

# **PD on Net Energy Metering (NEM) Cap: Unintended Consequences**

**May 2012**

# PG&E Strongly Supports Solar In All Size Ranges

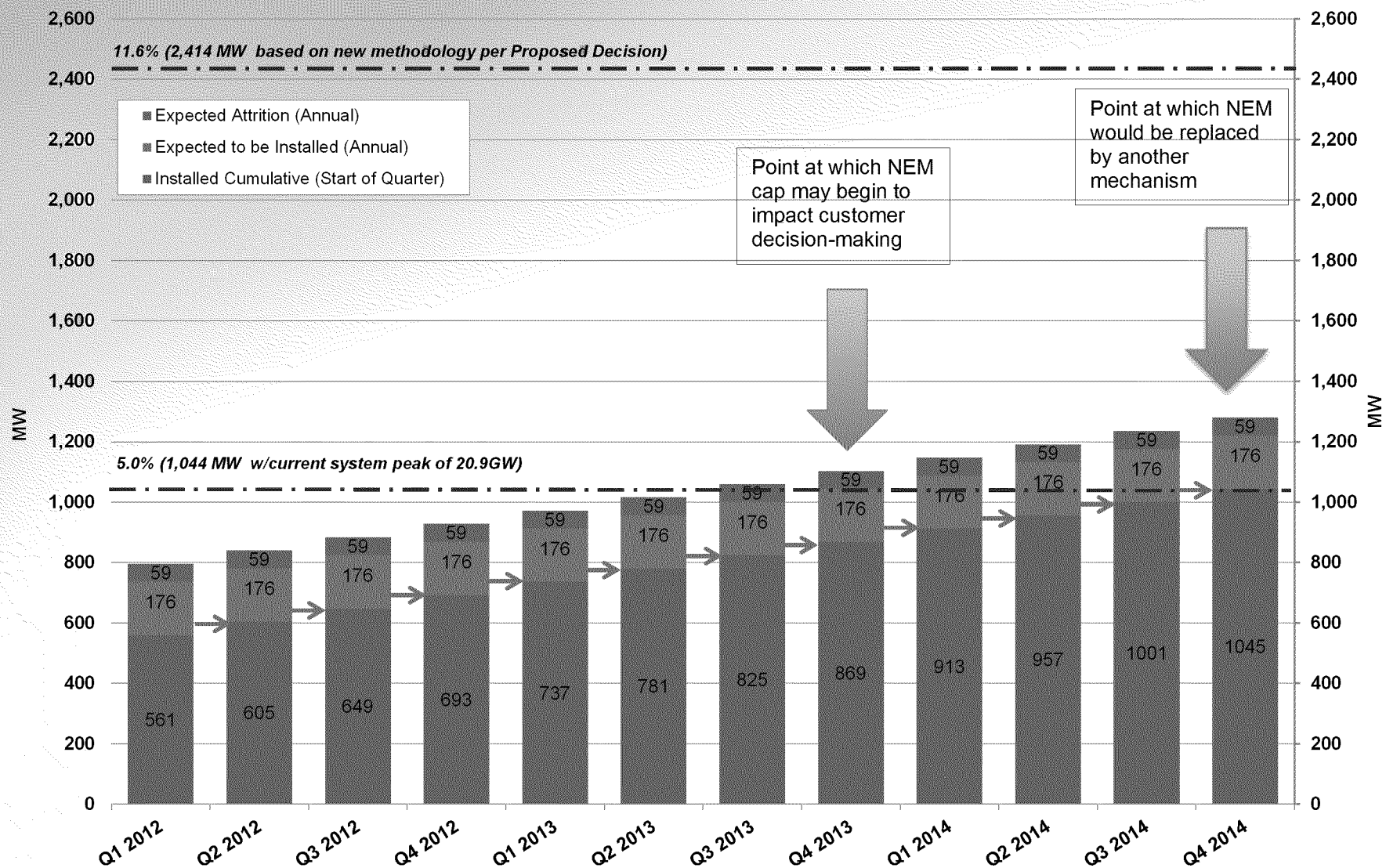
- PG&E has been the number one utility in the country in the category of Annual MWs of solar installations for the past 4 years (per Solar Electric Power Association).
- PG&E has approximately 65,000 NEM customers, growing at over 1,000/month. This represents approximately 30% of rooftop systems nationwide.
- The CSI is currently in last steps (Step 10 non-res and Step 9 res), notwithstanding the fact that it was expected to run through 2016.
- PG&E's customers strongly support green options, including rooftop solar for those who can afford it.
- PG&E has signed contracts to date representing approximately 5,000 MWs of solar. PG&E expects that over half of its RPS supplies (or 18% of its total supply) will come from grid-side solar by 2020.
- Rooftop PV is expected to experience strong continuing growth in California:
  - Steep drop in panel prices
  - Robust, mature installer base
  - Reduction in balance of system costs
  - Newly created REC value
  - New financing options

