CMCO Electric & Solar is privileged to present

A personalized solar electric analysis for:

Jack Sun and Jill Sky

(408) 111 1111H, (408) 222 2222C
cust@buyer.com

Site Address:
111 Sunny Ave
Roseville, CA 95678

of a

8.5 kW Residential PV System

prepared by:
Cameron Miller
CMCO Electric & Solar
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cmcoelectric@gmail.com

May 7, 2010

OnGrid Tool v4.03

Cameron Miller
CMCO Electric Solar

Proposal for: Jack Sun and Jill Sky

Dear Jack Sun and Jill Sky,

Thank you for the opportunity to present you with a proposal for a solar electric system. CMCO Electric & Solar is delighted to be working with you.

This proposal covers the following areas:

- Your current usage profile and economic assumptions included in your customized analysis
- A summary of your site conditions
- Opportunities to save energy
- How solar electric systems work
- Our recommendation of a solar system to fit your needs
- A cost analysis, including incentive programs, tax credits and other critical information leading to the economic bottom line.
- A financial analysis of what the solar system will do for you economically, including:
  > How much the solar system will save on your electric bill
  > How much the system will increase your property's value
  > If you finance the system, how much it will cost or save you on a monthly basis, both initially, and over time.

  > As an investment, what its long-term Compound Annual Rate of Return will be (comparable to stocks, bonds, savings, etc).

  > An environmental analysis, showing how much benefit you'll be creating on top of the savings you'll enjoy.

Please contact me at:
Cameron Miller
CMCO Electric & Solar
Voice (916) 919-5823

cmcoelectric@gmail.com

I would be pleased to answer any questions. I will also follow up with you shortly.

Sincerely,

Cameron Miller

Notice

This information is provided as an illustration of potential financial benefits stemming from ownership of a renewable energy power system. This is not a production guarantee. A professional accountant or tax advisor should confirm these estimates. Neither OnGrid Solar nor any authorized user of the tool used to produce these results warrants the applicability of these estimates for particular business cases, and both disclaim all liability.
The estimates of production and other results can be independently validated at the following websites:
PV Watts Solar Performance Estimator: http://www.nrel.gov/rredc/pvwatts
California Solar Initiative - Solar 101: http://www.gosolarcalifornia.org/solar101/index.html
California Energy Commission: http://www.consumerenergycenter.org/renewables/estimator/index.html
The DSIRE Database of Incentives: http://www.dsireusa.org/solar

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Energy Usage Profile

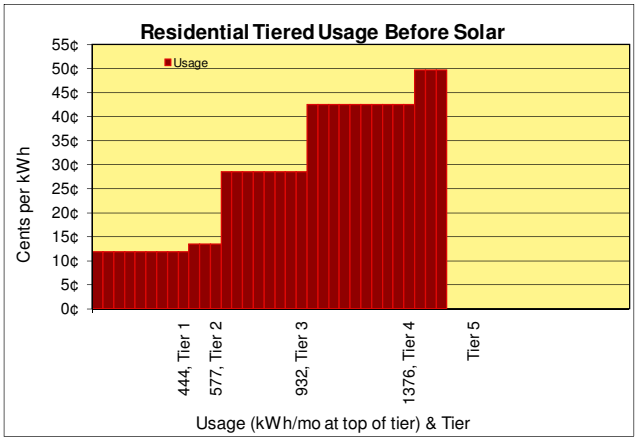
This describes the historical usage of energy, a major factor in sizing a solar system

Your property has used, on average:
1,500 kWh in the winter months (Oct thru Apr) and
1,500 kWh in the summer months (May thru Oct)
The total annual usage has been: 18,000 kWh
This equates to an average electric bill of $432.01 per month.

We are not anticipating any changes in usage due to any lifestyle changes or number of occupants.

We are not anticipating that you will improve your building's efficiency. However, Energy Efficiency is a cost effective way to improve the return on your solar investment, and do the right thing environmentally. There are federal tax credits that can make energy efficiency even more attractive. More on this later.

This home is above average usage, with top usage in Tier 5. The top rate you pay for electricity is 49.8¢ per kWh. The average rate was 28.8¢ per kWh. Solar will save electricity in the top tiers first.

