



Solar Strategies

ENERGY STAR
Monthly Partner Web Conference
June 17, 2009

Call-in number: 866 299 3188
Conference Code 202 343 9965#

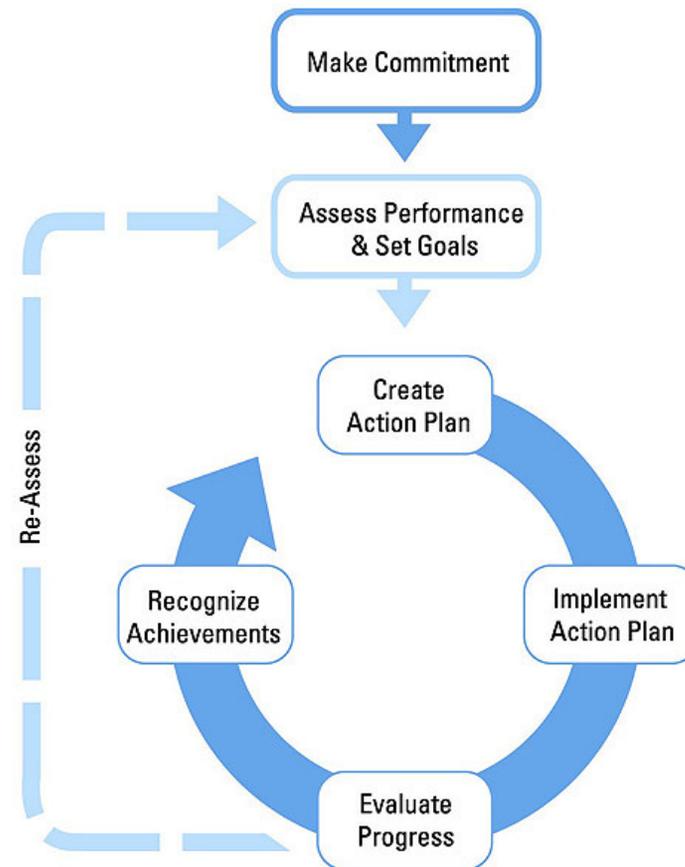


Learn more at energystar.gov

About The Web Conferences



- Monthly
- Topics are structured on a strategic approach to energy management
- Help you continually improve energy performance
- Opportunity to share ideas with others
- Slides are a starting point for discussion
- Open & interactive