# The PD's Actions Are Unnecessary at this Time!

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- PG&E is currently at 2.95% towards the current cap definition (617 MWs out of 1044 MWs).
- Extrapolating from observed growth, PG&E will be at around 3.5% at the end of 2012 and around 4.4% at the end of 2013.
- The would PD expand the cap by 230%.
- Given the progression towards the current NEM cap, there is no need to increase the cap to allow for 10 years of expected growth without policy review or regulatory record.
- There is ample time to carefully consider a measured review of retail NEM (See following slide).
- NEM needs to be considered in the context of the broader set of rate design issues that impact solar customers – and non-solar customers.

# Net Energy Metering Cap Progression



# PD Creates Customer Inequities and is Unsupported by Past Regulatory Actions

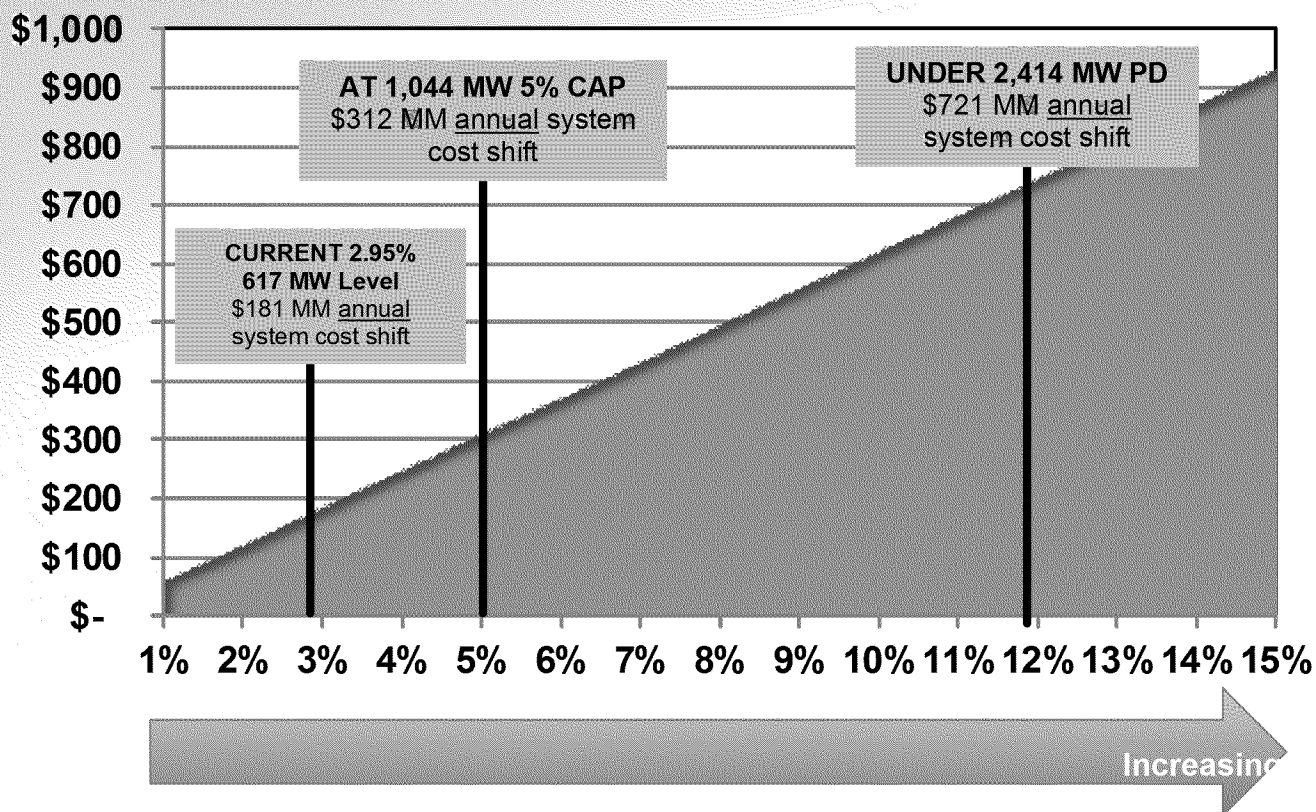
## The PD's NEM Cap Calculation:

1. Would increase PG&E's annual cost shift from rooftop solar at the NEM Cap from ~\$300 MM to more than \$700 MM.
2. Dramatically increases the total subsidy paid by customers, primarily toward the most expensive form of renewable generation, without consideration of other alternatives for achieving environmental objectives.
  - Fails to take into account the cumulative impacts on customer rates of all of the State's environmental programs and tiered rate structure
  - The California Solar Initiative will already be met under existing definition.
3. Unfairly subsidizes high income customers particularly to the detriment of customers in hard hit areas such as the Central Valley.
4. Is inconsistent with NEM cap legislation and all past CPUC interpretations over its nearly 20 year history.

# PG&E System-wide Cost Shift in Excess of \$700 MM Annually from MWs Under the PD

## Adverse Impacts For Non-Solar PG&E Customers

Total Cost Shift (\$MM/yr.)\*



**Tier 3 & 4 Residential Customer Impacts**

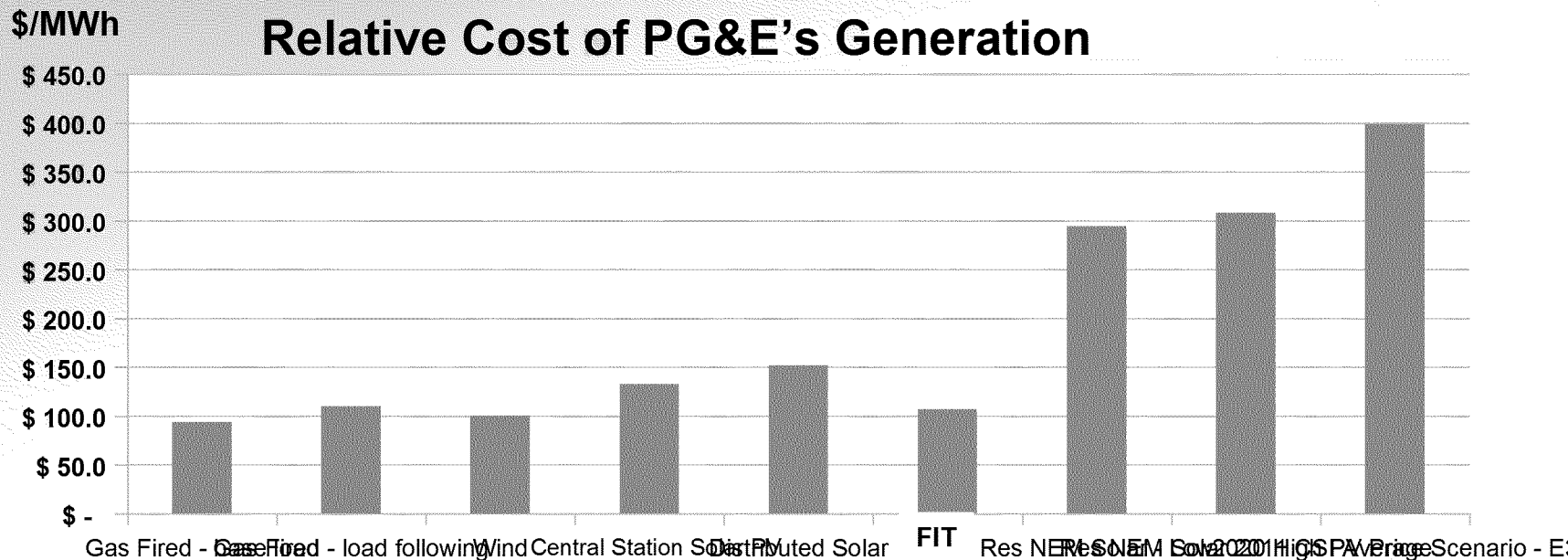
- **CURRENT**  
\$79M annual cost shift (~\$35/cust./yr.)
- **AT 1,044 MW 5% CAP**  
\$137 MM annual cost shift (~\$61/ cust./yr.)
- **UNDER 2,414 MW PD**  
\$316 MM annual cost shift (~\$147/cust./yr.)