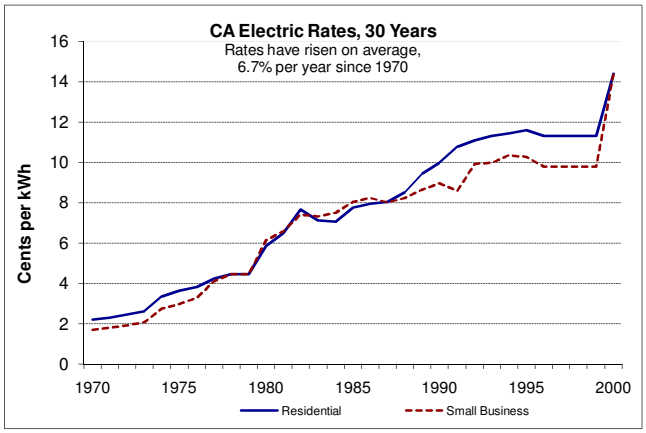


The Tier pricing system is a progressive pricing system whereby the more you consume, the higher the rate becomes. The top of Tier 2 represents the 'average' user in your geography who uses 130% of 'baseline'. Baseline for your geography is 16.5 kWh per day in the summer, and 12.7 kWh per day in the winter. In a 30-day month, this translates to 495 kWh per month in the summer, and 381 kWh per month in the winter.

Your current electric rate is E1-SB, which is a Residential Tiered-kWh rate. TOU stands for Time-of-Use, which many times, is a beneficial rate for solar. TOU rates value electricity differently depending on time of day. Solar can sell back best during the day, which usually corresponds with the highest TOU rates. We suggest you switch to E6-SB, which is a Residential TOU Tiered-kWh rate.

Rate Escalation Factors

Rate escalation plays a big factor in future energy costs, and magnifies the amount a solar system will save you. Historically, escalation has been around 6.7% on average over 30 years from 1970-2001, much higher than the CPI. In this analysis, electric rate escalation of 4.0% has been factored in over the long term. The CPI-U (Urban Consumer Price Index) has increased about 3.1% annually since 1982. In this analysis, general inflation on maintenance, etc. is assumed to be 3.5%.



Tax Assumptions:

We've assumed the following tax brackets for factoring in certain tax implications:

28.0% Federal Income Tax Rate
9.3% State Income Tax Rate
34.7% Combined Net Fed & State Income Tax Rate (assuming itemized tax deductions)

Site Conditions & System Efficiency Factors

The anticipated orientation of your PV Array is 20° up from horizontal, and facing S. It will be mounted on your Spanish Tile roof.

Your site location in Roseville, CA receives about 5.5 hours of equivalent full noontime sun. This is based on 30-year annual average data for nearby Sacramento, CA found in the NREL Redbook (http://rredc.nrel.gov/solar/pubs/redbook). This level of sunshine can vary +/- 9% year to year due to weather.

Accounting for shading & orientation factors, we anticipate your system will have 5.5 hours of effective equivalent full noontime sun.

System Efficiency Estimations

In addition to shading & orientation, there are numerous system efficiency factors that must be included to make a reasonable, conservative estimation of production. These include inverter efficiency, module heating, wire losses, dust & dirt, and module mismatch factors. We expect that these will account for a total system efficiency factor of 72%. Normal loss factors for most systems are estimated to be 69%-73% (from the CEC guidebook, see http://www.energy.ca.gov/reports/2001-09-04_500-01-020.PDF).

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Opportunities For Saving Energy

Conservation - simply using or doing with less. This is always the most cost effective, but not always doable. Can you turn off or unplug an extra refrigerator in the garage, and only use it when it's really needed? Are there other things that are rarely used that can be shut off without impacting your lifestyle?

Energy Efficiency:
Getting the same benefits and enjoyment, but in ways that require less input energy. These are often very cost effective, but less in vogue than solar electricity. They include lighting upgrades and replacing refrigerator and other equipment or appliances with more modern and efficient products.