Web Conference Tips

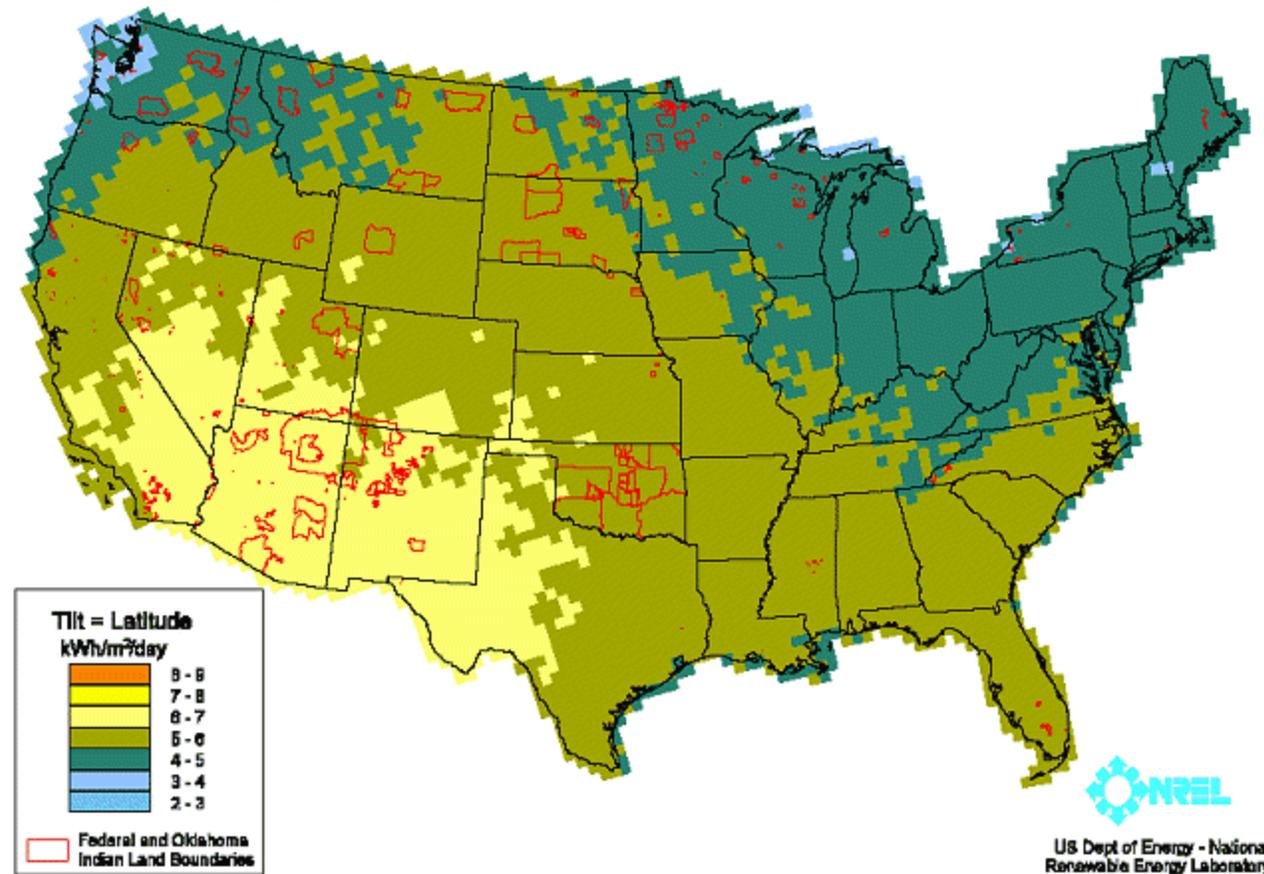


- Mute – To improve sound quality, all phones will be muted.
- Use # 6 to un-mute and * 6 – to mute
- Presentation slides will be sent by email to all participants following the web conference.