\* Based on E3 Rate Analysis for 2017, using system average gen cost w/ TOD as avoided cost

\*\* NEM Cap % of all time system peak (20,883 MW)

# PD Increases Subsidy to High-Cost Rooftop PV

- CPUC has concluded NEM Cap Under Current Definition Achieves CSI Goals
- Central Station Solar Delivers Renewable Energy at a Lower Cost

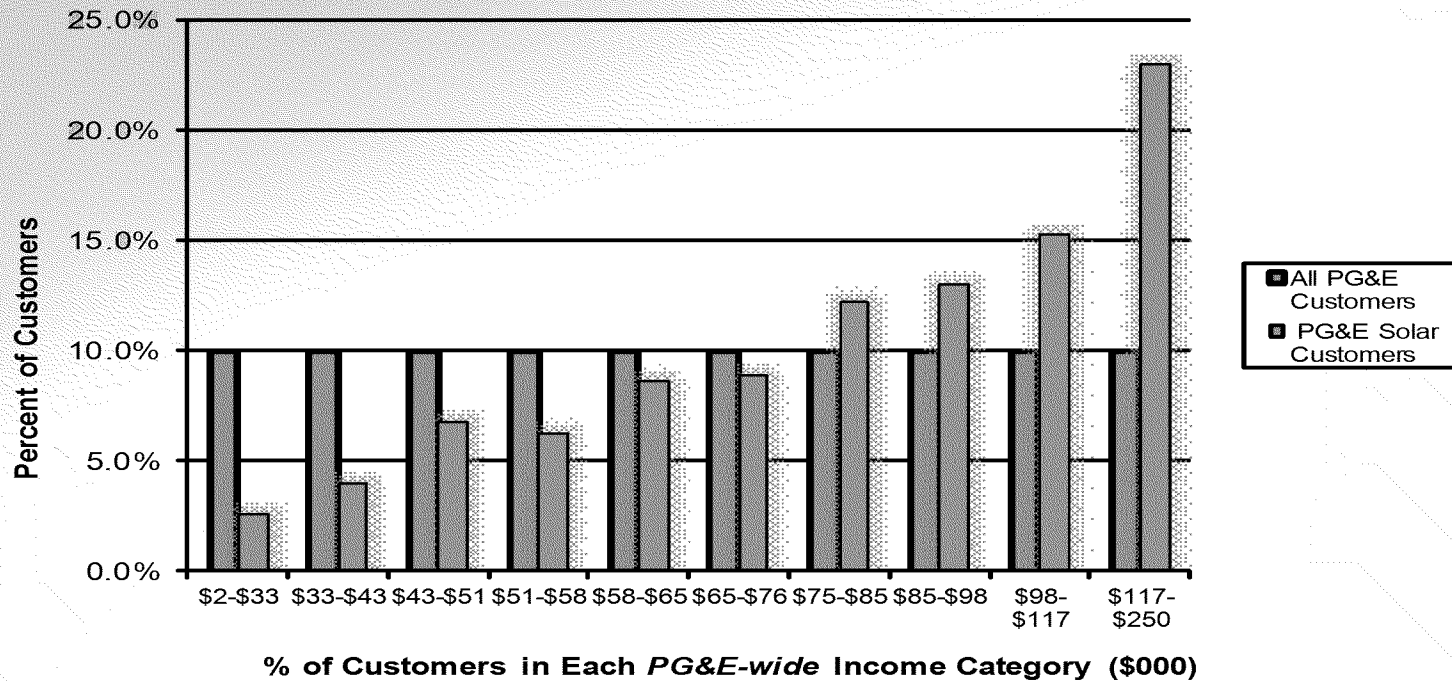


**Sources**

- Gas Fired used 90% capacity factor for base load and 60% capacity factor for load following
- Wind (200+ MW), Central Station Solar (200+ MW) and Distributed Solar (3MW – 20 MW) from CPUC RPS Quarterly Report, Table A-2
- FIT price based on average IOU clearing price in RAM of \$89.12/MWh TOD adjusted using a factor of 1.2 (3/20/12 PD in R.11-05-005, p. 44)
- Res NEM low based on PG&E CSI residential customers installing PV over 5 kW in 2011
- Res NEM average based on all residential CSI installations in 2011
- 2020 High PV from E3's "Technical Potential for Local Distributed Photovoltaics in California," March 2012, Figure 3, page 11