The American Council for an Energy Efficient Economy produces excellent guides for home and building energy efficiency and savings. More information is available at: http://www.aceee.org/consumer/consumer.htm

An energy efficiency audit can identify other ways to use less, and sometimes be even more comfortable.

Solar Electric System:
Solar Electricity, or 'PV', is the most interesting, hottest new technology. Strongly supported by the state & federal governments. Solar Electricity is one of the fastest growing energy technologies worldwide, growing over 35% each year for the last 8 years. Not actually a 'new' technology, the first solar panel was put into use in 1954. Most of the bigger solar manufacturers have over 20 years experience in producing and refining their products. Some have over 40 years experience.

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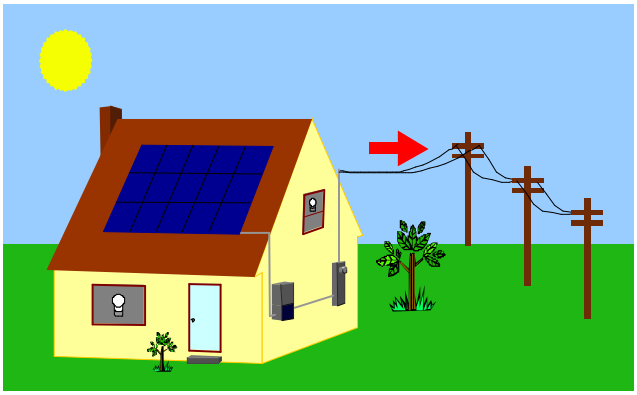
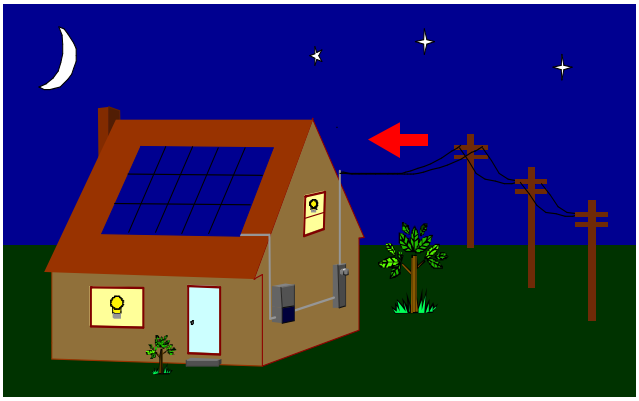
How Solar Electric Systems work

Solar Electric systems generate electricity silently and without any moving parts. Sunlight falls on the solar array (blue, on the roof), generating DC electricity. That DC electricity is converted into household 120V AC electricity by the inverter (blue & grey, on the wall). The AC electricity is fed into your electric meter and circuit breaker panel (grey, on the wall). The electricity either goes to your appliances and lights, or to the grid, or some to each. This all happens silently and automatically every day.



At night and during cloudy weather, the solar system's output is reduced or stopped; however, your home then gets electricity directly from the utility grid. You're always connected to the grid, so you can have as much power as you need, any time you need it, regardless of whether the solar system is able to put out any power.



When the solar system can put out power, it goes to reducing your usage at the time, or, if there is excess, to spinning the meter backwards, counting down your electric use and bill. Special metering, such as Time-of-Use metering and billing arrangements can help you take advantage of higher daytime rates, allowing you to sell power at a high rate, and buy it back at night at a lower rate. This helps reduce the necessary size of your solar system, while still cutting your bill by the same amount.

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Proposal for: Jack Sun and Jill Sky

Recommended Solar Electric System

Based on the above usage, site conditions and system factors, we recommend a 8.491 kW (CEC rating) system comprising 42 Sharp NU-U235F1 modules and 1 Fronius USA IG Plus 10.0-240 inverter. This system will offset about 96% of your electric bill.

Note: There are several ways of rating solar systems. One way is using the CEC AC rating system. The CEC AC rating system takes account of system performance reductions due to inverter efficiency and module heating effects. Using this rating system, the primary modules have a rating of 211.7 watts, and the inverters have an efficiency rating of 95.5%. The total system has a CEC AC rating of: 8.491 kW.