Leveraging solar energy



Figure 11. Solar Photovoltaic (PV) Resource Potential

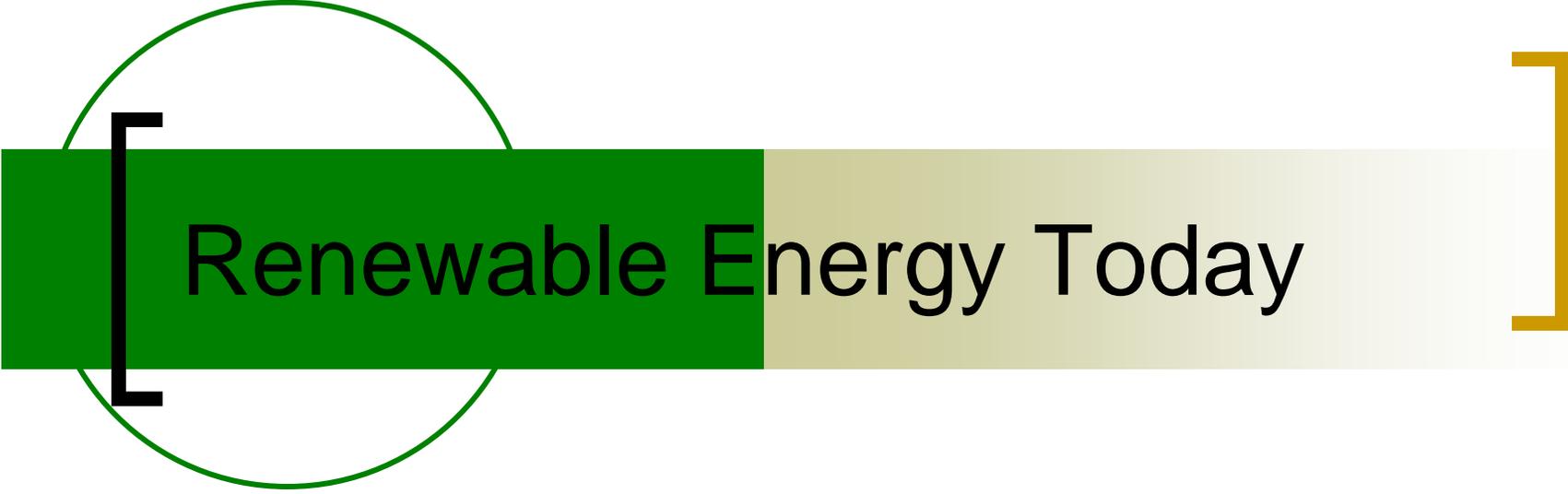


Today's Web Conference



Solar Strategies

- John Fojut – Kohl's
- Tom Pagliuco – Schering-Plough Corporation
- James Critchfield – Green Power Partnership
- Discussion
- Announcements



Renewable Energy Today

John Fojut

Vice President Corporate
Sustainability

KOHL'S[®]
expect **great** things[®]



Presentation Overview

- Solar Host Strategy
- Kohl's Renewable Energy Position
- Investing in quality Renewable Energy Credits
- What's Next?
- Lessons Learned
- Conclusions



Why launch an aggressive solar campaign?

- Fits into overall sustainability program
- Makes immediate financial sense
- Hedge against rising electric costs
- Customers support green initiatives



Life as the World's Largest Retail Solar Host

- 67 activated arrays in California, New Jersey, Wisconsin, Connecticut, Maryland and Oregon
- An additional 20 in various construction stages
- Expansion as economics make sense
- Energy Star Ratings are improving and energy savings are being realized
- Communication to customer remains a challenge



Kohl's Solar Arrays



- Photo Studio
- Stores
- DC



How did Kohl's roll out the solar strategy?

- Support from the top
- Quick review process
- No pilot test
- Strong business partner



Kohl's Renewable Energy Portfolio

- 600,990,000 kWh
- 50% of Kohl's Energy Use
- Rank number 1 in retail sector by EPA Green Power Partnership
- Portfolio includes:
 - Solar RECs
 - Direct Purchase RECs
 - Blended Source RECs
 - Utility Programs



Kohl's Renewable Energy Portfolio

- 2008 Purchase=236,017,000 kWh
- Increase 254 % over LY
- Our strategy
 - Increase of Solar REC Portfolio through PPA over 20years
 - Increase of direct REC purchases
 - Advantageous market conditions



Renewable Energy Credit Quality

- Invest in Green-E credits
- Keep vintage post 1997 or greater
- Vary types of renewables in your portfolio
- Understand where your emissions are generated so credits can aid in carbon mitigation
- Buyer beware



[What's Next in Renewables?]

- Fuel Cells
- Small Scale Wind Turbines
- Purchase or PPA
 - Will PPA funding continue to be viable in light of banking situation?
 - How will stimulus package impact the industry?



[What did we do right?]

- Move quickly when the rebates had the highest value
- Streamlined the approval process
- Figured out an acceptable business model in using the PPA.



Sustainability Lessons Learned

- Carbon footprint measurement and energy strategies go hand in hand
- Quality partnerships in purchasing RECs and investment in renewable energy is key in a tough economy
- The general public does not understand RECs, translation is essential



Conclusions

- A retail store's biggest impact on the environment is the use of energy.
- Each Organization must define its sustainability goals and find ways to be consistent on an annual basis.
- Top Management must support those goals over the long term.





