

11.04.09

Your Path to Energy Savings

Large Commercial





Goals of this Webinar

Provide the resources and inform you of the steps you should take before and after installing solar to maximize your investment and reduce your carbon footprint.

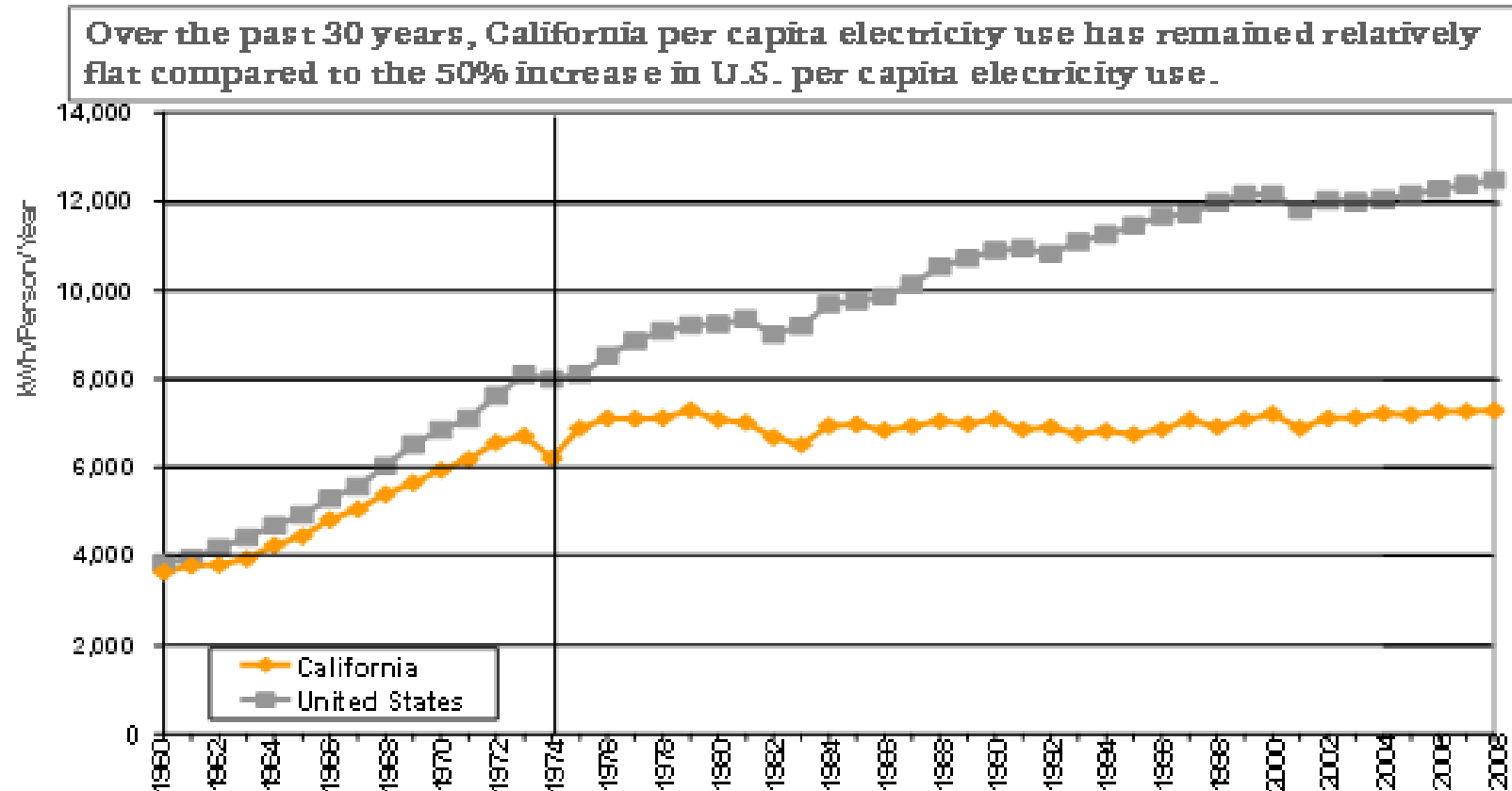


Agenda

- PG&E
 - Our Commitment to Energy Efficiency
 - Integrated Approach
- The Full Energy Picture
- Before Going Solar
 - Energy Conservation
 - Energy Efficiency
 - Overview of PG&E's Program Offerings
- Going Solar
- After Solar
- Resources