Another method is using the nameplate rating system, also known as STC (Standard Test Conditions) or DC rating of the system. This rating system assumes standard, ideal factory conditions. Using this rating system, the modules have a rating of 235 watts. The nameplate rating (STC) of this system is: 9.870 kW DC. These ratings are useful in comparing systems side-by-side.

It will be mounted on your Spanish Tile roof.

This system, in this configuration (with the shading, orientation, tilt and other factors assumed) is estimated to produce 14,335 kWh per year of usable electricity to offset your electric bill.

That is about 1,688 kWh per year per kW CEC AC capacity rating, or 1,452 kWh per year per kW STC nameplate rating. This might be useful to you for comparison, on a per kW basis, to estimations you might see in other tools or estimators, or in print from government energy agencies. It's a way of checking the validity of the estimations and proposal being presented to you.

Over time, solar systems lose a little bit of performance each year due to ageing of the solar modules. The annual module degradation rate in your system is estimated to be 0.5% per year (normal ranges are from 0% to 1%). Solar modules typically have a 20 or 25 year performance warranty, typically for 80% of their 'as new' performance, so you can rest assured that your system will have long lasting high performance.

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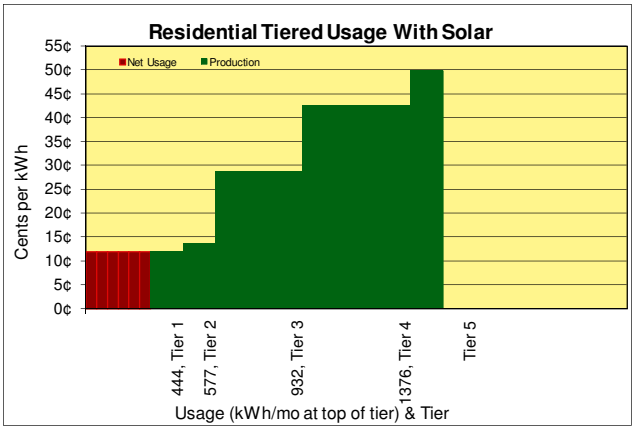
Electric Usage with Solar:
Your new average electric bill will be approximately $17 per month when averaged over a typical year. This is an estimate, and will be affected by many factors including any unanticipated changes in your usage, variations in the weather in a particular year, and excessive dirt build-up on the array.

This translates to a savings of approximately $415 per month when compared to what we expected your usage to adjust to with anticipated lifestyle changes. Over a year, we expect you will save about $4,983 The Pre-Tax value of the first year annual savings due to solar is $7,947. This is important for valuing the solar savings compared to other investments, which are often taxable.

Your net energy use will be substantially lower because of the production from the solar system. The total area in the chart below shows your total usage, and matches the usage in the previous chart above. However, the area in green is the fraction that will now come from solar.



Your new tier is now Tier 1. Your new marginal cost of electricity is 11.9¢ per kWh (that is, the new cost to switch on the lights. Your old cost to do so was 49.8¢ per kWh). Note: it is not necessary to produce all the electricity you use, because you are taking advantage of selling at higher rates, and buying at lower rates.

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Proposal for: Jack Sun and Jill Sky

Solar System Capital Cost and Incentive Summary

Your solar system is eligible for incentives to help make it more affordable and attractive. The breakdown for the cost of your system, from the top line, to the net cost, after all incentives is:

$	53,071	Total System Cost (includes full service, parts, delivery, installation, warranty, sales tax)
$	-	
$	-	
$	-	
$	-	
$	-	
$	53,071	Gross Top Line Cost ($6.25 per CEC AC Watt)
$	(5,243)	Rebate and non-Federal Grants (as applicable)
$	47,827	System Price after Rebate and non-Federal Grants
$	500	Estimated Permit Fees NOT included in system contract price
$	-	
$	-	
$	48,327	Cost After Rebate, non-Fed Grant, & Fees (may be the Tax Creditable Amount, see Tax Advisor)
$	-	
$	**48,327**	**Net Cost Up Front (after Rebate, Grants, & Fees)**
$	-	
$	-	
$	(14,498)	Federal Investment Tax Credit (ITC)
$	-	
$	33,829	Net System Cost after Tax Benefits, Rebates, and Grants
$	-	
$	**33,829**	**Net System Cost after Tax Benefits, Rebates, Grants, and PBIs**
$	-	
$	-	
$	**33,829**	**TOTAL NET COST OF SYSTEM (after tax effects)**

