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1) Solar is best installed on a roof in good condition because the solar panels must be removed when you reroof. About 100 square feet (10ft x 10ft) is needed for a kilowatt of energy produced. Thin film PV needs more space.
2) The optimal order for selecting the best roof direction is South, South West, South East then West.
3) Interview three solar installers and get three bids for comparison. The installers should provide a detailed statement of the components of the system and where they will be installed as well as a schedule for payments.
4) Ask for the bids to include the estimated AC output used for the California Energy Commission rebate. This will provide close to real world peak AC output numbers for the completed system. (DC ratings will be 15% to 20% higher and it doesn't reflect the usable energy from the combined panels and inverter.)
5) The installer should do a shading analysis that tells you the percentage of annual solar energy blocked by shade.
6) $1, 000 is the maximum down payment by law. Don't pay more until you receive the panels and work begins.
7) Withhold a significant percentage of the payment until the job is done and signed off by PG&E.
8) The installer should manage state rebate, city permit, inspection process and working with PG&E for final signoff.
9) Installers should have state contractor's license & liability insurance. NABCEP solar certification is a plus.
10) Consider upgrading your utility meter to a Time-of Use (TOU) meter to increase the financial benefit by 15 to 20% unless you use extensive air conditioning or you choose a system that covers less than 30% of your annual usage
11) Check other customer experience from people you trust and from web sites including:

a. www.solar-estimate.org free – helps find installer in the area with detailed information provided by the installer
b. www.yelp.com free - some homeowner feedback on local installers
c. www.sanjose.bbb.org – Silicon Valley Better Business Bureau to check on business reliability rating & license
d. www.diamondcertified.com (free - but only highlights three vendors per area)
e. www.angieslist.com ($40-$50 membership required) they have more reviews than yelp, but it's not extensive

Other considerations:

- Even with solar installed, there is a monthly fee of about $6 to connect to your utility. However you get a monthly statement for electricity, but only pay at the end of a full year of operation. This is called a true-up bill.
- If you have a 100 Amp electrical service or less, you may need an upgrade at additional cost.
- Solar PV systems are virtually maintenance free although the inverter may need to replace after 10+ years. And hosing off solar panels, increases solar output about 5% after cleaning. (only put water on a panel that is not hot)
- Get warranties for panels, inverter & installation in writing & ask if it provides full replacement versus prorated.
- Leasing can be a good option if you plan to stay in your home. Typically if your average monthly electric bill is over $130, you can break even with a lease. But look at costs if you plan to sell your home before lease is over.
- The Federal tax credit is 30% of the net system cost with no maximum. You enter the credit on your tax return.
- State rebate managed by PG&E is $350 per Kilowatt AC as of February 2011.
- PG&E will write you a check/credit your account if you produced more energy than you used during the previous year. The proposed rate is 8.1 cents/kWh for the extra energy. Also consider changes in your future energy usage.

Other resources:

www.roofray.com for excellent solar calculator integrated with googlemaps that sizes a solar array for any home
www.norcalsolar.org/switch-to-solar.html for general information on solar energy
www.pge.com/solar for PG&E specific information relating to solar plus excellent free information and courses
www.csi-trigger.com for solar rebate info; www.californiasolarstatistics.ca.gov- searchable installs by location
www.gosolarcalifornia.ca.gov/tools/clean_power_estimator for clean power financial calculator
www.1bog.org for group rates;
www.sunwork.org low price option if energy bills are low; volunteers do installation

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Solar System Financial Examples

Ave. monthly electric bill	System size KW AC	Cost after rebate & tax credit	First year savings $ per year	% of Electricity generated by solar	Payback in years	Rate of Return over 30 yr life
$100	2	$9,660	$712	46%	14	12%
$100	3	$14,490	$925	69%	16	10%
$100	4	$19,460	$1132	92%	16	10%
$150	2	$9,660	$980	37%	10	16%
$150	3	$14,490	$1254	55%	12	14%
$150	4	$19,460	$1487	73%	13	13%
$200	2	$9,660	$1205	32%	8	20%
$200	3	$14,490	$1596	47%	9	18%
$200	4	$19,460	$1861	63%	10	15%
$200	5	$24,150	$2102	79%	11.5	14%
$250	2	$9,660	$1343	28%	7	22%
$250	3	$14,490	$1851	42%	8	20%
$250	4	$19,460	$2208	56%	9	18%
$250	5	$24,150	$2475	70%	10	15%
$250	6	$28,980	$2720	83%	11	15%

Assumptions

- $7.25 per AC watt system cost
- $350/AC KW state rebate and 30% unlimited Federal tax credit
- 5% annual increase in electricity prices; using PG&E E1 tiered rate schedule
- South facing, 30 degree slope, no shading issues, 5% reduction for soiling/dust on panels
- Time of Use benefit not included (typically increases savings by 10% each year)
- Does not include inverter replacement during 30 year life
- Based on Clean Power Estimator www.consumerenergycenter.org/renewables/estimator/index.html

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Slides at www.acterra.org/programs/greenathome