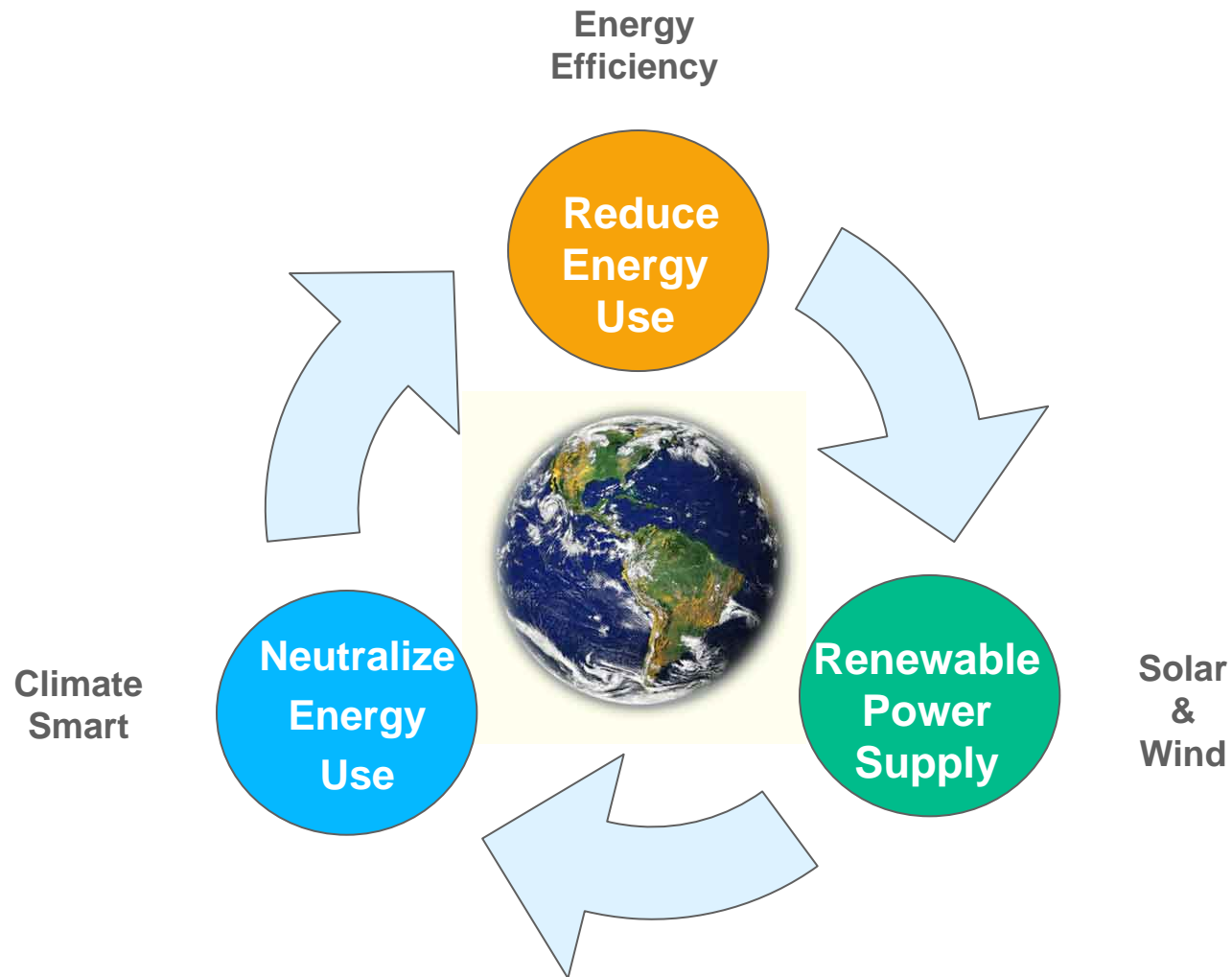
We're committed to Energy Efficiency



PG&E has saved more than 155 million MWh and 12.5 billion therms from installed energy efficiency measures, which is the equivalent of powering over 23.5 million homes with electricity and heating 25 million homes with natural gas



