

Empowerment Through Information

Presented at California PV Utility Manager's Meeting

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Clean Power Research
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Company Overview

- Clean Power Research provides objective economic analysis (consulting and software) about investments in clean energy technologies to consumers, companies, utilities, organizations, and governments
- Investigated the economic feasibility of photovoltaics and other clean energy investments for a wide range of applications and a variety of ownership perspectives

Consumer Purchase Decision

- Two questions consumers ask when making a purchase:
 - Does the item satisfy my performance requirements?
 - Am I getting a good price?

How could consumers evaluate cars if dealers choose the ratings?

| | |
|--------------------------------|---------|
| Engine w/o car: | 120 mpg |
| - add transmission | 100 mpg |
| - add remaining car parts | 60 mpg |
| - add driver and passenger | 40 mpg |
| - test car on highway, not lab | 30 mpg |
| - test car in city | 20 mpg |

PV Ratings Methods

| | Power | Annual Energy Production |
|---|------------|--------------------------|
| PV Modules (STC) | 1000 Watts | 2,100 kWh |
| - test modules in real world conditions | 900 Watts | 1,900 kWh |
| - add inverter (CEC) | 850 Watts | 1,800 kWh |
| - add other losses | 750 Watts | 1,600 kWh |
| - add shading (e.g., 20%) | | 1,300 kWh |

Two Issues Facing PV

- What is the correct basis for providing rebates?
- What information do consumers need to make a purchase decision?

SolarGuide Label?

- Appliances have the yellow EnergyGuide label
 - Annual energy usage
 - Estimated cost savings
- PV could have a green SolarGuide label
 - Annual energy production (kWh for this module in a typical system)
 - Location-specific utility bill savings (range)

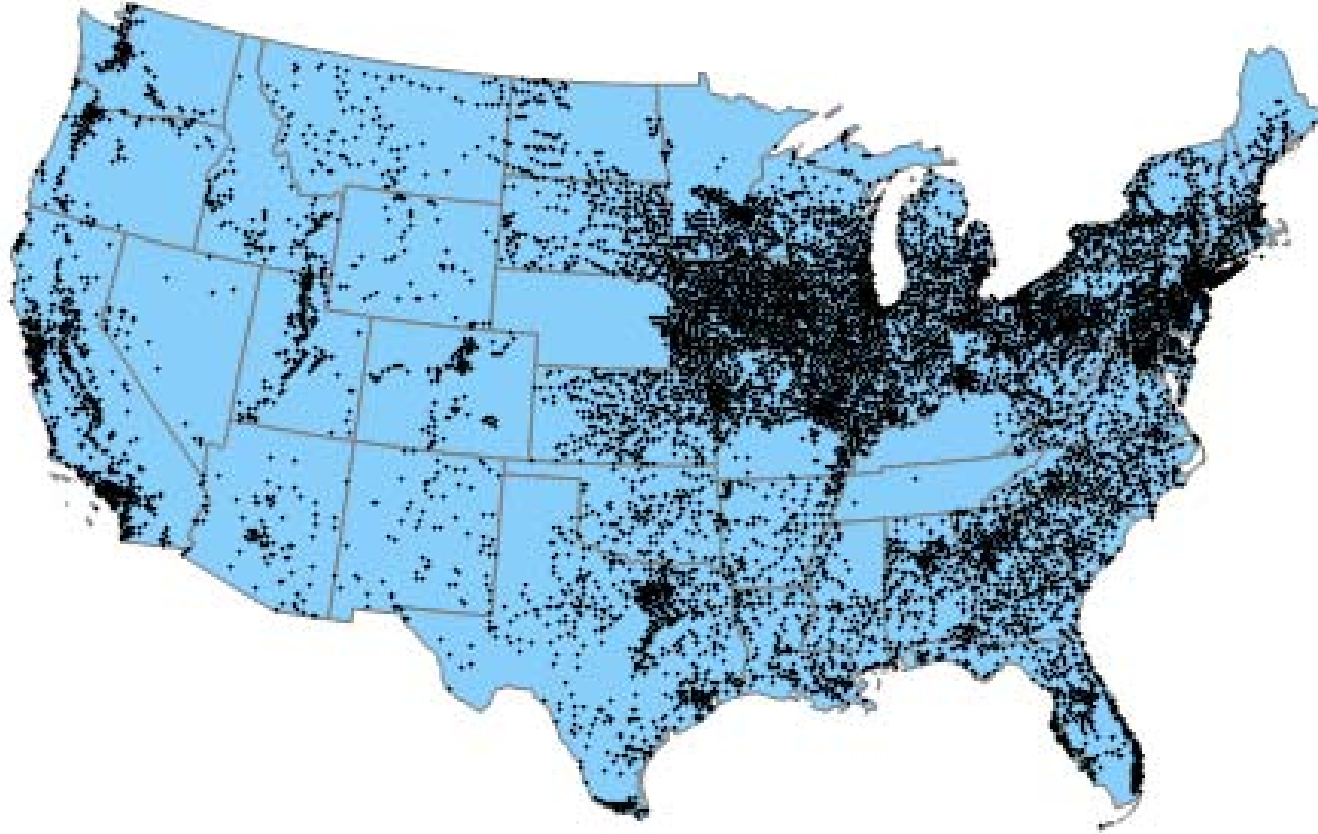
Information Gives Car Purchasers Power: Prices Vary by 10%

Honda Odyssey

| | Price | Dealer Profit | Source |
|-------------------------------|--------------|----------------------|---------------------------------|
| Retail | \$27,480 | 15% | www.kbb.com |
| Invoice | \$24,744 | 3% | www.kbb.com |
| Kelly Blue Book (Avg.) | \$26,632 | 11% | www.kbb.com |
| CarsDirect Price | \$25,274 | 5% | www.carsdirect.com |
| Dealer Wholesale Price | \$23,964 | 0% | Consumer Reports Car Buying Kit |
| | | | |
| Actual Price Paid | \$25,324 | 6% | |

