



Solar Project Renewable Energy Credits

August 28, 2013



Solar Summary

- Lowest Percentage Production
 - 75%
- Highest Percentage Production
 - 135.1 %
- District-wide Average Production
 - 92.2%
- Calculated Savings (cumulative to date)
 - 4.4 Million



Solar Low/High

Foothill Middle	68751	18266	786	334	\$81,138.48	-\$28,463.37	\$109,601.85	135.1%
Hidden Valley	6840	5167	222	94	\$55,058.18	\$13,772.89	\$41,285.29	75.0%

15515.20667 ~ Tonnes of CO2 avoided

2426.331449 ~ Average US homes powered

32455770.27 ~ Miles not driven

Notes -

2009 Actual billing collected from PG and E true up statements

2012 Actual billing collected from PG and E true up statements

Meadow Homes will not have a full year of solar billing until Nov 2013

KWh produced and Environmental values are updated daily

KWh produced is cumulative from system initial activation

Some sites historic use incorporated multiple meters such as MDHS

Energy Efficiency Improvements and Programs initiated during 2008 and 2009 also effect the demand and costs

Several sites such as Mt Diablo Elementary already had a small solar array on new buildings

Kiosk website went live June 2012 immediately following the first group of the installation commissioning with PG and E

Sites with negative original forecasts were over sized for future growth including HVAC and or new buildings

All forecasts were adjusted after the first full year billing cycle using the conservative 4% escalator identified in board presentations prior to green lighting the project.

Not all district electric meters were included for solar hook up as PG and E does not typically allow multiple solar connected meters. Therefore this data only reflects solar connected meters.




Carbon Credits

- AB32 – Assembly Bill 32 – California Global Warming Solutions Act of 2006
- ARB – California Air Resources Board
- CEC – California Energy Commission
- CPUC – California Public Utilities Commission
- GHG – Greenhouse Gas
- REC – Renewable Energy Credit
- RPS – Renewable Portfolio Standard
- TREC – Transferrable Renewable Energy Credit
- WAPA – Western Area Power Administration
- WREGIS – Western Renewable Energy Generation Information System



Carbon Credits

- Under AB 32, state must reduce GHG emissions to 1990 levels, or lower, by 2020. In the long term, California established the aggressive goal of reducing emissions by 80 percent below 1990 levels by 2050 pursuant to Governor's Executive Order S-3-05. (<http://www.arb.ca.gov/cc/implementation/implementation.htm>)



What is a Renewable Energy Credit




California law (Public Utilities Code §399.12[f]) defines a REC as:

"a certificate of proof, issued through the accounting system established by the Energy Commission... that one unit of electricity was generated and delivered by an eligible renewable energy resource.

‘Renewable energy credit’ includes all renewable and environmental attributes associated with the production of electricity from the eligible renewable energy resource, except for an emissions reduction credit issued pursuant to Section 40709 of the Health and Safety Code and any credits or payments associated with the reduction of solid waste and treatment benefits created by the utilization of biomass or biogas fuels.”

(<http://www.cpuc.ca.gov>)

- 
- There are three types of transactions involving RECs – “bundled”, “unbundled”, and “tradable”.
 - Bundled power purchase agreements are for both the RECs and energy associated with an eligible RPS facility.
 - Unbundled REC transactions are for only the RECs. Once the RECs are unbundled from the energy, the energy is considered null (non-renewable) power and no green claims can be made for use of this null electricity.
 - Tradable REC can be traded to multiple participants before ultimately used for RPS compliance.
 - In the voluntary market, any company (e.g. a grocery store chain) that is not regulated by the state to buy green power can buy RECs to make claims that it is powered by clean energy.

(<http://www.cpuc.ca.gov>)



