it is possible to subscribe to more than a 100% offset, by an amount up to a 120% offset. The additional incremental kWh savings could then be used as an offset against the total Xcel add-ons in an attempt to generate save some additional money to be used to offset the Xcel “add-ons”.

It is our opinion, that should this option be pursued, we would not need to obtain the approval of the Town Center Metro District Board, as there are no permanent commitments, there are no up-front costs to begin the program, and we could exit the program at any time without penalty.

Option E – a Hybrid approach utilizing an active solar system, and supplementing the active solar with power purchased from a Community Solar system. The goal is to replace Xcel Energy with 100% renewable power to provide the difference in utility usage that the active solar system doesn’t produce and save the most money in operating expenses possible.

The cost for this approach will vary based upon the method of payment utilized for the active solar system – either Option A, B, or C. We are including in the analysis exhibits a projection of savings using the 20-year C-PACE payment method (Option C). We have selected this option to illustrate the combined savings that could be achieved.

It is possible to interpret the numbers, with the savings generated by the Community Solar portion of the option, to assist with the capital payback for Options A and B. For Option C, since we have defined the payback period to be zero years, the contribution of the Community Solar option will serve to assist in reducing the money needed to budget for utility expenses. Any reduction in total budget expenses could result in a lowering of the mill levy needed to generate property tax revenue

The objective of 100% power replacement with renewable energy sources is probably going to fall a little short. Just as with the installation of a solar panel system on the roof, the Community Solar system will see a reduction in production capacity every year as it ages. That reduction is the same for both systems, calculated to be 0.50% per year. (this seems to be an industry standard for degradation). The subscription for a Community Solar system is based upon a fixed number of panels, and the production those panels will produce. In 10 years the expected production loss across both systems will be 5% of the initial production. This means that unless the total energy consumption can be reduced year over year by the same amount as the efficiency loss of the systems, the need to look to Xcel for the remaining power will exist. It might be possible, though not guaranteed, to subscribe to additional Community Solar generation capacity to fill in those naturally occurring gaps.

Option F: The option to do nothing and remain with the status quo.

Not much needs to be said here. The active portion of this option would be to look at, thru the process of energy audits and examination of existing infrastructure efficiency, ways to simply reduce consumption. Many of these tasks were outlined at the beginning. Most likely there will be capital costs associated with making the changes. Some can be covered within the existing budgets through short time payback periods. Some may be precipitated by the need or requirement to replace a faulty or failed component, such as a pump. When these events occur, it will be prudent to explore our options for replacements.

The following pages contain the two proposals discussed here. The Active solar proposal is from Solar 4 Planet A, and the Community Solar proposal is from Pivot Energy.

Also included are economic analysis tables for each of the 3 Active Solar options that illustrate projected annual utility savings integrated with the payback alternates examined and a table showing how the Hybrid system economics would work.

During the discussion on Saturday, we will present a newly prepared Comparative Analysis chart, and review the cash flow/amortization tables we modeled to illustrate the different methods of financing the active solar option.

Bring your questions or observations. We will do our best to answer them.

Fairway Villas CAC

FAIRWAY VILLAS SOLAR STUDY ALTERNATIVES

PREPARED BY FAIRWAY VILLAS CAC
FEBRUARY 2022
MODIFIED APRIL 2022
Rev. April 19, 2022
Al Morie

Fairway Villas Solar PPA and C-PACE Financing Alternatives

C-PACE Financing Assumptions

PPA Purchase Amount		167,500	
C-PACE Fees	2.25%	3,769	7,194
Bank Financing Fees	2.00%	3,425	
C-PACE Financed Amount		174,694	(Number used in C-PACE scenarios for amortization amount)
Interest Rate	5.00%		
Number of Payments per Year	1		