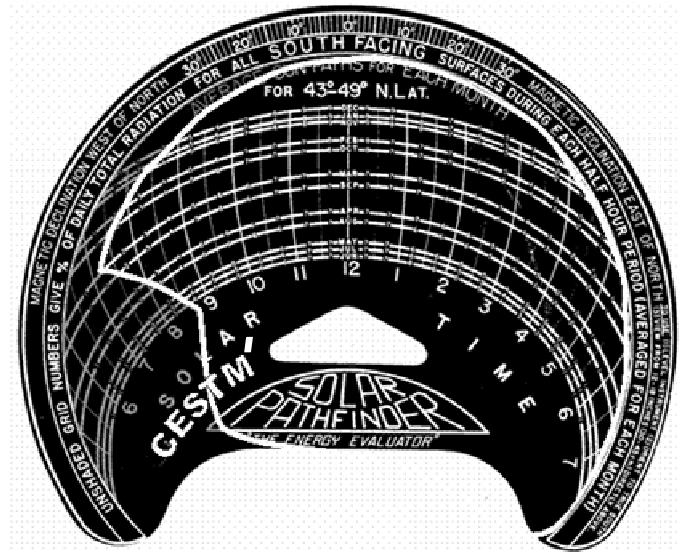
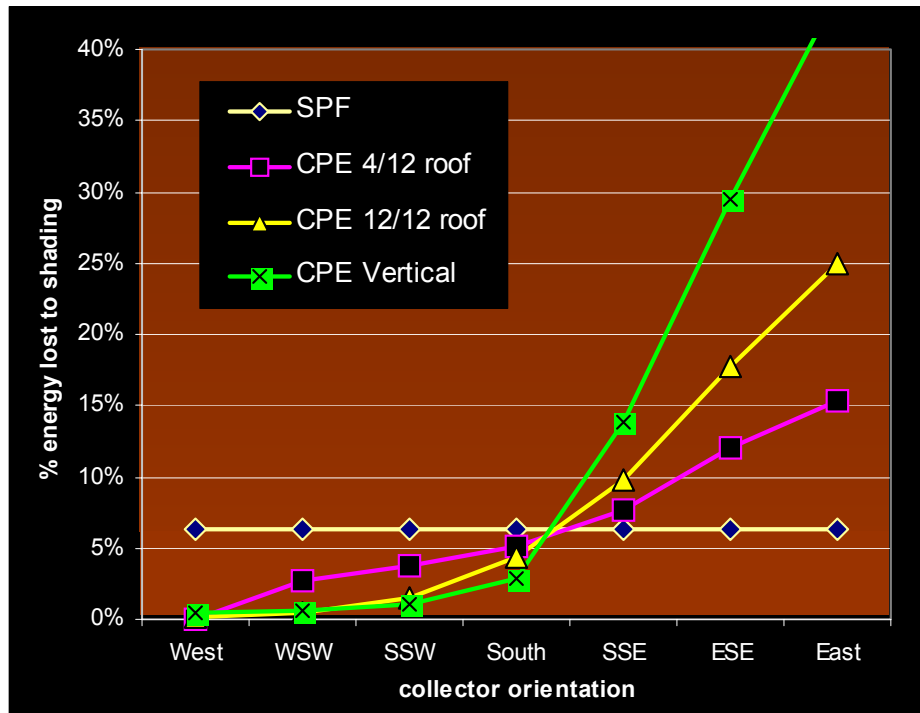
Lack of Information Leaves PV Purchasers
Powerless: Prices Vary by 100%+

Clean Power Estimator Database



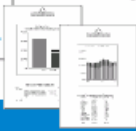
Estimator Can Estimate Performance, Including Shading

Estimator Compared to Solar Pathfinder Analysis





Quick Quotes for Clean Energy Systems



Registered Users

Company Login ID

Salesperson ID

[Login](#)

Overview

QuickQuotes enables dealers and resellers to quickly generate high-quality customer sales quotes for clean energy systems.

Efficient

Reduces the time and effort required to generate a personalized quote

Effective

Clearly presents a customized economic evaluation of the cost-effectiveness of a clean energy system for a specific customer

Credible

Produces relevant economic analyses based on Clean Power Research's industry-leading Estimator software engine

Benefits

✓ High-quality Personalized Sales Quotes

- Relevant economic evaluations
- Adobe Acrobat PDF format
- Print or save electronically
- Display your company logo
- Tailored to fit your sales approach

✓ Location-specific Calculations

- Residential or commercial customers
- Utilize customer-specific data
- Can include shading analysis
- Can be updated at customer's site

✓ No Software Maintenance

- Internet-based
- No specialized software to install
- Maintained by Clean Power Research

Features

Large Selection of Information

QuickQuotes can provide a variety of useful information in both graphical and tabular formats.

- Net System Cost After Incentives
- Savings and Costs With Tax Effects
- Net, Discounted, and Cumulative Cash Flows
- Daily, Monthly, and Annual Consumption and Production
- Detailed Electric Bill Savings
- Many other results

State of the Art Analysis + Robust Data

QuickQuotes uses the Clean Power Estimator analysis engine which uses proven algorithms based on many years of research. Estimator databases provide current information about electric rate tariffs, incentive programs, solar resources, load profiles, emission factors, and tax data.





QuickQuotes™ Quote Manager

New Customer

Prepare Quote

Customer
Napa Valley Plastics ▼



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QuickQuotes™ Quote Manager

New Customer

Prepare Quote

Customer

| | |
|----------------------|---|
| Andrew Grant | ▼ |
| Napa Valley Plastics | |
| Andrew Grant | |
| James Wellhauser | |



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Create Quote

SELECTIONS
(Napa, CA)

Economic Test Summary

PV System

Manufacturer

BP Solar

Model

150 Watt (Model BP2150S)

Number of Modules ?

20

Tilt ?

20°

Direction ?

South

Cost Per kW (dc) ?

\$8,000 per kW

[Click for Obstruction Analysis](#)

[Done](#)

Inverters

Manufacturer

SMA America

Model

2.5 kW (Model SWR2500U)

ASSUMPTIONS

Electric Bill ?