# Rooftop PV Favors Higher Income Customers

**PG&E's higher income customers are much more likely to install rooftop solar**



Note: PG&E has also looked at the distribution of solar installations by year of installation and the pattern above has not changed over time.



# Legislative History and Prior Understanding Are Clear

<i>The PD States:</i>	<i>The PD is Inaccurate because:</i>
<p>“... the Legislature revised the language...from “peak electricity demand” to “aggregate customer peak demand” with the passage of AB 1755. Where the Legislature modifies statutory language with new terminology...the Legislature intended a substantive change.”</p>	<ul style="list-style-type: none"> <li>• In 1998, the Legislature changed from a forecast peak to an actual peak to accommodate Direct Access—not to change the peak definition.*</li> <li>• There is a vast record to support the conclusion that the meaning remained <u>system coincident peak</u>.</li> </ul>
<p>The Legislature “intended to signify something other than coincident peak demand given that the Legislature’s use of the modifying phrase “aggregate customer” is unique to § 2827, and the Legislature avoided the use of inconsistent terminology in order to prevent confusion.”</p>	<ul style="list-style-type: none"> <li>• If the PD definition of the NEM Cap were correct, then the Legislature would not have needed to raise the NEM cap in 2006 (2.5%) or in 2010 (5%)** , nor would the Commission have needed to approve PG&amp;E’s Advice Letter raising the cap to 3.5% in 2010.</li> <li>• The PD is directly at odds with the definition of the NEM Cap calculation in every report prepared by CPUC and accepted by the Legislature since 2005.</li> </ul>
<p>If the Legislature had intended “aggregate customer peak demand” to simply mean coincident peak demand, the words “aggregate customer” would constitute surplusage, a result that statutory interpretation should avoid.”</p>	<ul style="list-style-type: none"> <li>• “Utility peak demand” does not include Direct Access as required by AB 1755, so the language was changed to “aggregate customer peak demand” to indicate that DA load should be included– not that the calculation should be changed</li> </ul>

\* Legislative Council’s Digest AB 1755, chapter 855, Statutes of 1998

\*\* Legislative analysis for SB 1 and AB 510 both cite the nearing of the NEM Cap by IOUS as the reason for raising it to meet CSI