Incentives are reducing your cost of the system by approximately 36%, or about $19,242

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Financial Analysis & Payback

Your solar system will generate substantial savings on your electric bill. These savings can provide a variety of direct and future economic benefits. Some of the ways these economic benefits are measured include:

Direct, immediate & future savings on your electric bill creating improved cash flow
Total Lifecycle Payback
Home resale/appraisal value increase
Current and future cash flow if financed
Compound Annual Rate of Return (comparable to stocks, bonds, savings, etc)

Direct, Immediate & Future Savings

These immediate and future savings will immediately reduce the operating expenses of your home and improve your cash flow:

New average monthly electric bill:	**$**	**17**
Monthly savings:	**$**	**415**
Annual savings:	**$**	**4,983**

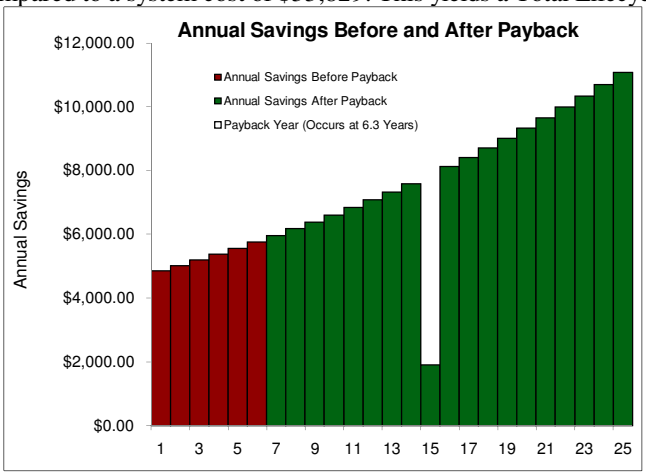
The savings will increase over time due to escalation, which we've agreed to anticipate being 4.0% for electricity over the long term. Historically, electric escalation has been 6.7% in California for the 30 years from 1970-2001, even though the CPI has only been 3.1% since 1982.

Total Lifecycle Payback

Payback is often looked at as a measure of financial soundness of an investment. However, for long-term investments such as stocks, bonds, homes, and solar systems, payback isn't easily found or comparable to other investments to determine which investments form the best options for a diversified portfolio. 'Payback' has several other drawbacks as well, including the difficulty in accounting for escalation and inflation, time-value-of-money, one-time expenses such as inverter replacement cost, or the savings available after 'payback' has been achieved.

Other ways of looking at Payback include analysis of the Total Lifecycle Payback over the 25-year warranted life of the solar modules. In the graphic below, the steadily increasing steps reflect each year's savings from the solar system affected by 4.0% escalation. The red area in the graphic below shows the needed accumulation of savings before payback. The green area shows additional savings received after payback. As you can see, savings after payback are substantial.

The Total Lifecycle savings is $182,965, including bill savings, sRECs, maintenance, & inverter replacement (net after-tax values) over 25 years compared to a system cost of $33,829. This yields a Total Lifecycle Payback of 5.4x. Payback occurs at Year 6.3.