Solar Power Purchase Agreements

June 17, 2009

Thomas A. Pagliuco
Director, Global Energy
Schering-Plough Corporation



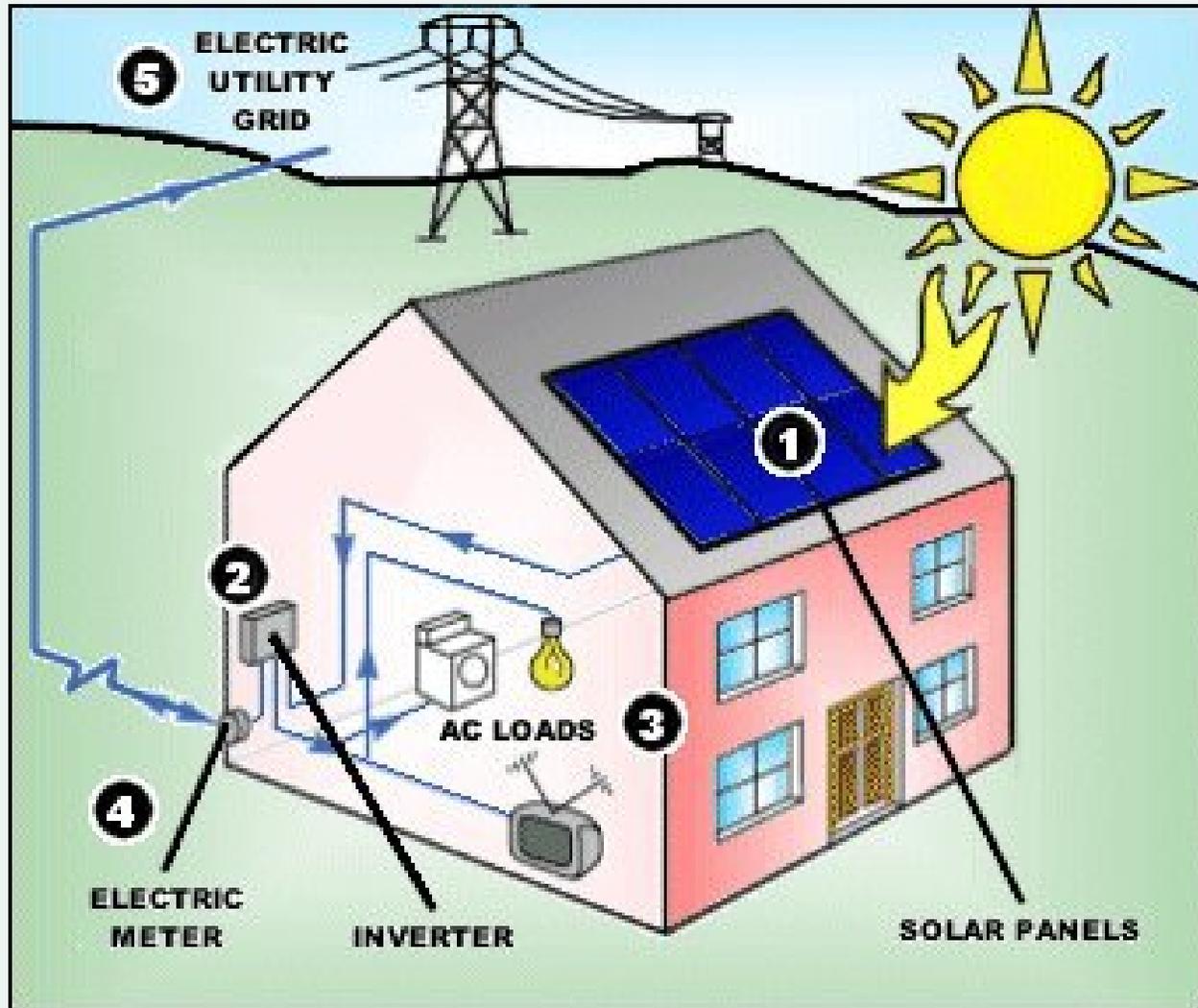
One of the Largest Roof Top Solar Power Systems in NJ, the USA and North America