3.50% Assumed Xcel Annual escalation rate from Solar 4 Planet A

COMPARATIVE ANALYSIS OPTION A

Fairway Villas Cash Purchase

Year	Xcel w/o Solar		Production	Rate/kWh	Excel bill Savings	Purchase Investment	Annual Cash Flow	Cumulative Savings	Ave Annual Residence Tax Savings	Ave. Annual Residence PT cost to fund	Average Annual Residence PT Cash Flow *	2021 SD1 & SD4 Assessed Valuation Average PT Mill Levy for Investment
1	31,024		117,362	0.1250	14,670	**211,500**	(196,830)	(196,830)	40	572	(532)	16.723
2	32,110		116,775	0.1294	15,108		15,108	(181,722)	41	0	41	-
3	33,234		116,191	0.1339	15,558		15,558	(166,164)	42	0	42	-
4	34,397		115,610	0.1386	16,022		16,022	(150,141)	43	0	43	-
5	35,601		115,032	0.1434	16,500		16,500	(133,641)	45	0	45	-
6	36,847		114,457	0.1485	16,992		16,992	(116,649)	46	0	46	-
7	38,136		113,885	0.1537	17,499		17,499	(99,149)	47	0	47	-
8	39,471		113,315	0.1590	18,021	-	18,021	(81,128)	49	0	49	-
9	40,853		112,749	0.1646	18,559		18,559	(62,570)	50	0	50	-
10	42,283		112,185	0.1704	19,112		19,112	(43,458)	52	0	52	-
11	43,762		111,624	0.1763	19,682		19,682	(23,776)	53	0	53	-
12	45,294		111,066	0.1825	20,269		20,269	(3,507)	55	0	55	-
13	46,879		110,511	0.1889	20,874		20,874	17,367	56	0	56	-
14	48,520		109,958	0.1955	21,496		21,496	38,863	58	0	58	-
15	50,218		109,408	0.2023	22,137		22,137	61,001	60	0	60	-
16	51,976		108,861	0.2094	22,798		22,798	83,798	62	0	62	-
17	53,795		108,317	0.2167	23,478		23,478	107,276	63	0	63	-
18	55,678		107,775	0.2243	24,178		24,178	131,453	65	0	65	-
19	57,627		107,237	0.2322	24,899		24,899	156,352	67	0	67	-
20	59,644		106,700	0.2403	25,641		25,641	181,994	69	0	69	-
21	61,731		106,167	0.2487	26,406		26,406	208,400	71	0	71	-
22	63,892		105,636	0.2574	27,194		27,194	235,594	73	0	73	-
23	66,128		105,108	0.2664	28,005		28,005	263,599	76	0	76	-
24	68,442		104,582	0.2758	28,840		28,840	292,438	78	0	78	-
25	70,838		104,059	0.2854	29,700		29,700	322,139	80	0	80	-
Totals	1,208,380		2,764,570		533,639	**211,500**	**322,139**		1,442	572	871	
Total Savings on Investment							**322,139**		533,639	211,500	322,139	

* Annual PT Cash Flow is assumed to be realized by changes in corresponding budgeted operating expense. If the number for each year is positive, there is a theoritical saving on total property taxes paid to the Subdistrict. A negative number indicates a net property tax increase in that amount

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COMPARATIVE ANALYSIS OPTION B