# Appendix



# PD is Inconsistent with Legislative History

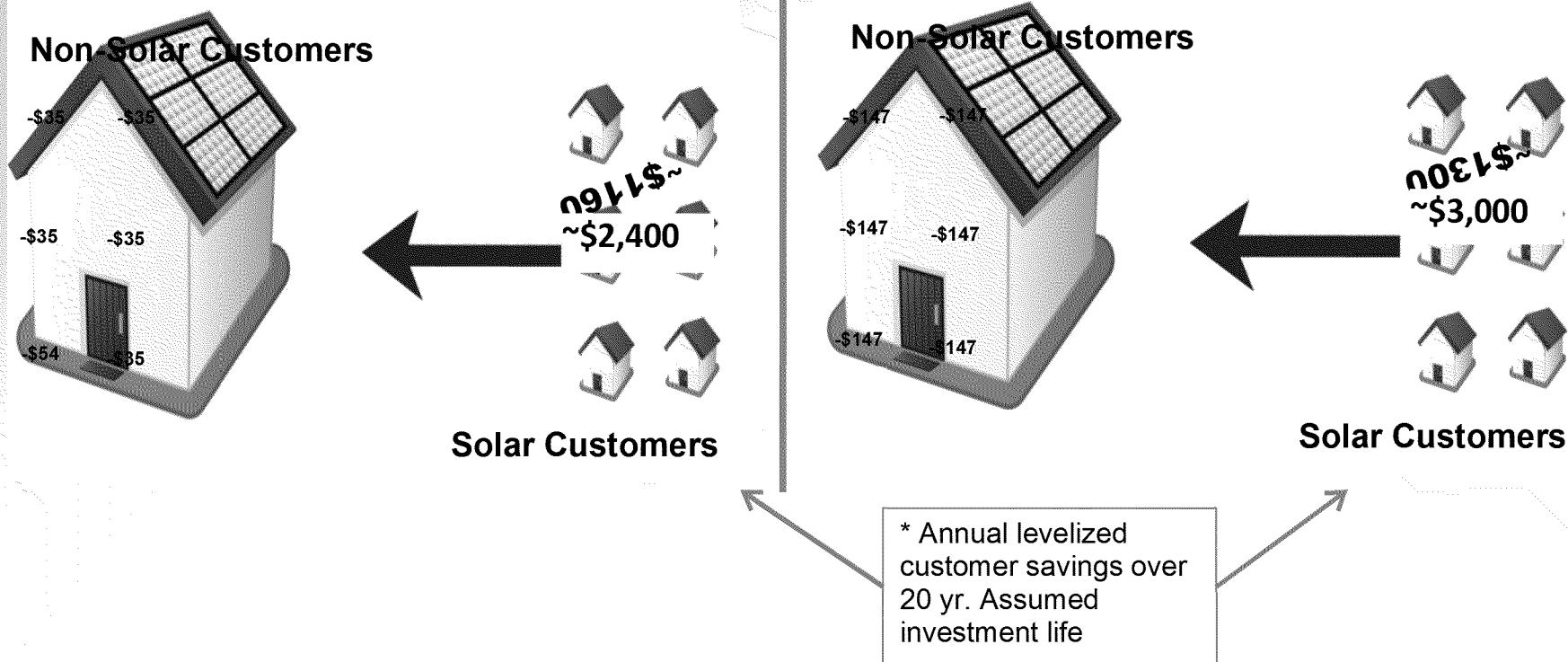
<b>Key Net Energy Metering (NEM) Cap Legislative Milestones</b>	
<b>1995</b>	First NEM bill adopted, with a cap of 0.1% of "peak electricity demand forecast for 1996", forecast coincident load for each utility specified
<b>1998</b>	To implement Direct Access, denominator changed to "aggregate customer peak demand" and specific utility figures dropped*;
<b>2001</b>	NEM cap is briefly removed.
<b>2002</b>	NEM cap reinstated, but increased to 0.5%.* CPUC notes in D.03-02-068 that NEM caps on "aggregate demand" are included to minimize potential financial impacts of program
<b>2005</b>	CPUC reports to legislature on state of the cap, giving coincident peak figures. Legislature increases cap to 2.5%.*
<b>2009</b>	CPUC reports to legislature on state of the cap, giving coincident peak figures.
<b>2010</b>	CPUC reports to legislature on state of the cap, giving coincident peak figures. Legislature increases cap to 5% to meet CSI goals.*
<b>April 2011</b>	CPUC states in report to legislature on the CSI program: "5% of PG&E's peak is 1,040 MW" and affirms that this will be sufficient to handle the projects to be installed under the CSI.*
<b>Oct. 2011</b>	Legislature makes all renewable projects eligible for NEM, but notes that the existing cap is unchanged.*

\* The legislature and CPUC use coincident figures, and make no mention of non-coincident peak.