\$3,000 per year

Annual escalation ?

1.0% per year

Payment Method ?

Home Equity Loan

Loan Life ?

30 years

Loan Rate ?

7.00%

Loan Points ?

Summary

- Net Present Value: \$8,803
- Internal Rate of Return: 14.8%
- Simple Payback: 10 years
- Simple Payback (w/ loan tax savings): 8 years

Create Quote

SELECTIONS
(Napa, CA)

Economic Test Summary

PV System

Manufacturer

- BP Solar
- BP Solar**
- Dunasolar
- Energy Photovoltaics, Inc.
- Evergreen Solar
- First Solar
- Isototon
- Solar Integrated Technologies
- Kyocera America
- Mitsubishi Electric Corporation
- Midway Labs, Inc.
- Matrix Solar/Photowatt

[Click for Obstruction Analysis](#)

[Done](#)

Inverters

Manufacturer

SMA America

Model

2.5 kW (Model SWR2500U)

ASSUMPTIONS

Electric Bill ?

Annual escalation ?

\$3,000 per year

1.0% per year

Payment Method ?

Home Equity Loan

Loan Life ?

Loan Rate ?

30 years

7.00%

Loan Points ?

Summary

- Net Present Value: \$8,803
- Internal Rate of Return: 14.8%
- Simple Payback: 10 years
- Simple Payback (w/ loan tax savings): 8 years

Create Quote

**SELECTIONS
(Napa, CA)**

- Monthly Output
- Economic Test Summary
- Net Cost
- Daily Output
- Monthly Output**
- PV Production
- Annual Savings And Costs
- Monthly Savings And Costs
- Cash Flow
- Cumulative Cash Flow
- Discounted Cash Flow
- Cumulative Discounted Cash Flow

Tilt Direction
 20° South

Cost Per kW (dc)
 \$8,000 per kW

[Click for Obstruction Analysis](#) [Done](#)

Inverters

Manufacturer
 SMA America

Model
 2.5 kW (Model SWR2500U)

ASSUMPTIONS

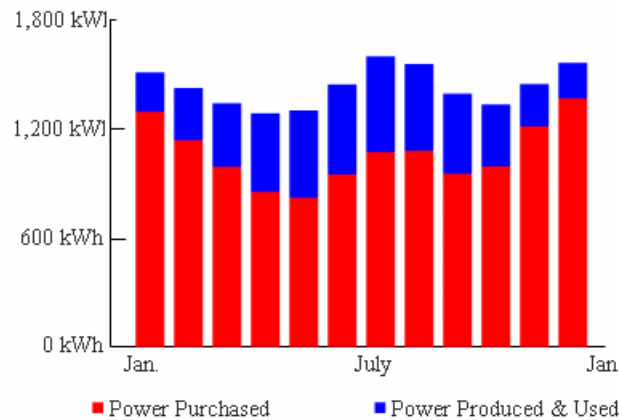
Electric Bill Annual escalation
 \$3,000 per year 1.0% per year

Payment Method
 Home Equity Loan

Loan Life Loan Rate
 30 years 7.00%

Loan Points

Monthly Consumption and Production



Monthly Consumption and Production (kWh)

| Month | Purchased | Produced and Used |
|-----------|-----------|-------------------|
| January | 1,283 | 213 |
| February | 1,128 | 285 |
| March | 981 | 346 |
| April | 846 | 429 |
| May | 815 | 475 |
| June | 941 | 492 |
| July | 1,063 | 522 |
| August | 1,069 | 474 |
| September | 944 | 437 |
| October | 983 | 338 |
| November | 1,202 | 231 |
| December | 1,355 | 195 |
| Total | 12,608 | 4,436 |

Create Quote

SELECTIONS (Napa, CA)

PV Production: [dropdown]
 April [dropdown]

PV System

Manufacturer: [BP Solar dropdown]
 Model: [150 Watt (Model BP2150S) dropdown]
 Number of Modules: [20 dropdown]
 Tilt: [20° dropdown] Direction: [South dropdown]
 Cost Per kW (dc): [\$8,000 per kW dropdown]

[Click for Obstruction Analysis](#) [Done](#)

Inverters

Manufacturer: [SMA America dropdown]
 Model: [2.5 kW (Model SWR2500U) dropdown]

ASSUMPTIONS

Electric Bill: [\$3,000 per year dropdown] Annual escalation: [1.0% per year dropdown]
 Payment Method: [Home Equity Loan dropdown]
 Loan Life: [30 years dropdown] Loan Rate: [7.00% dropdown]
 Loan Points: [dropdown]

Simple Input
 Detailed Input
 Angle Input
 View Profile

HELP
 Ruler Distance: 0
 Ruler Height

Credits

Set compass as shown

| | | | | | | | | | | | | |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Results: Elevation | N | NNW | WNW | W | WSW | SSW | S | SSE | ESE | E | ENE | NNE |
| Angle (deg) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

Obstruction Angle Input Options

- Select Simple Input if you are next to where the collector will be located
- Select Detailed Input if you are NOT next to where the collector will be located
- Select Angle Input if you know the angles or have a tool to measure the angles

Create Quote

**SELECTIONS
(Napa, CA)**

PV Production

April

PV System

Manufacturer
BP Solar

Model
150 Watt (Model BP2150S)

Number of Modules ?
20

Tilt ? Direction ?
20° South

Cost Per kW (dc) ?
\$8,000 per kW

[Click for Obstruction Analysis](#) [Done](#)

Inverters

Manufacturer
SMA America

Model
2.5 kW (Model SWR2500U)

ASSUMPTIONS

Electric Bill ? Annual escalation ?
\$3,000 per year 1.0% per year

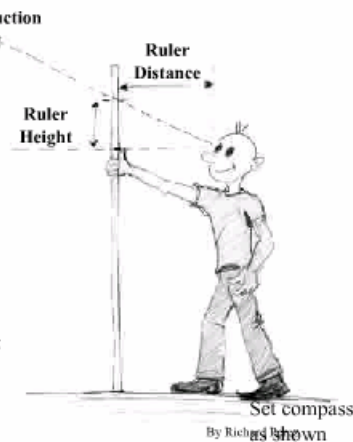
Payment Method ?
Home Equity Loan

Loan Life ? Loan Rate ?
30 years 7.00%

Loan Points ?