PG&E's Integrated Approach



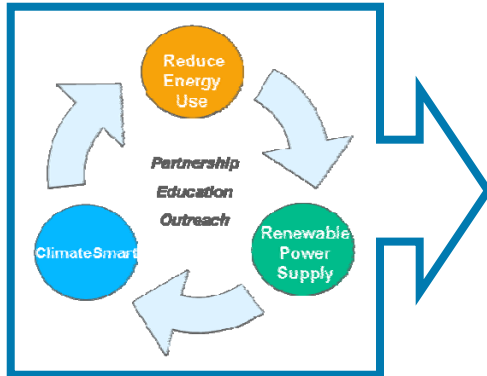


The Full Energy Picture: Cost Effectiveness

- 1. Energy Conservation
 - Changing usage patterns to reduce energy consumption
- 2. Energy Efficiency
 - Using less energy without changing patterns
- 3. Energy from Renewable's
 - Energy generated from natural resources (Solar, Wind, etc)
- 4. Carbon Offsets
 - Programs that allow individuals to reduce their impact on climate change



Why Energy Efficiency Before Solar?



EE should be implemented prior to Solar

Why?

- EE is typically much more **cost-effective** than Solar
- **California's loading order** requires that EE be implemented prior to Solar
- Decreasing a facility's consumption with EE reduces the size – **and cost** – of the Solar system necessary to offset the facility's load
- **Less usage** → **smaller solar system needed** → **lower cost**





Before Solar





Complete an Energy Efficiency Audit

Types of Audits Available

- On-site Audit
- Targeted Energy Audit
- Integrated Audit
- Online (not recommended for Large Commercial)
- Other: Retrocommissioning (RCx Program)



Overview of Program Offerings

- Energy Efficiency Cash or “Deemed” Rebates
- Customized Rebates
- New Construction
- Benchmarking
- Retrocommissioning (RCx)



No-Cost Measures

- Set thermostats at 78 degrees F for cooling in the summer and 68 degrees F for heating in the winter.
- Turn off all office equipment and lights every night and weekend. If you can't turn off the whole computer, turn off the monitor and the printer.
- DE-Lamp Corridor Recessed Fixtures
- Use all ENERGY STAR features that switch equipment to a power-saving mode when not in use
- Use e-mail instead of sending memos and faxing documents.
- If you need to print, consider double-sided printing and reusing paper.



Rebates & Incentives

- Rebates : purchase and install the qualifying product(s) and receive rebate
- Non Residential Retrofit (NRR): customized incentives for business energy efficiency retrofit projects involving the installation of high-efficiency equipment or systems
- Non Residential New Construction: program offers analysis and resources to aid owners and design teams with energy-efficient facility design



PG&E Offers a Variety of Cash or “Deemed” Rebates

- **Rebates include but are not limited to:**

- Reflective window film
- Adjustable speed drives
- HVAC fans
- Occupancy sensors
- LED exit signs
- Premium T-8 or T-5 lamps
- Electronic ballasts
- Network Desktop Computer Management Software



Lighting Example

Building A :Using incandescents	Building B: Using Fluorescents
50 Lamps	50 Lamps
100 Watts	23 Watts
<u>4,000 hours</u>	<u>4,000 hours</u>
20,000 kWh	4,600 kWh
Total Cost per year: \$2,800	Total Cost per year: \$644
Using average of \$0.14/kWh	\$2,156 in Savings before rebates



Non Residential Retrofit

Customized incentives for business energy efficiency retrofit projects involving the installation of high-efficiency equipment or systems.

Some Examples of Eligible Measures

- Interior and Exterior Lighting retrofits
- Chiller replacements
- Variable-Speed Drive installations
- Reflective Window Film installations
- Boiler replacements

Lighting	\$0.05 / kWh	Other	\$0.09 / kWh
AC&R I	\$0.15 / kWh	AC&R II	\$0.09 / kWh
Natural Gas	\$1.00 / therm	All Measures	\$100 / Peak KW

***Rebate up to 50% of total project cost**



Non Residential New Construction (Savings By Design)

Statewide program for commercial, industrial, High Tech and agricultural customers that encourages energy-efficient building and process design and construction.