Project Statistics

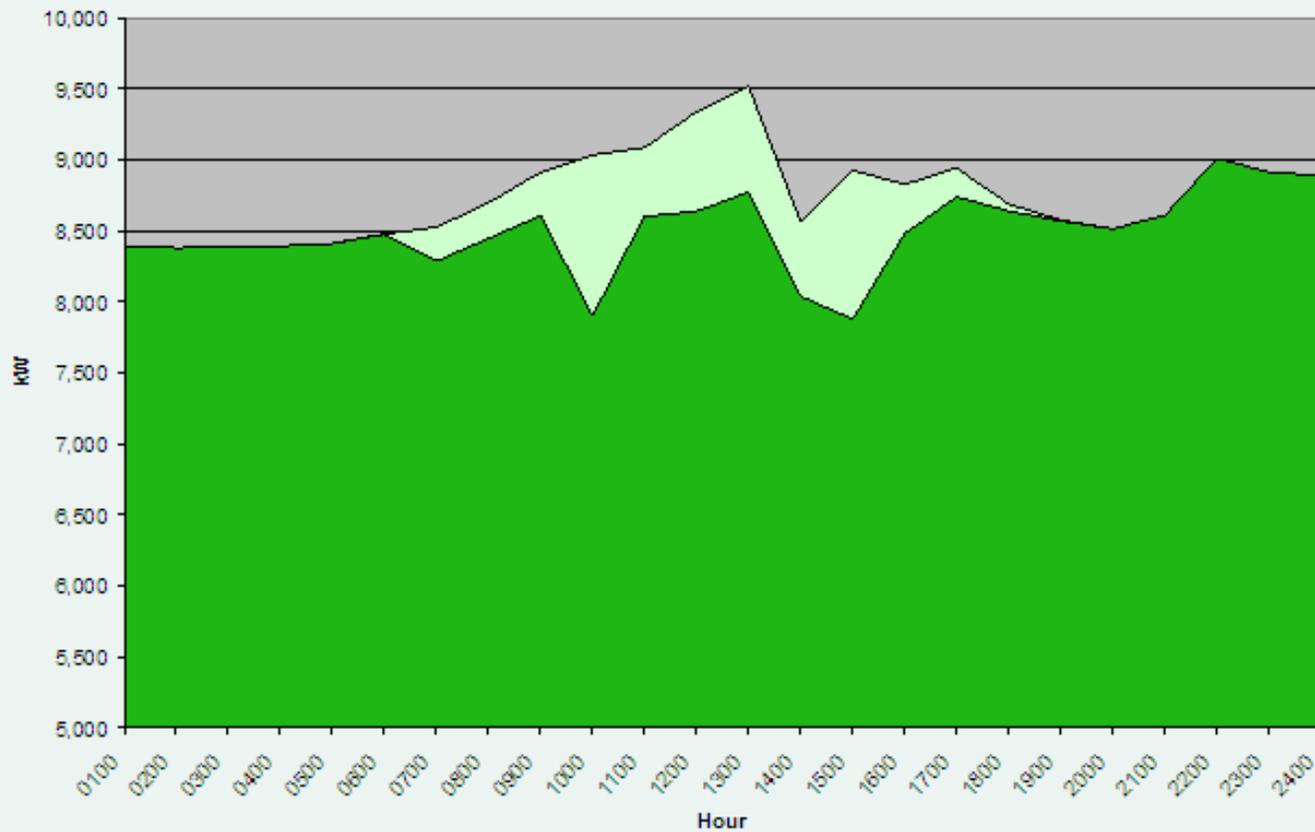
- 1.7 MWdc installed capacity
- Located on 7 roof tops in S-P's Summit, NJ campus
- > 22,000 panels
- Generates 1.8MM kWh/yr
- 12% of sites peak electric requirements
- 3% of sites total electric usage
- Reduces 1.3 MM lbs of CO₂eq per year
- Equivalent to planting 132 acres of pine forest