DONE

- 1) Obtain stick, measuring tape, & level
- 2) Stand by stick & draw a mark at eye level (make sure everything is level)
- 3) Place thumb below mark
- 4) Measure distance between eyes and stick when arm is extended
- 5) Enter result in **Ruler Distance** box
- 6) Adjust compass as shown to account for magnetic declination in your location
- 7) For each point on compass rose, find location on stick corresponding to top of obstruction
- 8) Enter results in **Ruler Height** boxes next to compass rose
- 9) Note: obtain most conservative estimate by measuring ruler height at both bottom corners of collector and selecting the largest number for each direction



Obstruction Angle Input Options

- Select Simple Input if you are next to where the collector will be located
- Select Detailed Input if you are NOT next to where the collector will be located
- Select Angle Input if you know the angles or have a tool to measure the angles

Create Quote

**SELECTIONS
(Napa, CA)**

Economic Test Summary

PV System

Manufacturer
BP Solar

Model
150 Watt (Model BP2150S)

Number of Modules ?
20

Tilt ? Direction ?
20° South

Cost Per kW (dc) ?
\$8,000 per kW

[Click for Obstruction Analysis](#) [Done](#)

Inverters

Manufacturer
SMA America

Model
2.5 kW (Model SWR2500U)

ASSUMPTIONS

Electric Bill ? Annual escalation ?
\$3,000 per year 1.0% per year

Payment Method ?
Home Equity Loan

Loan Life ? Loan Rate ?
30 years 7.00%

Loan Points ?

Simple Input

Detailed Input

Angle Input

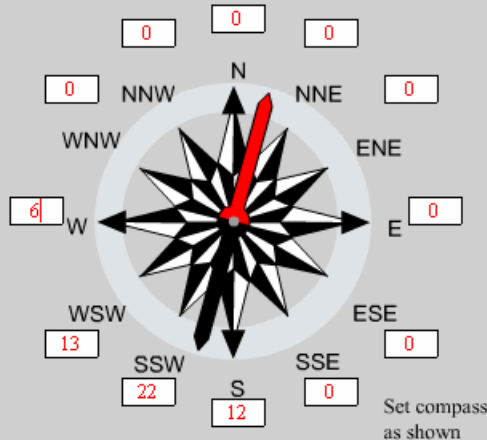
View Profile

HELP

Ruler Distance 24

Ruler Height

Credits



| Results: Elevation | N | NNW | WNW | W | WSW | SSW | S | SSE | ESE | E | ENE | NNE |
|--------------------|---|-----|-----|----|-----|-----|----|-----|-----|---|-----|-----|
| Angle (deg) | 0 | 0 | 0 | 14 | 28 | 42 | 26 | 0 | 0 | 0 | 0 | 0 |

Obstruction Angle Input Options

- Select Simple Input if you are next to where the collector will be located
- Select Detailed Input if you are NOT next to where the collector will be located
- Select Angle Input if you know the angles or have a tool to measure the angles

Create Quote

SELECTIONS
(Napa, CA)

PV Production

March

PV System

Manufacturer
BP Solar

Model
150 Watt (Model BP2150S)

Number of Modules ?
20

Tilt ? Direction ?
20° South

Cost Per kW (dc) ?
\$8,000 per kW

[Click for Obstruction Analysis](#) [Done](#)

Inverters

Manufacturer
SMA America

Model
2.5 kW (Model SWR2500U)

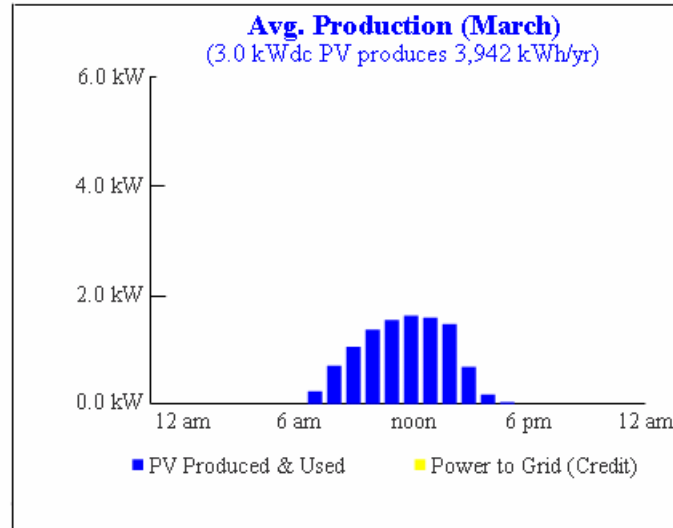
ASSUMPTIONS

Electric Bill ? Annual escalation ?
\$3,000 per year 1.0% per year

Payment Method ?
Home Equity Loan

Loan Life ? Loan Rate ?
30 years 7.00%

Loan Points ?



Average PV Output (kWh)