Fairway Villas Prepaid Purchase Agreement

Year	Xcel w/o Solar		Production	Rate/kWh	Excel bill Savings	PPA Investment	Annual Cash Flow	Cumulative Savings	Ave Annual Residence Tax Savings	Ave. Annual Residence PT cost to fund	Average Annual Residence PT Cash Flow *	2021 SD1 & SD4 Assessed Valuation Average PT Mill Levy for Investment
1	31,024		117,362	0.1250	14,670	150,750	(136,080)	(136,080)	40	407	(368)	11.920
2	32,110		116,775	0.1294	15,108		15,108	(120,972)	41	0	41	-
3	33,234		116,191	0.1339	15,558		15,558	(105,414)	42	0	42	-
4	34,397		115,610	0.1386	16,022		16,022	(89,391)	43	0	43	-
5	35,601		115,032	0.1434	16,500		16,500	(72,891)	45	0	45	-
6	36,847		114,457	0.1485	16,992		16,992	(55,899)	46	0	46	-
7	38,136		113,885	0.1537	17,499		17,499	(38,399)	47	0	47	-
8	39,471		113,315	0.1590	18,021	16,750	1,271	(37,128)	49	45	3	1.324
9	40,853		112,749	0.1646	18,559		18,559	(18,570)	50	0	50	-
10	42,283		112,185	0.1704	19,112		19,112	542	52	0	52	-
11	43,762		111,624	0.1763	19,682		19,682	20,224	53	0	53	-
12	45,294		111,066	0.1825	20,269		20,269	40,493	55	0	55	-
13	46,879		110,511	0.1889	20,874		20,874	61,367	56	0	56	-
14	48,520		109,958	0.1955	21,496		21,496	82,863	58	0	58	-
15	50,218		109,408	0.2023	22,137		22,137	105,001	60	0	60	-
16	51,976		108,861	0.2094	22,798		22,798	127,798	62	0	62	-
17	53,795		108,317	0.2167	23,478		23,478	151,276	63	0	63	-
18	55,678		107,775	0.2243	24,178		24,178	175,453	65	0	65	-
19	57,627		107,237	0.2322	24,899		24,899	200,352	67	0	67	-
20	59,644		106,700	0.2403	25,641		25,641	225,994	69	0	69	-
21	61,731		106,167	0.2487	26,406		26,406	252,400	71	0	71	-
22	63,892		105,636	0.2574	27,194		27,194	279,594	73	0	73	-
23	66,128		105,108	0.2664	28,005		28,005	307,599	76	0	76	-
24	68,442		104,582	0.2758	28,840		28,840	336,438	78	0	78	-
25	70,838		104,059	0.2854	29,700		29,700	366,139	80	0	80	-
Totals	1,208,380		2,764,570		533,639	167,500	366,139		1,442	453	990	
Total Savings on Investment							**366,139**		533,639	167,500	366,139	
									-			

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COMPARATIVE ANALYSIS OPTION C

Fairway Villas C-PACE Financing for 20 Year Period Financed Amount = 174,694						C-PACE Payback Period in Years						2021 SD1 & SD4 Assessed Valuation
Year	Xcel w/o Solar		Production	Rate/kWh	Excel bill Savings	**20**	Cash Flow	Cumulative Savings	Ave Annual Residence Tax Savings	Ave. Annual Residence PT cost to fund	Average Annual Residence PT Cash Flow *	Average PT Mill Levy for Investment
1	31,024		117,362	0.1250	14,670	14,018	652	652	40	38	2	1.108
2	32,110		116,775	0.1294	15,108	14,018	1,090	1,742	41	38	3	1.108
3	33,234		116,191	0.1339	15,558	14,018	1,540	3,283	42	38	4	1.108
4	34,397		115,610	0.1386	16,022	14,018	2,004	5,287	43	38	5	1.108
5	35,601		115,032	0.1434	16,500	14,018	2,482	7,769	45	38	7	1.108
6	36,847		114,457	0.1485	16,992	14,018	2,974	10,744	46	38	8	1.108
7	38,136		113,885	0.1537	17,499	14,018	3,481	14,225	47	38	9	1.108
8	39,471		113,315	0.1590	18,021	14,018	4,003	18,228	49	38	11	1.108
9	40,853		112,749	0.1646	18,559	14,018	4,541	22,769	50	38	12	1.108
10	42,283		112,185	0.1704	19,112	14,018	5,094	27,863	52	38	14	1.108
11	43,762		111,624	0.1763	19,682	14,018	5,664	33,527	53	38	15	1.108
12	45,294		111,066	0.1825	20,269	14,018	6,251	39,779	55	38	17	1.108
13	46,879		110,511	0.1889	20,874	14,018	6,856	46,634	56	38	19	1.108
14	48,520		109,958	0.1955	21,496	14,018	7,478	54,113	58	38	20	1.108
15	50,218		109,408	0.2023	22,137	14,018	8,119	62,232	60	38	22	1.108
16	51,976		108,861	0.2094	22,798	14,018	8,780	71,012	62	38	24	1.108
17	53,795		108,317	0.2167	23,478	14,018	9,460	80,471	63	38	26	1.108
18	55,678		107,775	0.2243	24,178	14,018	10,160	90,631	65	38	27	1.108
19	57,627		107,237	0.2322	24,899	14,018	10,881	101,512	67	38	29	1.108
20	59,644		106,700	0.2403	25,641	14,018	11,623	113,135	69	38	31	1.108
21	61,731		106,167	0.2487	26,406	-	26,406	139,542	71	0	71	-
22	63,892		105,636	0.2574	27,194	-	27,194	166,735	73	0	73	-
23	66,128		105,108	0.2664	28,005	-	28,005	194,740	76	0	76	-
24	68,442		104,582	0.2758	28,840	-	28,840	223,580	78	0	78	-
25	70,838		104,059	0.2854	29,700	-	29,700	253,280	80	0	80	-
Totals	1,208,380		2,764,570		533,639	280,358	253,280		1,442	758	685	
Total Savings on Investment							**253,280**		533,639	280,358	253,280	