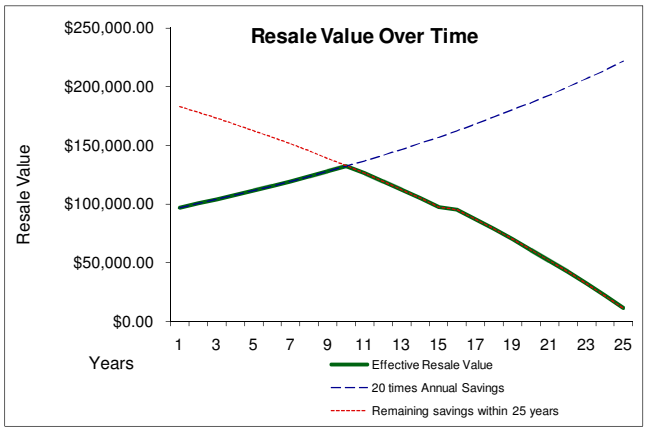
Home Resale/Appraisal Value Increase

Solar systems increase home values by reducing operating costs. The Appraisal Institute published a study in the Appraisal Journal in 1998 & again in 1999, that stated that if a home's operating costs can be reduced through an energy efficiency measure that reduces its operating costs, those savings have a tangible connection to increasing the home's value. The rationale is, that instead of paying the utility, a future buyer could take a larger mortgage, and instead pay the bank and their operating costs would remain unchanged.

The article established that a homes resale value increases $20 for every $1 saved in operating costs. This is based on a 5% after-tax long-term average for mortgage costs. For more information see www.ongrid.net/AppraisalJournalPVValue10.98.pdf which is from The Appraisal Journal, Oct '98. While this may sound dated, it is based on solid math that doesn't vary with time, only long term averages in mortgage interest rates.

This home's annual savings of $4,983 translate to an immediate theoretical increase in resale value of $97,001. This translates to 287% of the system's net cost.

Because savings increase over time due to electric rate escalation, the increase in resale value will increase as well. However, the limit to this increase will be the anticipated remaining savings left in the system before it's 'end of life', which has been conservatively estimated at 25 years (the module warranty life). The actually design life is much longer, but to be conservative, we'll use this shorter time horizon.



The maximum resale value of $132,203 based on estimated remaining savings to 25 years occurs at year 10.

Current and Future Cash Flows if Financed

If the system is financed, a cash flow analysis compares the cost of the loan (principal, interest and tax effects) to the savings on the electric bill (minus maintenance and other costs). For this analysis, we've assumed a financing interest rate of 7.25%, and a term of 20 years. Here we present 3 options for financing the system; what we'll call the 'Inefficient Loan', the 'Optimistic Loan', and 'Smart Financing' using a Line of Credit:

Option 1: Fully amortized 'Inefficient Loan' of the above interest rate and term; the initial principal is the net system cost after up-front incentives (such as rebates and grants) are received. This requires no out-of-pocket costs to the consumer to acquire the solar system, but as other incentives and benefits are received (such as tax credits, tax deductions, PBI's, and depreciation, each as applicable), the consumer ends up with cash on hand which they also are paying loan interest on, so this loan ends up costing unnecesary interest, making it inefficient and expensive.

The payment amount for this loan is $388/mo on $48,327 borrowed.

Option 2: Fully amortized 'Optimistic Loan' of the above interest rate and term; the initial principal is the net system cost after all near-term incentives (rebates, grants, tax credits, tax deductions, PBI's, and depreciation) except SRECs if any (SRECs are excluded because their value is usually uncertain) are received. This loan is optimistic (for the salesperson) because it has the lowest payments, but requires the customer to get a bridge loan or provide their own cash until some of the near-term incentives are received (tax credits, tax deductions, PBIs, depreciation).

The payment amount for this loan is $271/mo on $33,829 borrowed.

Option 3: Fully amortized 'Smart Financing' of the above interest rate and term, usually using a line of credit; the initial principal is the net system cost after up-front incentives (such as rebates and grants) are received. This financing method is both Efficient and Realistic in terms of true consumer cost because it borrows exactly the amount needed so that the consumer never needs a bridge loan, but also pays no unnecessary interest because it applies any near-term incentives received towards the principal owed.

The calculation is complex, but the Smart Financing with a Line Of Credit cost falls between the Optimistic and Inefficient loan costs. It requires the customer to be disciplined to apply any depreciation, tax credits, PBIs and other near-term incentives to pay down the principal owed as taxes are filed and benefits are received. Note: in the first year, the principal and therefore the interest is large, so the interest tax deduction is large; sometimes the interest exceeds the payment, allowing for a large tax benefit but also temporarily increasing the principal amount. This situation is temporary as long as any tax credits and depreciation are applied to reducing principal as they are received.