SBD offers analysis and resources to aid owners and design teams with energy-efficient facility design.

Technical design assistance to analyze and design more energy-efficient buildings and process systems

Owner incentives of up to \$500,000 per project to help offset the investment in energy-efficient building and design, subject to project incremental costs.

Design team incentives of up to \$50,000 per project to reward designers who meet ambitious energy-efficiency goals.

Energy Design Resources, the educational component of the Savings By Design program, offers **design tools and resources** for architects and engineers to support energy-efficient design efforts.

CSI Requires all Non-Residential New Construction Projects to exceed T-24 by at least 15%



Benchmarking

PG&E's Automated Benchmarking Service (ABS) provides the ENERGY STAR Portfolio Manager with your monthly energy usage data so you don't have to manually enter the data yourself each month. Plus, ABS imports historical data, so you can see the effect of energy use changes over time.

- **Target buildings for improvement**
- **Track energy use, costs, and greenhouse gases over time**
- **Receive a prestigious ENERGY STAR label with scores above 75**



Retrocommissioning (RCx)

A systematic process for identifying less-than-optimal performance in an existing facility's equipment and control systems and making necessary repairs or enhancements to save energy and cost

- Incentives are paid directly to the customer based on achieved annual energy savings, capped at 50% of the measure cost.
 - PG&E will provide diagnostic, engineering and cost estimating resources to identify and analyze potential energy saving projects from RCx measures.
- In addition to receiving cash incentives, the RCx Program may offers participants:
 - A more productive facility for people and products
 - More efficient building operations
 - Longer equipment service life
 - Fewer service and maintenance calls
 - Lower energy bills
 - A thorough building assessment by qualified engineering professionals
 - Technical support throughout the RCx implementation process



Going Solar





Go Solar

- Do your research:
 - Select system location
 - Roof vs. Ground Mounted
 - Condition/Age of Roof
 - Space
 - Shading factors
 - Aesthetics
 - Interview potential solar contractors and obtain at least 3 bids before making your selection
 - Determine how much usage to be offset (size of system)
 - Must be within CSI guidelines (system output must not exceed previous 12 month usage)

.



Go Solar

- **Reduce Costs**

- California Solar Initiative

- 10 year program (2007-2017)
 - Must be in Investor Owned Utility (IOU) territory
 - Residential Retrofit, Non-Residential retrofit/new construction