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FAIRWAY VILLAS SOLAR STUDY ALTERNATIVES

PREPARED BY FAIRWAY VILLAS CAC
FEBRUARY 2022
MODIFIED APRIL 2022
Al Morie

COMPARATIVE ANALYSIS OPTION E

Fairway Villas C-PACE Financing for 20 Year Period Financed Amount = 174,694						C-PACE Payback Period in Years	Hybrid Option Showing The Addition of Community Solar Savings								2021 SD1 & SD4 Assessed Valuation
Year	Xcel w/o Solar		Production	Rate/kWh	Excel bill Savings	**20**	Cash Flow	Cumulative Savings	Pivot Savings	Pivot Cumulative Savings	Solar + Pivot Cumulative Savings	Ave Annual Residence Tax Savings	Ave. Annual Residence PT cost to fund	Average Annual Residence PT Cash Flow *	Average PT Mill Levy for Investment
1	31,024		117,362	0.1250	14,670	14,018	652	652	513	513	1,166	41	38	3	1.108
2	32,110		116,775	0.1294	15,108	14,018	1,090	1,742	577	1,090	2,832	42	38	5	1.108
3	33,234		116,191	0.1339	15,558	14,018	1,540	3,283	642	1,732	5,015	44	38	6	1.108
4	34,397		115,610	0.1386	16,022	14,018	2,004	5,287	709	2,441	7,728	45	38	7	1.108
5	35,601		115,032	0.1434	16,500	14,018	2,482	7,769	777	3,218	10,987	47	38	9	1.108
6	36,847		114,457	0.1485	16,992	14,018	2,974	10,744	846	4,064	14,808	48	38	10	1.108
7	38,136		113,885	0.1537	17,499	14,018	3,481	14,225	917	4,981	19,206	50	38	12	1.108
8	39,471		113,315	0.1590	18,021	14,018	4,003	18,228	988	5,969	24,197	51	38	13	1.108
9	40,853		112,749	0.1646	18,559	14,018	4,541	22,769	1,063	7,032	29,801	53	38	15	1.108
10	42,283		112,185	0.1704	19,112	14,018	5,094	27,863	1,139	8,171	36,034	55	38	17	1.108
11	43,762		111,624	0.1763	19,682	14,018	5,664	33,527	1,216	9,387	42,914	56	38	19	1.108
12	45,294		111,066	0.1825	20,269	14,018	6,251	39,779	1,295	10,681	50,460	58	38	20	1.108
13	46,879		110,511	0.1889	20,874	14,018	6,856	46,634	1,374	12,056	58,690	60	38	22	1.108
14	48,520		109,958	0.1955	21,496	14,018	7,478	54,113	1,457	13,513	67,625	62	38	24	1.108
15	50,218		109,408	0.2023	22,137	14,018	8,119	62,232	1,541	15,054	77,286	64	38	26	1.108
16	51,976		108,861	0.2094	22,798	14,018	8,780	71,012	1,627	16,681	87,692	66	38	28	1.108
17	53,795		108,317	0.2167	23,478	14,018	9,460	80,471	1,715	18,396	98,867	68	38	30	1.108
18	55,678		107,775	0.2243	24,178	14,018	10,160	90,631	1,804	20,200	110,831	70	38	32	1.108
19	57,627		107,237	0.2322	24,899	14,018	10,881	101,512	1,895	22,094	123,606	72	38	35	1.108
20	59,644		106,700	0.2403	25,641	14,018	11,623	113,135	1,988	24,083	137,218	75	38	37	1.108
21	61,731		106,167	0.2487	26,406	-	26,406	139,542	2,084	26,166	165,708	77	0	77	-
22	63,892		105,636	0.2574	27,194	-	27,194	166,735	2,181	28,347	195,082	79	0	79	-
23	66,128		105,108	0.2664	28,005	-	28,005	194,740	2,280	30,627	225,367	82	0	82	-
24	68,442		104,582	0.2758	28,840	-	28,840	223,580	2,381	33,008	256,588	84	0	84	-
25	70,838		104,059	0.2854	29,700	-	29,700	253,280	2,484	35,492	288,772	87	0	87	-
Totals	1,208,380				533,639	280,358	253,280		35,492			1,538	758	780	
Total Savings on Investment							**253,280**		**288,772**			569,130	280,358	288,772	