How a Solar Power System Works



Solar Power Reduces the Peak

Typical Hourly Usage and PV Output



NJ Solar Electric Market Overview

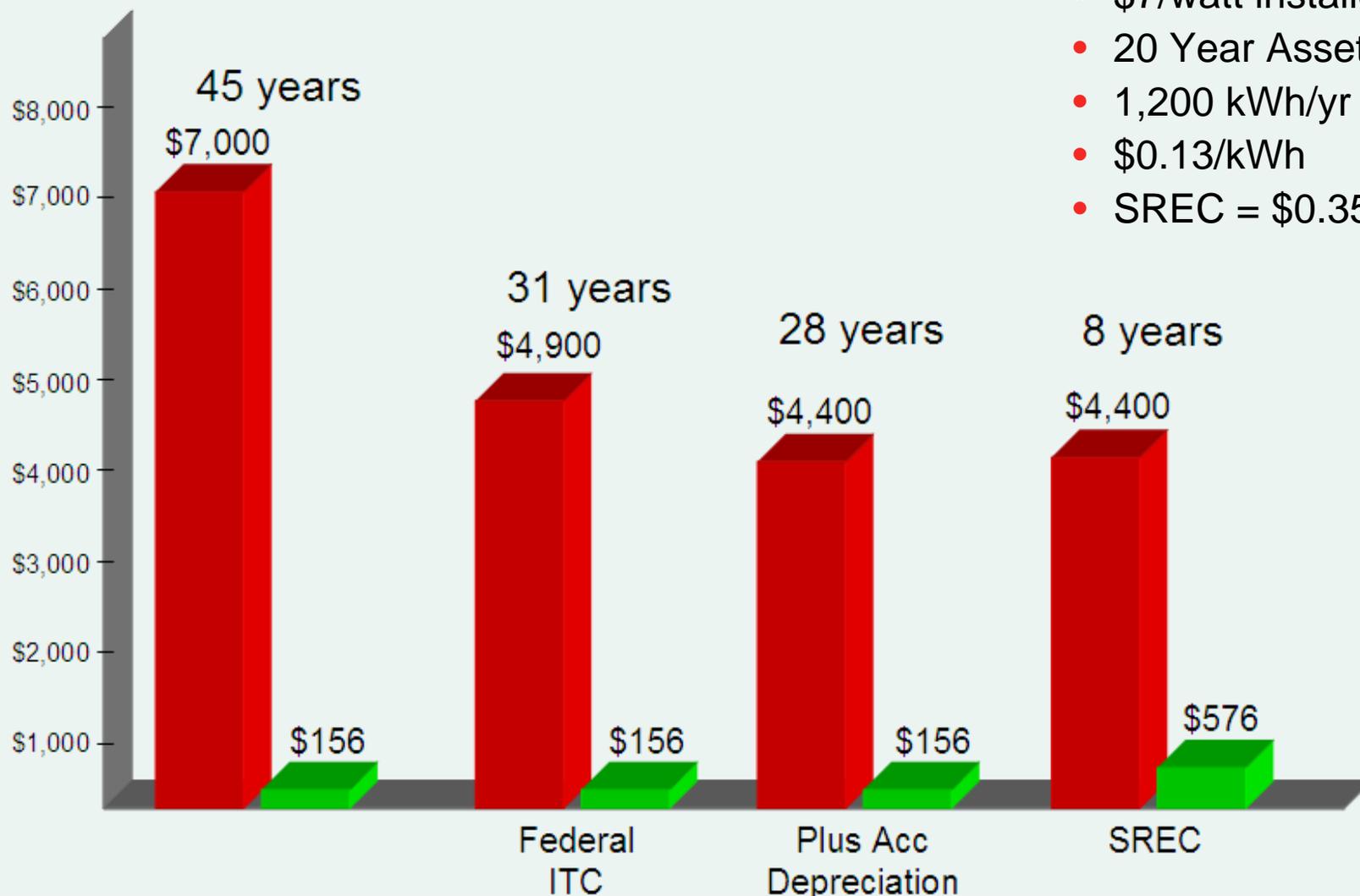
- 2nd largest market in the USA behind California
- Moved from rebate driven to market driven (SRECs)
- Best financial incentives in USA
 - Solar Renewable Energy Credits (SREC)
 - Federal Investment Tax Credit (30%)
 - Accelerated depreciation (5 year MACRS)
- Favorable regulatory environment
 - net metering
 - electrical interconnect
 - no sales tax on systems
 - no property tax on systems