| Hour >> | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Daily Avg. | Month Total | |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|-------------|-----|
| January | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.30 | 0.60 | 0.90 | 1.20 | 2.00 | 2.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.43 | 131 |
| February | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.40 | 0.81 | 1.21 | 1.41 | 1.40 | 1.30 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.64 | 196 |
| March | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.71 | 1.01 | 1.31 | 1.51 | 1.61 | 1.40 | 1.00 | 0.70 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.02 | 311 |
| April | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 1.01 | 1.41 | 1.71 | 1.91 | 1.81 | 1.51 | 1.20 | 0.70 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.38 | 418 |
| May | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.71 | 1.11 | 1.51 | 1.81 | 1.91 | 1.71 | 1.30 | 0.90 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.52 | 463 |
| June | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.61 | 1.11 | 1.41 | 1.82 | 2.02 | 1.20 | 1.81 | 1.41 | 1.00 | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.59 | 483 |
| July | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.61 | 1.21 | 1.61 | 1.92 | 1.22 | 2.11 | 1.91 | 1.51 | 1.10 | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.69 | 514 |
| August | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.91 | 1.41 | 1.82 | 2.02 | 1.21 | 1.81 | 1.40 | 0.90 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.52 | 462 |
| September | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.40 | 0.91 | 1.41 | 1.82 | 2.02 | 1.19 | 1.70 | 1.70 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.36 | 413 |
| October | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.30 | 0.81 | 1.11 | 1.51 | 1.61 | 1.70 | 0.90 | 0.70 | 0.20 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.89 | 271 |
| November | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.50 | 0.81 | 1.12 | 1.20 | 2.02 | 2.02 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.56 | 169 |
| December | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.30 | 0.60 | 0.80 | 0.70 | 0.60 | 2.02 | 2.02 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.36 | 109 |
| Total | | | | | | | | | | | | | | | | | | | | | | | | | | 3,942 | |

Create Quote

SELECTIONS
(Napa, CA)

PV Production

April

PV System

Manufacturer

BP Solar

Model

150 Watt (Model BP2150S)

Number of Modules ?

20

Tilt ?

20°

Direction ?

South

Cost Per kW (dc) ?

\$8,000 per kW

[Click for Obstruction Analysis](#)

[Done](#)

Inverters

Manufacturer

SMA America

Model

2.5 kW (Model SWR2500U)

ASSUMPTIONS

Electric Bill ?

\$3,000 per year

Annual escalation ?

1.0% per year

Payment Method ?

Home Equity Loan

Loan Life ?

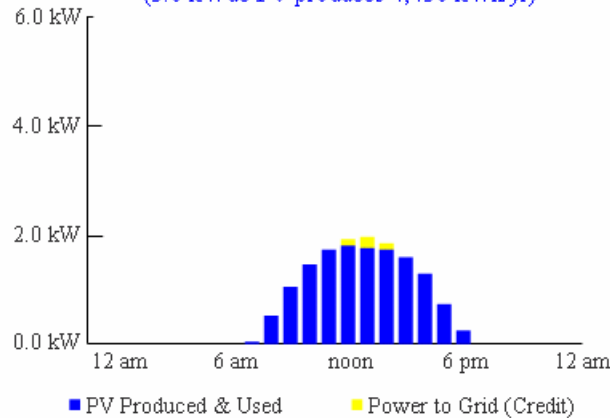
30 years

Loan Rate ?

7.00%

Loan Points ?

Avg. Production (April)
(3.0 kWdc PV produces 4,436 kWh/yr)



Average PV Output (kWh)

| Hour >> | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Daily Avg. | Month Total | |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|-------------|-----|
| January | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.30 | 0.61 | 1.01 | 1.21 | 1.21 | 1.09 | 0.60 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.70 | 213 |
| February | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.40 | 0.81 | 1.21 | 1.41 | 1.41 | 1.30 | 0.90 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.94 | 285 |
| March | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.71 | 1.11 | 1.41 | 1.51 | 1.61 | 1.51 | 1.10 | 0.60 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.14 | 346 |
| April | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 1.01 | 1.41 | 1.71 | 1.91 | 1.91 | 1.81 | 1.61 | 1.30 | 0.70 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.41 | 429 |
| May | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.71 | 1.21 | 1.51 | 1.82 | 2.02 | 1.91 | 1.81 | 1.30 | 0.90 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.56 | 475 |
| June | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.61 | 1.11 | 1.51 | 1.82 | 2.02 | 2.12 | 2.01 | 1.81 | 1.51 | 1.00 | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.62 | 492 |
| July | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.61 | 1.21 | 1.61 | 1.92 | 2.22 | 2.22 | 2.19 | 1.61 | 1.10 | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.72 | 522 |
| August | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 1.01 | 1.41 | 1.82 | 2.02 | 2.21 | 2.11 | 1.81 | 1.40 | 0.90 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.56 | 474 |
| September | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.41 | 0.91 | 1.41 | 1.82 | 2.02 | 2.12 | 2.01 | 1.71 | 1.20 | 0.60 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.44 | 437 |
| October | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.30 | 0.81 | 1.11 | 1.51 | 1.61 | 1.71 | 1.51 | 1.30 | 0.90 | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.11 | 338 |
| November | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.50 | 0.91 | 1.11 | 1.21 | 1.31 | 2.08 | 0.40 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.76 | 231 |
| December | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.30 | 0.60 | 0.91 | 1.11 | 1.10 | 1.00 | 0.80 | 0.50 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.64 | 195 |
| Total | | | | | | | | | | | | | | | | | | | | | | | | | | 4,436 | |



Bookmarks

Thumbnails

Comments

Signatures



Customer
 Andrew Grant
 10 Donna Dr.
 Napa, CA 94558
 Phone: 707 256-1634
 Email: andrewGrant@aol.com

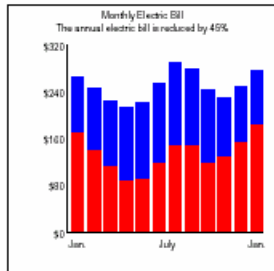
Company Contact
 Clean Power Research
 Company Contact: Tom Hoff
 10 Glen Ct.
 Napa, CA 94558
 Phone: 707 224-9992
 Fax: 707 224-9993
 Email: sales@clean-power.com

Summary

- It is estimated that a PV system for your home will:
- Save \$1,365 off your \$3,001 annual electric bill (45% reduction)
 - Yield 14.8 % rate of return
 - Have 8 year payback
 - Help the environment by reducing 165,025 lbs of CO2 emissions

Sales Price Breakdown

| | |
|------------------------------------|-----------|
| Bill Price | \$24,000 |
| Incentives Applied to Purchase | \$(9,359) |
| Initial Out-of-Pocket Cost | \$14,641 |
| Incentives Received After Purchase | \$(2,196) |
| Tax Effects | \$615 |
| Meter Change | \$277 |
| Final Cost After Incentives | \$13,337 |



Equipment

PV system size 3.0 kW-DC
 Orientation South at 20 degree tilt
 PV modules 20 x BP Solar 150 Watt (Model BP2150S)
 Inverter 1 x SMA America 2.5 kW (Model SWR2500U)

Disclaimer

The program includes potential economic incentives and tax benefits of purchasing a renewable energy system. You should confirm the availability of the economic incentives and you should consult your tax adviser about the tax deductibility of any interest payments before you purchase a system. Please read the full limitation of liability statement.