# What Residential Non-Solar Customers Contribute to Solar Customers

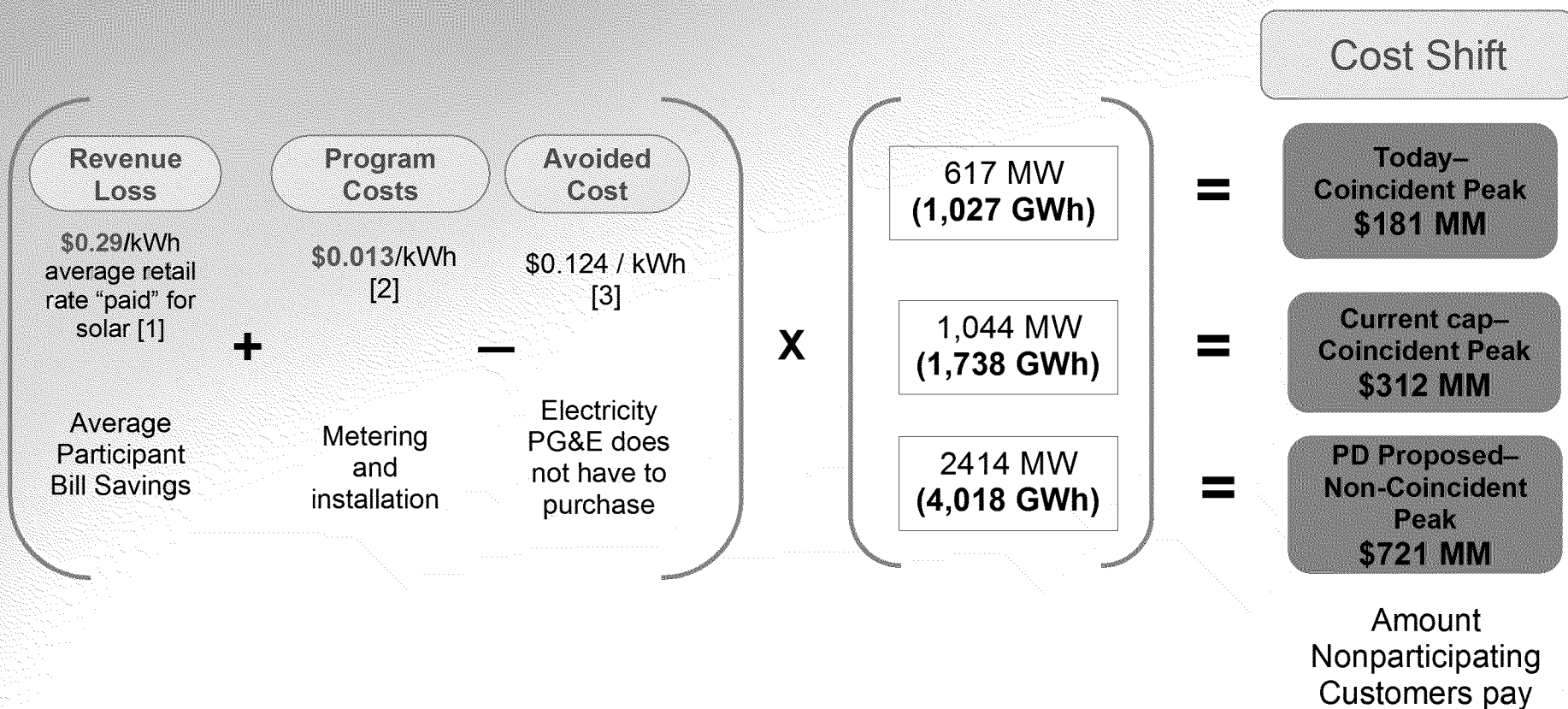
Today (3/2012)  
Each Solar NEM Customer Receives a Benefit of \$2,400/year\*

Under PD  
Each Solar NEM Customer Receives a Benefit of \$3,000/year\*



**Note:** PG&E and SCE do not recover cost shifts within customer class whereas SDG&E recovers entire residential cost shift from res. customers

# Calculation of Cost-Shift



[1] Derived from the annual levelized cost shift from PV installations in 2017. **Source:** E3 Analysis of CSI program, Table 60. – E3 calculates revenue loss as the difference between the customer’s bill with and without the solar installation

[2] Includes installation costs and administrative costs not paid by solar customers (**Source:** E3 CSI evaluation, Tables 22-23)

[3] Average gen component of rate times 1.2 TOD factor. (**Source:** 2017 average gen component from 2011 IEPR)

# ASSUMPTIONS for Residential Cost Shift Estimates

- Lost revenues derived from April 2011 E3 analysis of CSI Program
  - Starts with levelized cost shift per kWh of PV generation for 2017
  - Replaces E3 avoided cost (~\$.185/kwh) with 2017 gen component from 2011 IEPR with 1.2 time-of-day (TOD) factor applied to reflect solar production
- 43.8% of cost shift allocated to residential sector, based on 2012 revenue allocation
- 40% of PV MW installed in residential sector
- Average residential system size assumed at 5 kW
- High Tier customers are those that reach Tier 3 at least once per year – 47% of residential customers