

## PG&E Nears Their CSI Residential MW Objective

Another View

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May 11, 2013

The announcement that PG&E has stopped taking applications for their part of the CSI residential program has caused a bit of nostalgia and a feel good moment in some quarters. In our opinion the CSI residential program would still be languishing had it not benefited from battles won and lucky breaks that could barely be imagined when the CSI program was being created. The three biggest are:

1. The change in Federal residential incentive from a maximum of a \$2,000 tax credit to a 30% unlimited tax credit in October 2008.
2. A glut of PV capacity that drove PV prices down from above \$2 per watt to well below \$1 per watt.
3. The rise of Third Party financing that gained serious traction in 2010.

Chart 1 shows PG&E's historical CSI residential cost and demand activity. The purple and green lines, illustrate the first point. A 30% unlimited residential tax credit was a pipe dream and had all sorts of opposition including the IRS who was concerned it would encourage fraud. However, when miraculously implemented it had the effect of dropping installed costs by more than \$1 per watt. Solar businesses immediately started selling the new incentive. The change was effective starting 2009 and it took a few quarters, but you can see MW of confirmations build – even during the recession (gray bars). By our estimate, PG&E residential customers have, to date, received over \$500 million of tax credits, directly if they buy the system, or indirectly if they contract with a Third Party finance company.

The second point, the rapid decline in PV price, is shown by the blue line. China's mega-expansion and resulting aggressive market actions clearly drove growth. The price reductions, more than \$1 per watt, have largely been passed through by solar businesses to consumers. Combined with the 30% unlimited tax credit, installed cost was reduced by more than \$2 per watt – the vast majority of system savings.