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Electric Bill Details Current

| | Energy Bill | Discount | Minimum Bill | Total |
|--------------|----------------|------------|--------------|----------------|
| January | \$295 | 10% | \$5 | \$285 |
| February | \$273 | 10% | \$5 | \$246 |
| March | \$251 | 10% | \$5 | \$226 |
| April | \$238 | 10% | \$5 | \$214 |
| May | \$247 | 10% | \$5 | \$222 |
| June | \$284 | 10% | \$5 | \$255 |
| July | \$323 | 10% | \$5 | \$291 |
| August | \$312 | 10% | \$5 | \$281 |
| September | \$270 | 10% | \$5 | \$243 |
| October | \$255 | 10% | \$5 | \$229 |
| November | \$279 | 10% | \$5 | \$251 |
| December | \$309 | 10% | \$5 | \$278 |
| Total | \$3,335 | 10% | \$60 | \$3,001 |

Electric Bill Details Proposed

| | Energy | Fixed Cost | Bill | Discount | Minimum Bill | Total |
|--------------|----------------|-------------|------|------------|--------------|----------------|
| January | \$188 | \$4 | | 10% | | \$173 |
| February | \$154 | \$4 | | 10% | | \$142 |
| March | \$125 | \$4 | | 10% | | \$116 |
| April | \$97 | \$4 | | 10% | | \$91 |
| May | \$99 | \$4 | | 10% | | \$93 |
| June | \$132 | \$4 | | 10% | | \$122 |
| July | \$163 | \$4 | | 10% | | \$150 |
| August | \$165 | \$4 | | 10% | | \$152 |
| September | \$131 | \$4 | | 10% | | \$121 |
| October | \$143 | \$4 | | 10% | | \$133 |
| November | \$171 | \$4 | | 10% | | \$157 |
| December | \$204 | \$4 | | 10% | | \$187 |
| Total | \$1,771 | \$47 | | 10% | \$107 | \$1,636 |

Summary

It is estimated that a PV system for your home will:

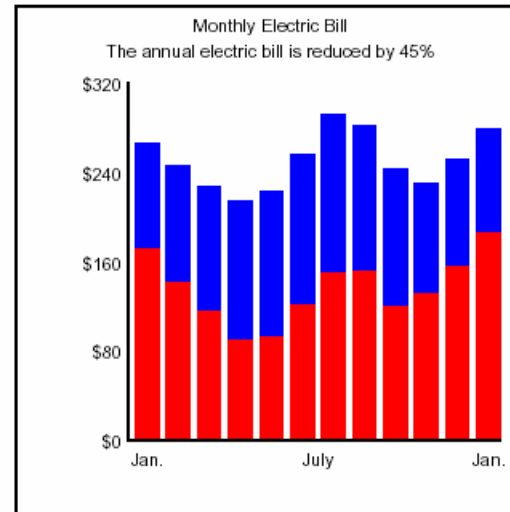
- Save \$1,365 off your \$3,001 annual electric bill (45% reduction)
- Yield 14.8 % rate of return
- Have 8 year payback
- Help the environment by reducing 165,025 lbs of CO2 emissions

Sales Price Breakdown

| | |
|------------------------------------|-------------------|
| Bid Price | \$24,000 |
| Incentives Applied to Purchase | \$ (9,359) |
| Initial Out-of-Pocket Cost | \$14,641 |
| | |
| Incentives Received After Purchase | \$ (2,196) |
| Tax Effects | \$615 |
| Meter Charge | \$277 |
| Final Cost After Incentives | \$13,337 |

Equipment

| | |
|----------------|---|
| PV system size | 3.0 kW-DC |
| Orientation | South at 20 degree tilt |
| PV modules | 20 x BP Solar 150 Watt (Model BP2150S) |
| Inverter | 1 x SMA America 2.5 kW (Model SWR2500U) |



Bookmarks

Thumbnails

Comments

Signatures



Customer
Joanie Reuben
4650 Adohr Lane
Camarillo, CA 93012

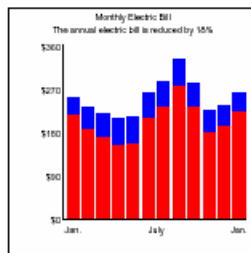
Company Contact
Clean Power Research
Company Contact: Daniel Clarke
10 Glen Ct.
Napa, CA 94558
Phone: 707 224-9992
Fax: 707 224-9993
Email: sales@clean-power.com

Summary

- It is estimated that a PV system for your home will:
- Save \$540 off your \$2,999 annual electric bill (18% reduction)
 - Yield 7.6 % rate of return
 - Have 13 year payback
 - Help the environment by reducing 117,227 lbs of CO2 emissions

Sales Price Breakdown

| | |
|------------------------------------|------------|
| Bid Price | \$16,000 |
| Incentives Applied to Purchase | \$ (5,406) |
| Initial Out-of-Pocket Cost | \$10,592 |
| Incentives Received After Purchase | \$ (794) |
| Tax Effects | \$222 |
| Final Cost After Incentives | \$10,020 |



Equipment

PV system size: 2.0 kW DC
 Orientation: South at 30 degree tilt
 PV modules: 20 x Shell Solar 100 Watt (Model SR100)
 Inverter: 1x SMA America 2.5 kW (Model SMT250U)

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Market Analysis Tool: Description

- Specifically designed to evaluate data from renewable energy buydown programs:
 - PV
 - Wind
 - Other renewable energy technologies