CPUC D.07-01-018

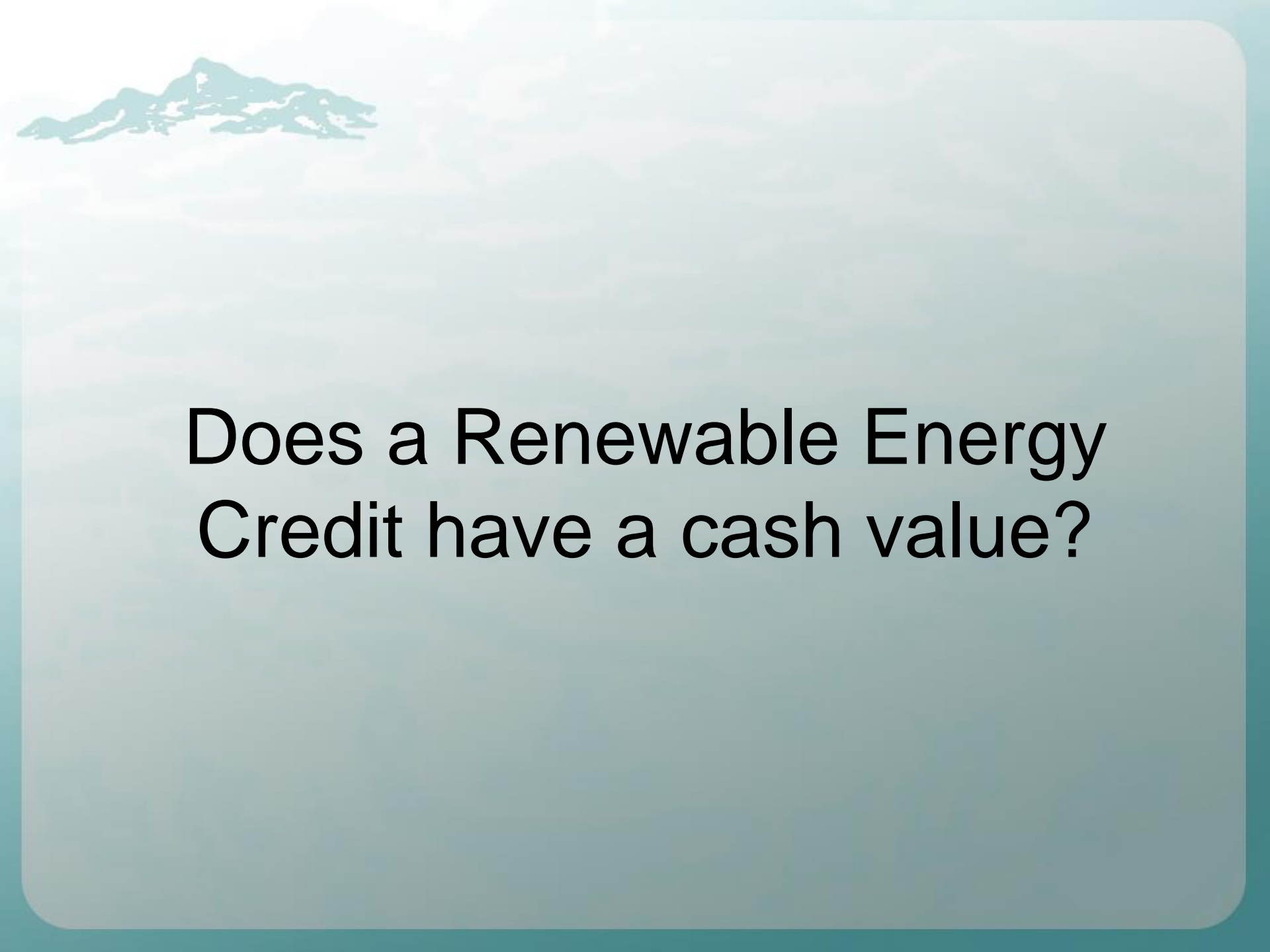
“facilities that serve onsite load (e.g. facilities receiving incentives from the California Solar Initiative or Self-Generation Incentive Program) own their RECs. In other words, the facility owner owns the RECs, and they are not transferred to the utility. That means that a facility owner can either make green claims (e.g. “our company is powered by solar”) if it retains the RECs, or the owner can sell the RECs so another entity can make green claims. The CPUC does not regulate who the facility owner sells its RECs to.”

(http://www.cpuc.ca.gov/PUC/energy/DistGen/DG_RECs.htm)



Renewable Energy Credits

- According to CPUC - TREC can be traded for up to 3 years before a credit must be committed for RPS compliance.
- Facilities must submit monthly meter readings via the Self-Reporting Interface within WREGIS.
- Eligibility Begins: Upon registration with WREGIS and CA.
- REC's are calculated based on power – not carbon



**Does a Renewable Energy
Credit have a cash value?**



Renewable Energy Credits

- Does a REC have cash value? –
 - YES
 - Value depends on the certificate classification
 - Markets:
 - RPS
 - Green E National REC market



Renewable Energy Credits

- Potential outside costs
 - WREGIS Registration
 - Per system (by Generating Unit)
 - \$ 200 GU micro system less than 1 MW
 - \$ \$1,500 GU Large and/or generator aggregators
 - » Annual Fee Plus
 - » \$0.005/Certificate
 - » \$0.005/Certificate
 - » \$0.01/ Certificate
 - Broker Commission
 - ~2 to 4 %
 - REC Transfer Fee
 - District administrative cost (annual certification/tracking)



Renewable Energy Credits

- What is the potential cash value?
 - \$1 to \$2 per certificate
 - 1 certificate += 1 MWh (calculated)
 - Approximate District RAW Generation (as of 8/20/12 3:15 PM)

- 2,978,874 KWh = 2,978 MWh = 2,978 REC's

	Low	High
• REC RAW Value =	\$2,978	\$5,596
• Less 3% broker commission	\$ 89	\$ 179
• Less \$0.01 per certificate	\$ 30	\$ 56
• Less WREGIS Set Up Fee:	\$1,500	\$1,500
• Estimated Net Value: \$1359	\$1,359	\$3,861
• REC's are calculated based on power – not carbon		