- Federal Tax Credit

- 30% of net cost
 - Extended through 2016
 - Accelerated Depreciation

- Net Energy Metering

- Meter keeps track of debits/credits
 - “Buy and sell” at the going rate



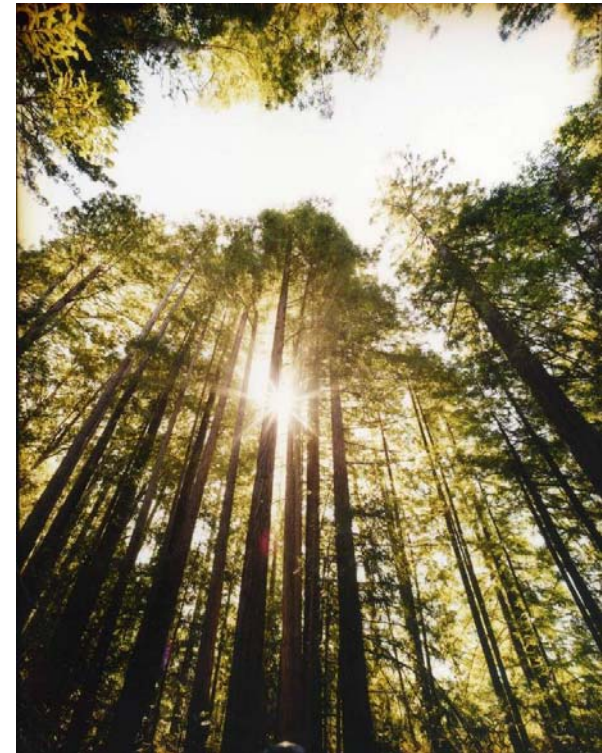
After Solar





Continue Conservation and Energy Efficiency Practices

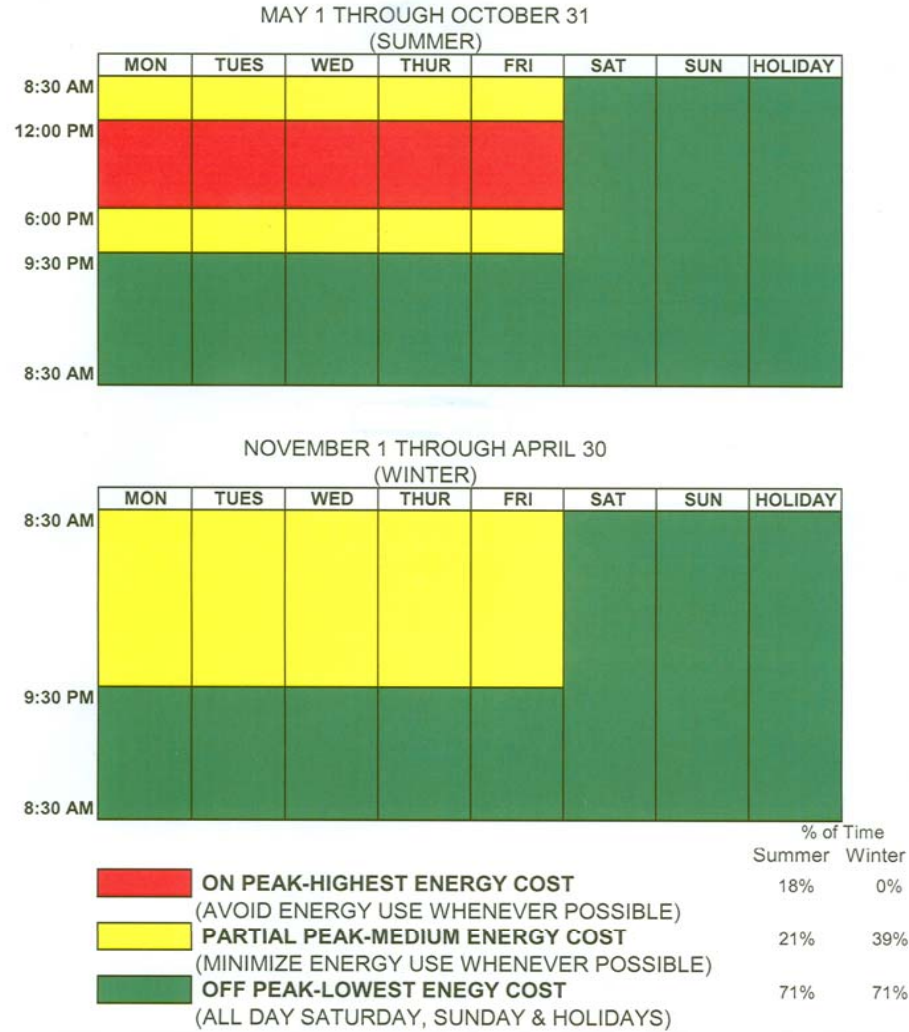
- Maximize your systems production
 - Monitoring
- Continue energy efficiency efforts to further reduce costs
- Consider your Carbon Footprint
- Regular maintenance on your system
 - Panel washing
 - Periodic checking of system performance