* Annual PT Cash Flow is assumed to be realized by changes in corresponding budgeted operating expense. If the number for each year is positive, there is a theoritical saving on total property taxes paid to the Subdistrict. A negative number indicates a net property tax increase in that amount

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Better Energy, Better Buildings

PREPARED FOR:

- Fairway Villas CAC Board
- (“Town Center Subdistricts 1 & 4”)
- 5223 Espana St & 20309 53rd Ave
- Denver, CO 80249
- February 3, 2022, expires April 3, 2022

PREPARED BY:

Andrew Ehrnstein

Owner – Solar 4 Planet A LLC

Andrew@solar4planetA.com

720.443.1239

The Cost of Doing Nothing

You signed up to buy the utility's power when you bought your property because there was no other option.

$25,926 escalation assumption 3.5%→ $59,197 $1,009,798

Your annual electric bill today **Your estimated bill in 25 years*** **Total utility cost over 25 years***

With the utility company, can you. . .

- **Switch to a different provider?**
- **Convince them to stop raising your Rates?**
- **Ask them to stop polluting?**

Why Solar is a Better Energy

Solar power provides many benefits to building owners, and each person has their own goals. What are the most important aspects to you?

- **Lower Bills!**
- **Protection from Rising Rates.**
- **Branding – is sustainability important to your homeowners and buyers?**
- **Financial Independence from the Utility**
- **Clean Air and Water – we all live on Planet A!**

Now you have the choice to generate affordable, clean energy off your own roof. This pair of systems will produce so much clean power that it will have the equivalent of these environmental benefits EACH YEAR:

74	150,979	66,399
Acres of Forest	Miles Driven	Pounds of Coal Burned

Solar 4 Planet A

System Design and Production

<u>74.8 kW DC Photovoltaic System Total</u>

46.6 kW on Clubhouse
28.2 kW on Lodge

Solar Panels:	170 x 440 watt mono
Inverter:	SolarEdge single phase
Attachments:	RT mini feet and Unirac
Controls:	Sense monitoring & control to keep Demand under 50kW

Total Consumption:	247,191 kWh
System Production:	117,362 kWh
Solar Offset:	47.5 %

<u>Includes:</u>

- 25+ Year Warranty on Panels
- 12 Year Warranty on Inverter
- 7 Year Workmanship Warranty and Insurance (Lease term)
- Online Energy Production & Consumption monitoring and Demand Control device

Your Solar Savings

Payment Options	Photon Pre Paid Lease
IRR 25 Years	13.9 %
LCOE PV Generation	$0.054 / kWh
= Cost per solar-generated kWh, 25 years	
Payback Period	9 yrs, 10 mos.
Total Payments	$165,000
Total Incentives (Incentives will belong to Photon Brothers)	$0
Net Payments	$165,000
Electric Bill Savings - Term	$533,639
Monthly Payment	$0
Upfront Payment	$148,500
Term	7 Years
Surrender Payment (at end of Term)	$14,960

NOTES:

- Savings assume Meter Aggregation and future billing is on C-Commercial rate
- System installation will include Demand Management devices to keep total demand below 50kW at all times, protecting C-Commercial rate status
- Customer will complete this process with Xcel Energy with Photon Brothers' guidance

Cash Flows

Power Purchase Agreement (7 years) with Meter Aggregation scenario:

Year	Xcel w/o solar	Post-solar	Investment	Production	Rate/kWh	Xcel bill svgs	Cash Flows	Cumulative	Added Equity
1	$ 31,024	$ 16,354	$ 148,500	117,362	0.125	$ 14,670	$ (133,830)		
2	$ 32,105	$ 16,998		116,775	0.129	$ 15,108	$ 15,108	$ (118,722)	
3	$ 33,225	$ 17,666		116,191	0.134	$ 15,558	$ 15,558	$ (103,164)	
4	$ 34,383	$ 18,361		115,610	0.139	$ 16,022	$ 16,022	$ (87,141)	
5	$ 35,582	$ 19,082		115,032	0.143	$ 16,500	$ 16,500	$ (70,641)	
6	$ 36,823	$ 19,831		114,457	0.148	$ 16,992	$ 16,992	$ (53,648)	
7	$ 38,108	$ 20,609		113,885	0.154	$ 17,499	$ 17,499	$ (36,149)	
8	$ 39,437	$ 21,416	$ 16,500	113,315	0.159	$ 18,021	$ 1,521	$ (34,628)	$ 225,264
9	$ 40,813	$ 22,254		112,749	0.165	$ 18,559	$ 18,559	$ (16,070)	
10	$ 42,237	$ 23,125		112,185	0.170	$ 19,112	$ 19,112	$ 3,042	
11	$ 43,711	$ 24,029		111,624	0.176	$ 19,682	$ 19,682	$ 22,725	
12	$ 45,237	$ 24,967		111,066	0.182	$ 20,269	$ 20,269	$ 42,994	
13	$ 46,815	$ 25,942		110,511	0.189	$ 20,874	$ 20,874	$ 63,867	
14	$ 48,450	$ 26,953		109,958	0.195	$ 21,496	$ 21,496	$ 85,364	
15	$ 50,141	$ 28,004		109,408	0.202	$ 22,137	$ 22,137	$ 107,501	
16	$ 51,892	$ 29,094		108,861	0.209	$ 22,798	$ 22,798	$ 130,299	
17	$ 53,703	$ 30,226		108,317	0.217	$ 23,478	$ 23,478	$ 153,776	
18	$ 55,579	$ 31,401		107,775	0.224	$ 24,178	$ 24,178	$ 177,954	
19	$ 57,519	$ 32,621		107,237	0.232	$ 24,899	$ 24,899	$ 202,853	
20	$ 59,528	$ 33,887		106,700	0.240	$ 25,641	$ 25,641	$ 228,494	
21	$ 61,607	$ 35,201		106,167	0.249	$ 26,406	$ 26,406	$ 254,900	
22	$ 63,759	$ 36,565		105,636	0.257	$ 27,194	$ 27,194	$ 282,094	
23	$ 65,986	$ 37,982		105,108	0.266	$ 28,005	$ 28,005	$ 310,099	
24	$ 68,292	$ 39,452		104,582	0.276	$ 28,840	$ 28,840	$ 338,939	
25	$ 70,677	$ 40,977		104,059	0.285	$ 29,700	$ 29,700	**$ 368,639**	
							IRR:		
Sum:	**$ 1,206,636**	**$ 672,996**	**$ 165,000**	**2,764,574**		**$ 533,639**	**12.4%**		

Next Steps

1. Sign the Agreement
   Review and sign the paperwork to get the process started. Provide copy of recent utility bills. This system proposal will require Meter Aggregation process, which Photon Brothers will manage for you.
2. Finalize System Design
   We will perform a site survey to ensure that all of the equipment can be installed and start the permitting process upon your approval.
3. Install the System
   We will schedule an installation date once the utility and building department grant us permission to install the system.
4. Inspection
   We will arrange the final inspection from the building department. Once that is complete, the utility will install a net meter and give you permission to turn on your system.
5. System Operational
   Flip the switch to turn your system on and start generating clean renewable energy on your roof!
6. Solar Celebration!
   This is a great time to share your story with the community. Let's have a party or Lunch 'n Learn and help more people make the switch!

Referral Program:
Are you enjoying going solar?
Please introduce Solar 4 Planet A to your friends

- Residential properties
- Commercial properties
- One fee per introduction
- $500 paid upon installation

Who else do you know that would enjoy going solar with us?