The monthly payment amount is $279/mo. The net cost of payments (after tax deduction of interest paid) in the 1st, 2nd, 5th, and 10th years is:

Monthly for Year 1: ($170) Year 2: ($202) Year 5: ($209) Year 10: ($223)

Net electric bill savings (electric bill savings minus maintenance costs):

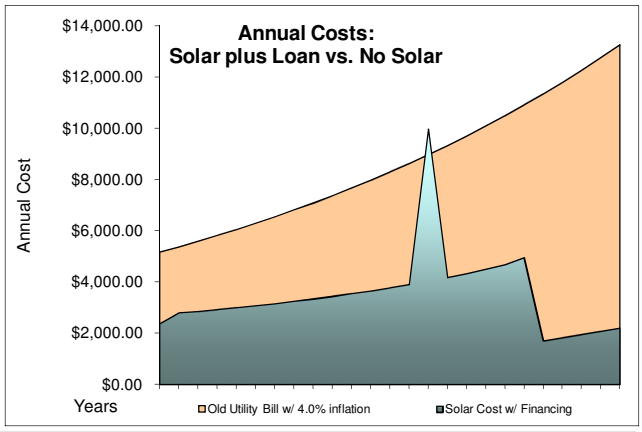
Monthly for Year 1: $404 Year 2: $418 Year 5: $464 Year 10: $551

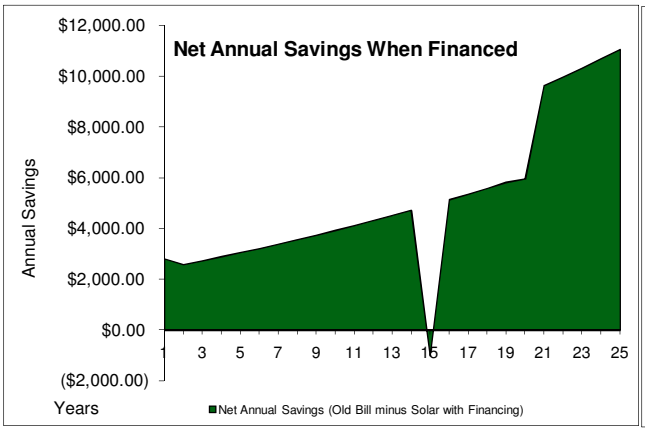
Cash Flow (Net electric bill savings minus net financing cost):

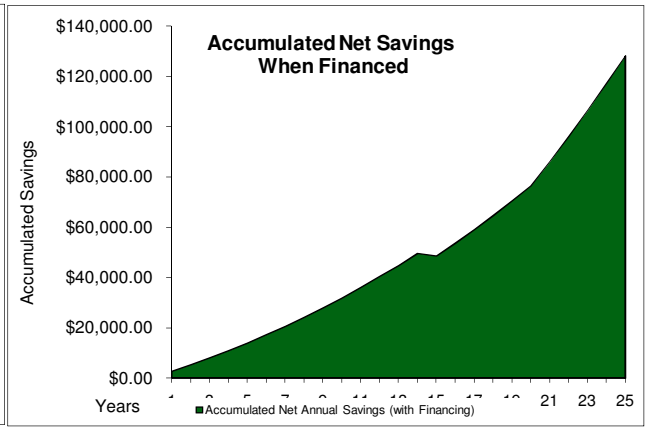
Monthly for Year 1: $234 Year 2: $216 Year 5: $255 Year 10: $328

Please see the 25 Year Financing Timeline table for details on the principal, interest, tax benefit, and payment amount, etc for each year in details.

As in the Appraisal/Resale calculation above, electric escalation will increase the electric bill savings over time. The Smart Loan's cost is affected by the factors previously mentioned. The top graphic below illustrate the loan cost vs. net bill savings over 25 years. The middle graphic represents their difference and hence the the net cash flow.







The bottom graphic shows the accumulated savings. Note that this is pure savings, with no out-of-pocket costs. All system costs came from financed sources. This is the accumulation of excess savings above what was needed to pay off the principal and interest for the loan.