Solar Power Economics

Assumptions

- 1 kW system
- \$7/watt installed cost
- 20 Year Asset Life
- 1,200 kWh/yr (14%)
- \$0.13/kWh
- SREC = \$0.35/kWh



Business Case: Meeting the Triple Bottom Line

Savings, Sustainability, Society

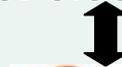
- Savings
 - Solar Power Purchase Agreement (SPPA) provides a no capital, no O&M risk option
 - Hedge against rising energy costs and volatility
 - Reduces dependence on the grid, the utility and future rate increases
- Sustainability
 - Reduces greenhouse gases ~600 metric tonnes CO₂ per year
 - Reduces stress on the grid during high usage periods
- Society
 - Enhances our public image and meets our Corporate commitment
 - Links to our Social Action Agenda & Energy Management Commitment
 - Major supporter of NJ's solar PV and renewable energy goals
 - Makes a visible statement to our colleagues and neighbors of our commitment to energy management

Solar Power Purchase Agreement Structure



Various subcontractors

(i.e. electrical) • Field services



- Project Developer
- Technology (thin film)



- System Owner & Financier
- System Operator
- Maintenance Services
- SREC ownership



- Receive electric power output

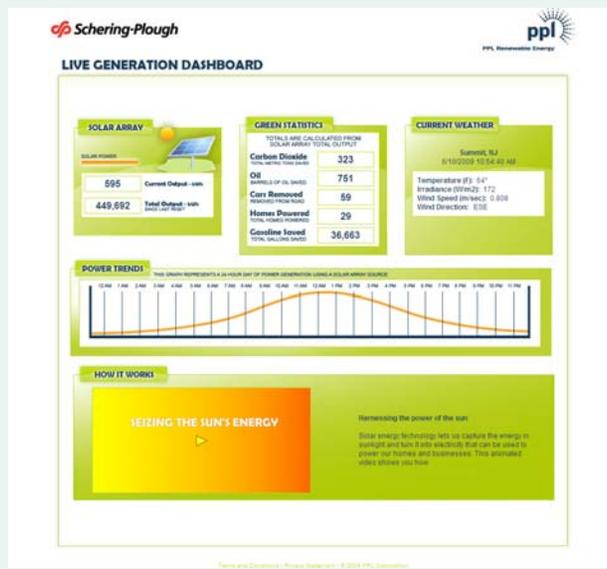
Announcing the Project



Dedicating the Project



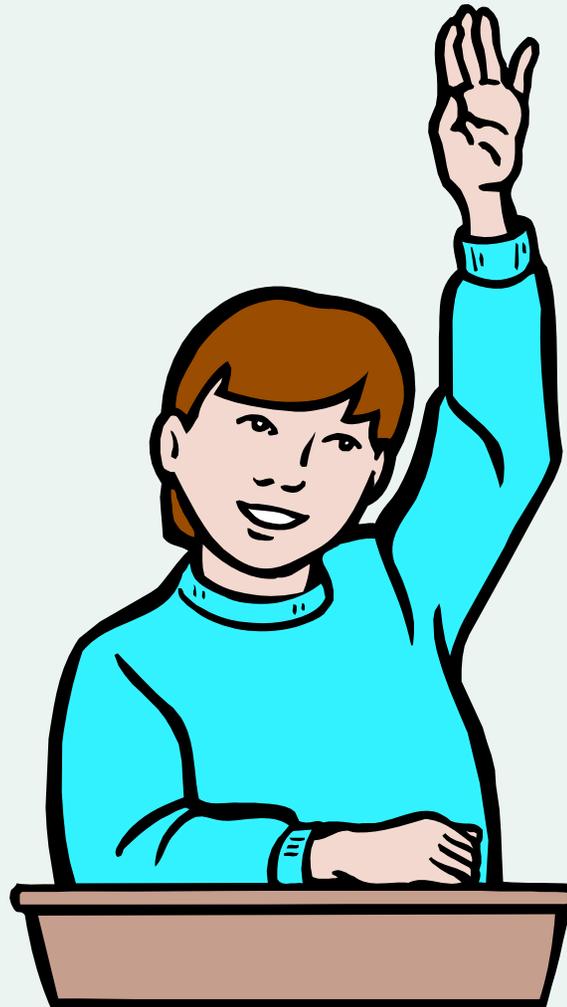
Engaging colleagues and the community



Tips for executing a Solar PPA

- It is not more difficult than a construction project, approach it like one
- If you have third party owned energy assets (i.e CHP, boilers) or have done performance contracting you can do a SPPA
- Need flat, unobstructed, **new** roofs (or area)
- Find a partner that you trust with your roof (or site)
- Shop around for price
- Involve your communication and community relation groups early in the process
 - develop communication plan for the project – internal and external

Questions ???



Contact Information



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SPPA Summary

Benefits for host customer

- No upfront capital cost