Market Analysis Tool: Results

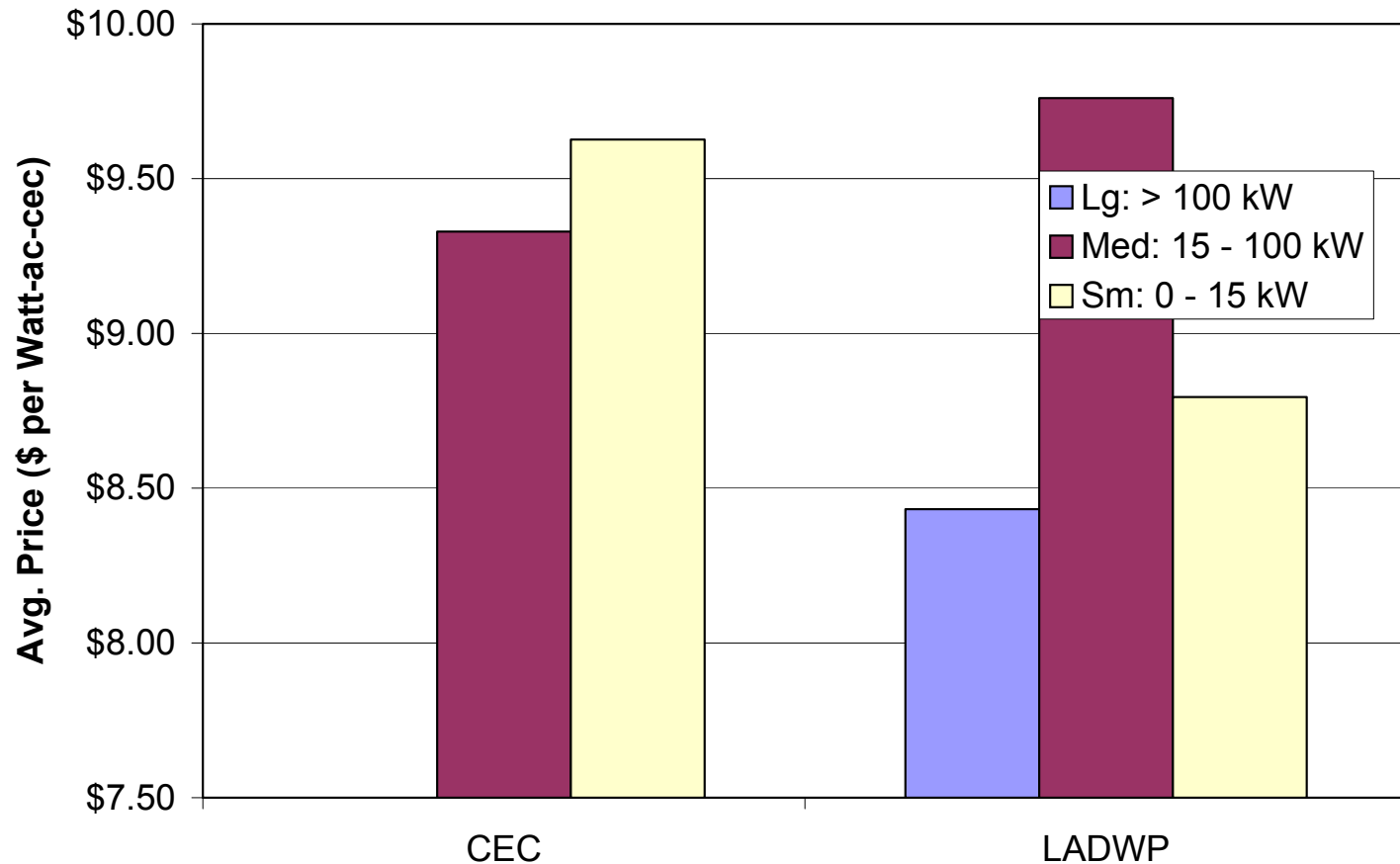
- Results include:
 - Volume (MW/year)
 - Sales (\$/yr)
 - Price (\$/kW)
 - Number of systems installed
 - Installation rate
 - Other results

Market Analysis Tool: Perspectives

- Perspectives include the combination of any two of the following:
 - Buydown program
 - Utility territory
 - PV manufacturer
 - Inverter manufacturer
 - Dealer
 - Dealer size
 - System size
 - Price distribution
 - Size distribution