Maximize Your Rate Schedule

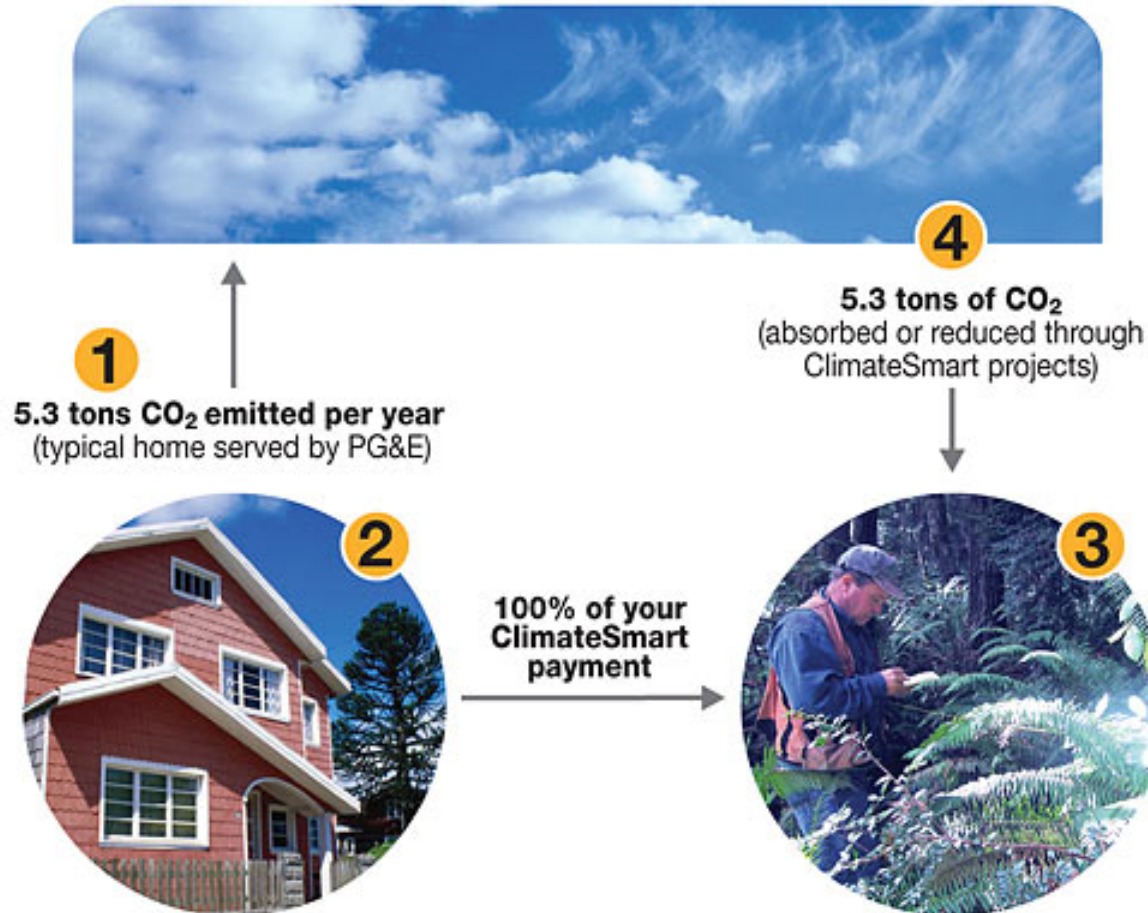
A-6, E-19 & E-20 Time Periods





Reducing your Carbon Footprint: ClimateSmart

Make the Energy You Use “Climate Neutral”
with ClimateSmart™





Energy Efficiency & Training Programs



Energy Efficiency Education & Training Programs

- Energy efficiency classes and trainings
 - Energy Training Center – Stockton
 - Pacific Energy Center – San Francisco
 - Food Service Technology Center – San Ramon
- Tool Lending Library
 - Loans building measurement equipment for energy analysis



Q & A





Resources

- **Large Commercial Audits:** Contact your assigned PG&E Account Manger or Representative or call 1-800-468-4743
- **Rebates and Incentives:**
<http://www.pge.com/mybusiness/energysavingsrebates/rebatesincentives/>
- **Benchmarking:** <http://www.pge.com/benchmarking/>
- **Retrocommissioning:**
<http://www.pge.com/mybusiness/energysavingsrebates/analyzer/retrocommissioning/>
- **Climate Smart:**
<http://www.pge.com/mybusiness/environment/pge/climate/>



Solar Resources

- Solar Customer Service Center: 1-877-743-4112
www.pge.com/solar
- California Solar Initiative: Solar@pge.com
www.pge.com/CSI
- Net Energy metering: gen@pge.com www.pge.com/gen
- Solar Classes:
www.pge.com/solareducation www.pge.com/solarclasses