- Predictable energy pricing
- No operating or performance risk
- Projects can be cash flow positive from day one
- Opportunity for positive public relations
- Option to make environmental claims about being solar powered
- Option to make a reduction in carbon footprint

Challenges for host customer

- Understand the trade offs related to REC ownership/sale
- Dealing with more complex set of negotiations than buying a PV system outright
- Potential for increase in overall administrative costs
- Potential increase in property taxes
- Host site lease issues



EPA's Green Power Partnership

- What is the Green Power Partnership?
 - Voluntary program supporting organizations in buying green power in order to reduce the environmental impacts of conventional electricity use
- What we offer?
 - Credibility
 - Upfront technical support
 - Information on REC markets and ownership issues
 - Climate policy and environmental claims guidance
 - Alternate green power product options
 - Recognition opportunities (Kohl's 2008 Onsite Generation and 2007 Green Power Purchaser award winner)



EPA Green Power Partnership Webinar Series

- Topic: Solar Power Purchase Agreements
- When: July 28th 1-2pm EDT
- Presentations from:
 - Sun Edison – SPPA provider
 - Staples – SPPA host customer
- To register for this Webinar, visit:
 - <https://www2.gotomeeting.com/register/467755970>
- More information
 - Blaine Collison (collison.blaine@epa.gov or 202-343-9139)
 - www.epa.gov/greenpower



Discussion



- Use * 6 to un-mute phone
- # 6 to re-mute phone

Announcements



- July 7 @ 2 PM – Change the World with ENERGY STAR Pledge Drive Campaign

- July 9 @ 2PM – Supply Chain Working Group Meeting - Kimberly-Clark will be presenting.

2009 Web Conferences



- July - Engaging Sites With Performance Data
- August - Lighting Technology & Strategies
- September - Our Top Energy Projects
- October - Energy and GHG Management
- November - Energy Management Financing Strategies
- December - No web conference



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- Thank you