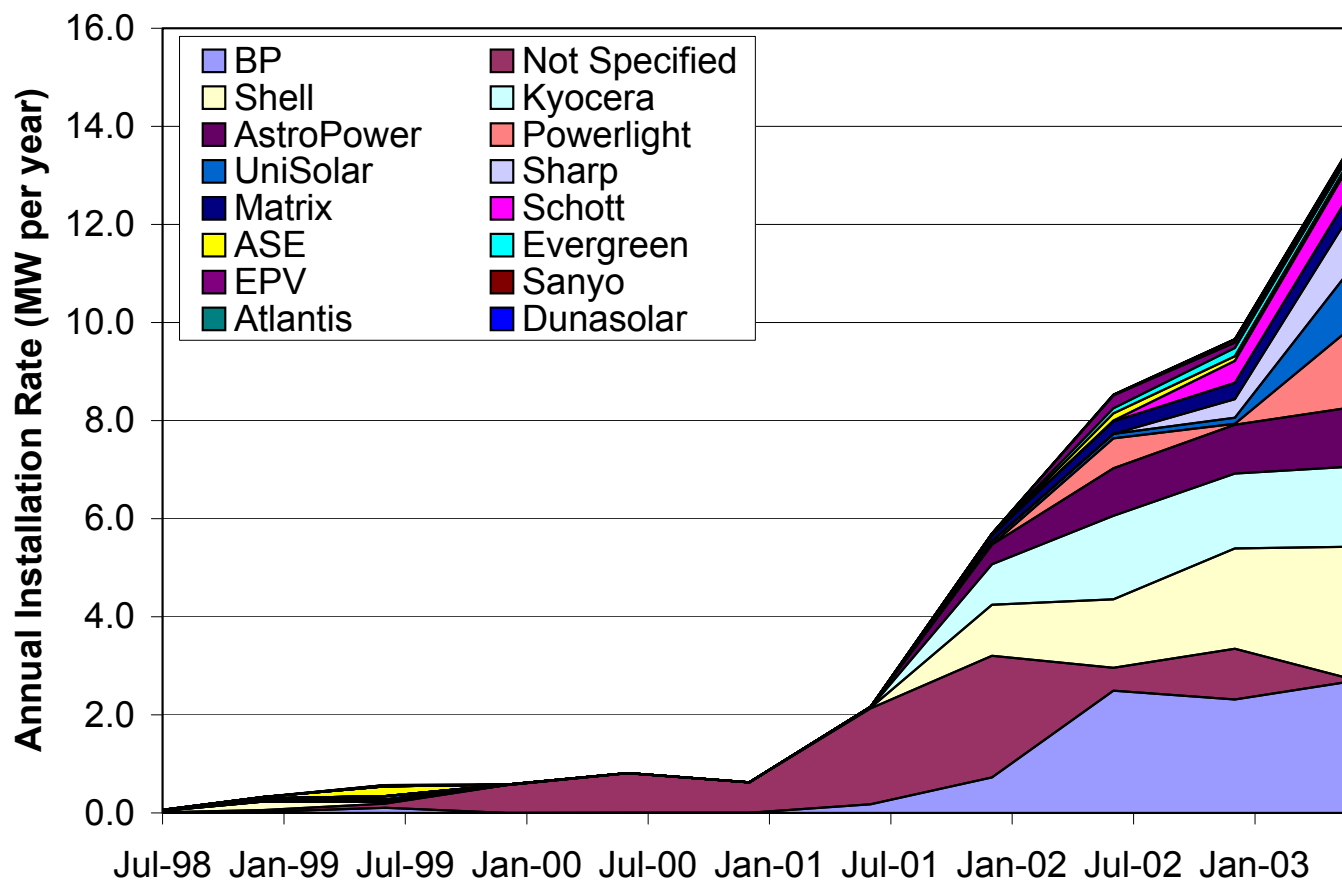
Program Managers Can Perform Cross Program Comparisons

Price by Program and System Size
Analysis Period: 3/1/2003 to 5/31/2003

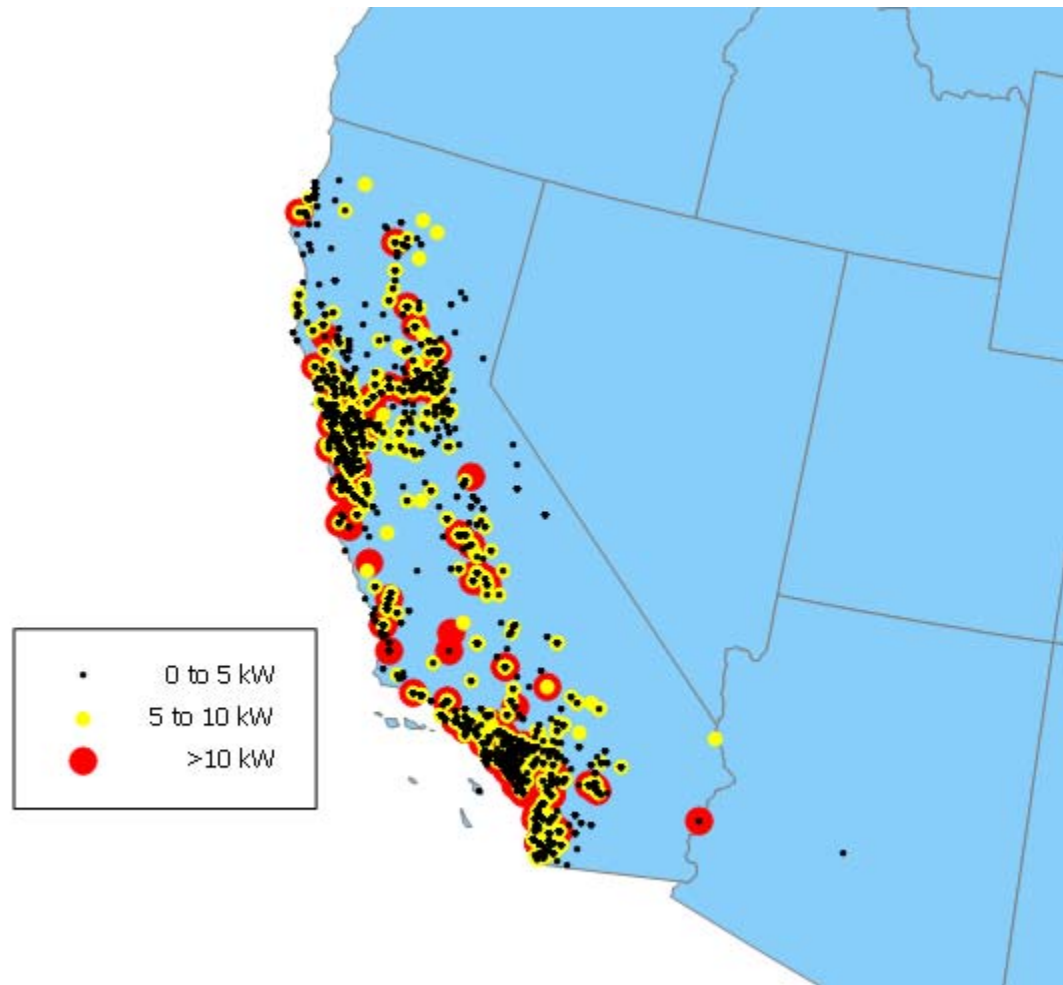


Market Share Can Be Made Public (e.g., CEC & LADWP Data)

Volume by PV Manufacturer



Hot Spots Can Be Analyzed (CEC Jan. 2000 to Sept. 2003)



Conclusion

- Information empowers consumers to make better purchase decisions
- Information empowers program managers to set more effective rebates
- Two useful tools are
 - QuickQuotes: available at www.clean-power.com
 - Market Analysis Tool