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Compound Annual Rate of Return

The Compound Annual Rate of Return (CARR) is an analysis method that makes the solar investment comparable to other interest-rate-based investments, such as stocks, bonds, CDs, money markets, savings, etc. The goal is to include all the cost and benefit components in a multi-year timeline and look for the effective annual rate of return using Internal Rate of Return analysis (the IRR tool in most spreadsheets).

In residential solar analysis, it's important to treat and view the system properly with respect to taxes. A solar system saves the homeowner after-tax expense. However, most of the other investment opportunities provide pre-tax returns, and are usually thought of in a pre-tax context. Therefore, in order to make a good side-by-side comparison of the two, it is then appropriate to translate one to the other's realm.

Because most people think of their investments in pre-tax terms, the attached analysis translates the solar Compound Annual Rate of Return analysis to it's pre-tax equivalent (note, all other analyses in this pro forma are unaffected by this translation). This requires that most amounts be converted based on the purchasers tax bracket. The amounts that do not get converted are the system's net capital costs (top line, rebate values, etc) and any state tax credit amount.

All relevant cost components must be included to ensure completeness of the analysis. These include; system capital cost, rebate, tax credits, performance based incentives, REC sales, maintenance costs, tax consequences of any incentives and state credits, depreciation and the tax consequences of depreciation, electric bill savings, tax consequences for the loss of deductibility of such savings (commercial analyses only), and inverter replacement cost at an appropriate year in the future.

Annual savings:	**$**	**4,983**
Pre-Tax value of the annual savings:	**$**	**7,947**

Loan costs do not get included in this analysis as that muddies the waters and can create excessively optimistic looking results. The CARR analysis should be done in pure form as if the choice were between investing in this opportunity vs. another. It is irrelevant in comparing the two choices what the source of funds might be, and only creates confusion.

Looked at another way, if the system were substantially financed, such that there was no initial outlay, and only a cash positive result, what is the rate of return on that - infinite. While it may be true in this specially created case, it does not produce a useful result for purposes of comparison. Hence, this analysis assumes an all cash transaction.

When comparing analyses, it is also important to look at the compound annual rate of return (CARR), rather than an annual average, which can also appear misleadingly high. More information on financial analyses for solar systems is available at: http://www.ongrid.net/papers/PaybackOnSolarSERG.pdf

Pre-Tax Compound Annual Rate of Return (IRR) over 25 years: 28.8%

Please see the attached 25-year financial timeline analysis for details of the amounts and timing of items included in the CARR analysis.

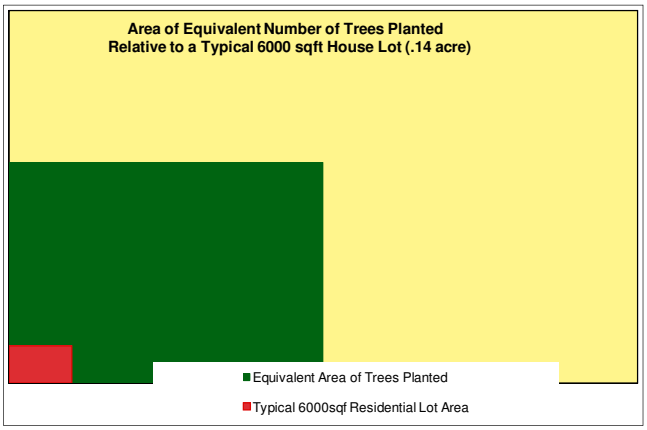
Environmental Analysis

Your solar system will generate substantial environmental benefits in the form of avoided emissions from power plants. Over 25 years, this solar system is estimated to offset:

562,184 lbs of CO2, the leading greenhouse gas
1,804 lbs of NOx, which creates smog
1,633 lbs of S02, which causes acid rain
111 lbs of particulates that cause asthma
914,729 miles driven in an average car, or 36,589 miles a year

These can also be thought of in other forms of avoided environmental impact:

It's like taking 3.0 cars off the road for 25 years.
Or planting 4.8 acres of trees.



Conclusion

Thank you again for the opportunity to present you with a proposal for a solar electric system. CMCO Electric & Solar is delighted to be working with you. Please let us know what we can do to win your business.