January 24, 2022

Pivot Energy

Community Solar Proposal for Town Center Subdistrict

Prepared for:

Town Center Subdistrict

Prepared by:

Pivot Energy
Matthew Brenn
(970) 631-7977

Company Overview

Pivot Energy was founded in 2009 in St. Louis, Missouri but has relocated to Denver, Colorado in 2015. We are a turnkey developer of commercial and industrial solar energy projects in the United States. Pivot has quietly become a national leader for commercial and industrial solar projects, with hundreds of successful projects completed for small, mid-sized and Fortune 500 companies, as well as for nonprofit, government and military organizations. In 2016, we added a community solar division to our company and hired several experienced community solar developers that have helped pioneer the solar garden business model.

Pivot has experience in building all types of solar PV projects, including rooftop, ground-mount, carport, and other design types. Our development team works in conjunction with our EPC team to plan a project for success from the beginning.

Pivot is headquartered Denver, CO with additional offices in St. Louis, MO and Chicago, IL. We maintain a strong staff of NABCEP certified personnel. All field personnel are OSHA certified, and participate in an extensive ongoing Quality Assurance (QA) program. We also offer a variety of monitoring and maintenance plans to suit our client needs.

As a Clean Energy Services provider, Pivot is your single source for community solar, construction management, land development, energy storage, solar subscription services, and demand response strategies. We also offer project financing, with a focus on PACE financing, PPAs and leases.

Community Solar

Community solar is an easy option for customers who are considering the benefits of going solar. Serviced by Pivot Energy through your utility providor, community solar allows both residential and commercial customers to subscribe to an off-site solar garden and get credited directly on your electric utility bill for your portion of the solar electricity production each month.

For each kilowatt-hour produced and delivered on your behalf by the solar garden, you will be credited at the bill credit rate applicable to each registered meter and Pivot Energy will charge the community solar subscription rate as seen below. The difference between the credit and the Pivot Energy charge is your cost savings by choosing community solar.

Pivot Energy

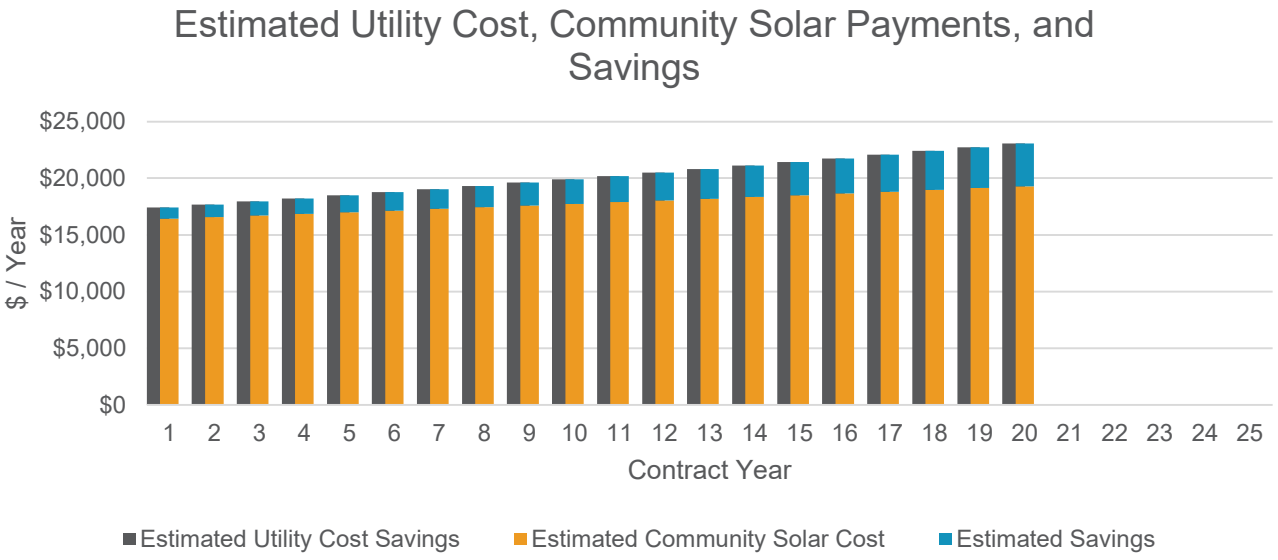
Community Solar for Town Center Subdistrict

131 kWdc	$0.062 / kWh	$45,874
Capacity	1.35% / Year	Estimated Savings

The graph below provides a snapshot of the rate plan proposed with a Pivot Energy community solar subscription. The amounts shown below are dependent on the contracted capacity, annual increase of utility credit rates, future applicable meter types, and estimated performance of the community solar garden.

20 Year Summary		
	Community Solar	Utility Credit *
Rate ($ / kWh)	($0.06240)	$0.06611
Escalator	1.35%	2.00%
Term Average Rate	($0.07093)	$0.08005
Est Term Total	($356,553)	$402,428
Est Term Savings	$45,874	

* Utility Rates are based on blended credit values. Utility Escalators are based on estimates.



Pivot Energy

Previous Clients

JEFFERSON COUNTY COLORADO

TOWN OF CARBONDALE ESTABLISHED 1887

ROARING FORK SCHOOLS

TOWN OF SILT

metrowest HOUSING SOLUTIONS

NEW CASTLE AUTHENTICALLY COLORADO

ST. VRAIN VALLEY SCHOOLS academic excellence by design

TOWN OF DE BEQUE Colorado

SPARK SUSTAINABILITY PARK

Foothills Park & Recreation District

GRAND JUNCTION REGIONAL AIRPORT

Stanley MARKETPLACE

Professional Credentials

NABCEP CERTIFIED PV Installation Professional

Pivot has one of the highest ratio of NABCEP certified personnel on staff, nationally, amongst our peer companies. NABCEP certification is considered the “gold standard” for the Solar PV industry.

SEIA Solar Energy Industries Association® Member

Pivot is a member in good standing with the premier Solar industry association. Pivot has adopted the Association’s Ethics Policy.

PE

Pivot has licensed professional engineers on staff.

Certified B Corporation™

Pivot is a true Triple Bottom Line company, and is proud to be a certified B Corporation, measuring results not only by profitability, but equally by metrics that quantify benefits to people (employees, community) and planet (sustainable operations).

Pivot Energy

Contract Year	Est. Community Solar Production Share	Est. Utility Energy Rate*	Est. Utility Cost Savings	Community Solar Rate	Est Community Solar Cost	Est. Savings
1	263,505	$0.06611	$17,420	$0.06240	$16,441	$979
2	262,187	$0.06743	$17,680	$0.06324	$16,580	$1,100
3	260,877	$0.06878	$17,943	$0.06409	$16,720	$1,224
4	259,572	$0.07016	$18,211	$0.06496	$16,861	$1,350
5	258,274	$0.07156	$18,482	$0.06583	$17,003	$1,479
6	256,983	$0.07299	$18,758	$0.06672	$17,146	$1,611
7	255,698	$0.07445	$19,037	$0.06762	$17,291	$1,746
8	254,420	$0.07594	$19,321	$0.06854	$17,437	$1,884
9	253,147	$0.07746	$19,609	$0.06946	$17,584	$2,025
10	251,882	$0.07901	$19,901	$0.07040	$17,732	$2,169
11	250,622	$0.08059	$20,197	$0.07135	$17,882	$2,316
12	249,369	$0.08220	$20,498	$0.07231	$18,032	$2,466
13	248,122	$0.08384	$20,804	$0.07329	$18,185	$2,619
14	246,882	$0.08552	$21,114	$0.07428	$18,338	$2,776
15	245,647	$0.08723	$21,428	$0.07528	$18,493	$2,936
16	244,419	$0.08898	$21,747	$0.07630	$18,648	$3,099
17	243,197	$0.09076	$22,071	$0.07733	$18,806	$3,266
18	241,981	$0.09257	$22,400	$0.07837	$18,964	$3,436
19	240,771	$0.09442	$22,734	$0.07943	$19,124	$3,610
20	239,567	$0.09631	$23,073	$0.08050	$19,285	$3,787

* Year 1 "Est. Utility Energy Rate" of $0.06457 according to Xcel Energy published rate update on Nov 15, 2021. Effective Jan 1, 2022.