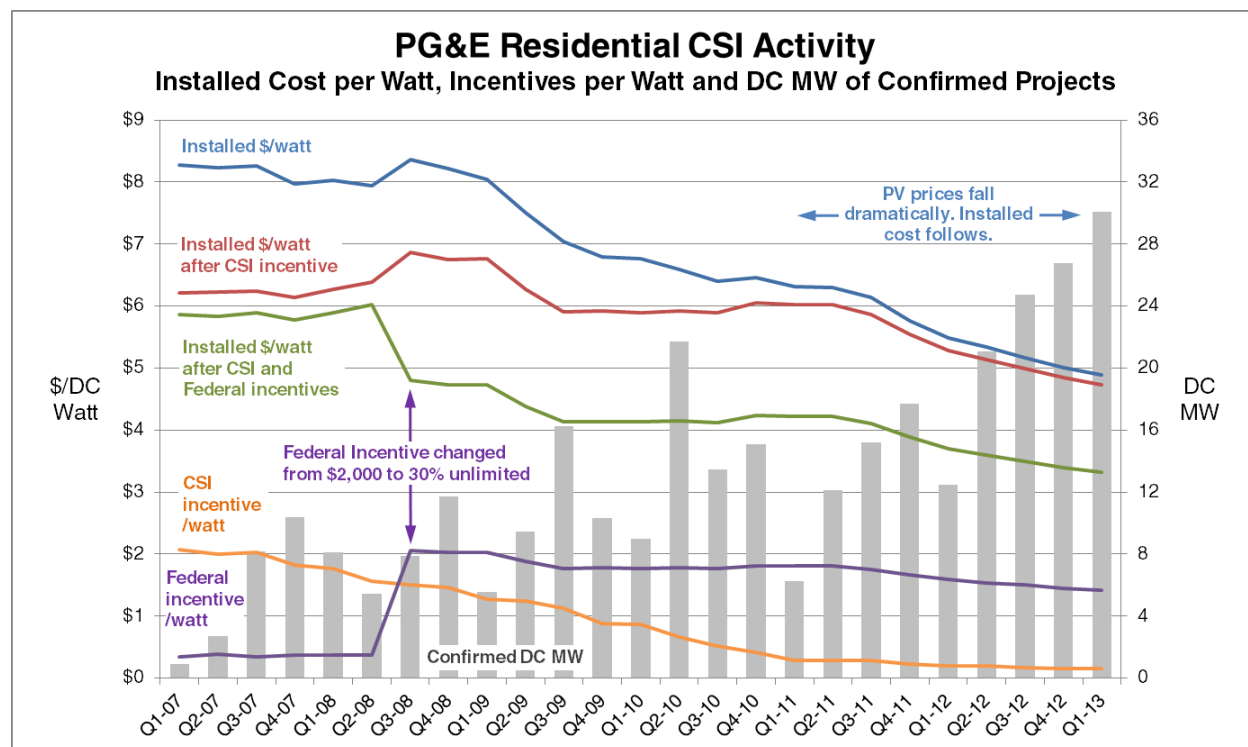
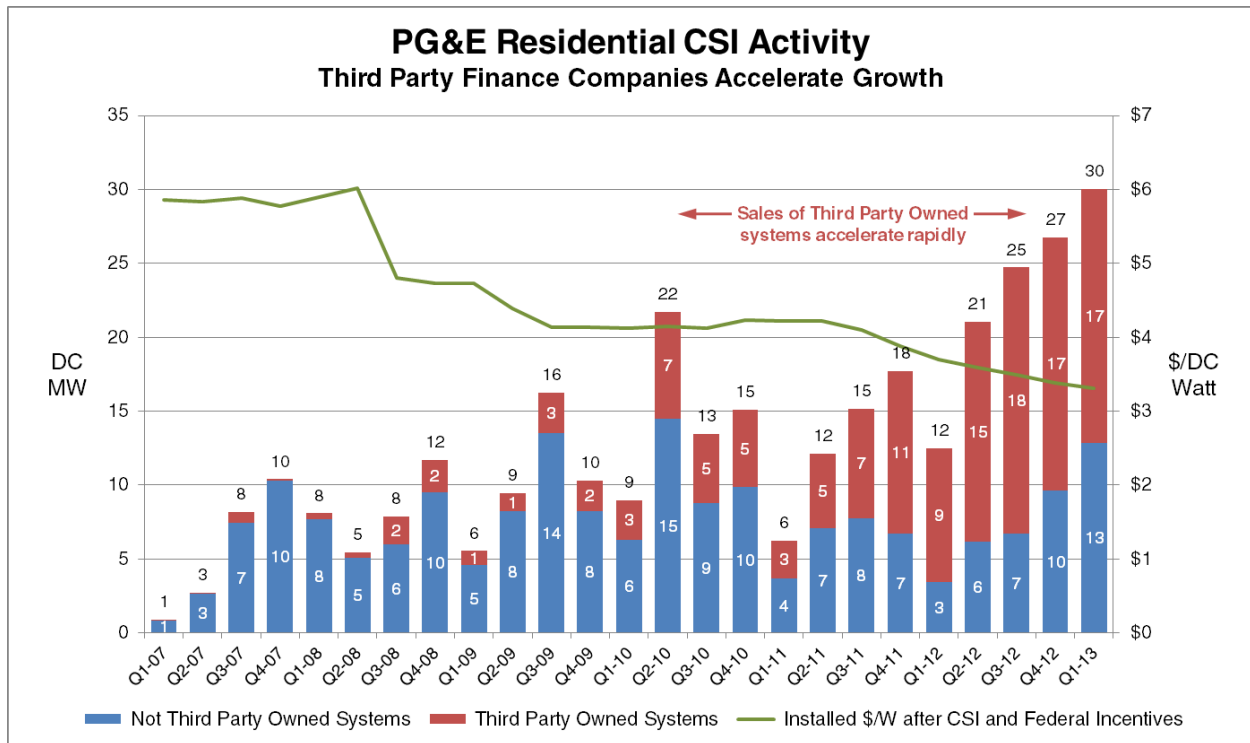


Chart 2 shows the dramatic rise of consumer and investor acceptance of residential Third Party financing in the PG&E territory. By late 2009 you could really see the results of the pioneer's efforts. For the last six quarters TPO systems have dominated the residential market. We have frequently wondered what demand would be in the CSI residential program without Third Party financing, but we are sure that it would not approach the MW numbers we see now.



Referring back to Chart 1, and as shown by the red and orange lines, the CSI incentive has declined as planned and has been just a small part of system savings over the past few years. Depending on who you talk too, it's either been icing on the cake or a nuisance that cost time and money.

So how is the CSI program doing overall? Table 1 shows the results through early May 2013. From the start of the program we have been vocal in our view that the CSI is overly complicated, administratively expensive and causes long project delays. We have also been consistent in our view that the program would not have enough demand to reach the 1,750MW requirement by the end of 2016. PG&E's and CCSE's residential programs are bright spots. As we near the 6½ year mark of the 10 year program we're still not convinced that the CSI will meet its goals.

Now that PG&E's residential program is functionally complete, and presuming PG&E continues to support residential net metering, we'll see another cost and demand experiment. Our guess is that consumers will get a faster install at a lower cost and that solar businesses will operate more efficiently and potentially more profitably. We think this will lead to an increase in demand for residential solar in the PG&E territory.

Program Goals by Administrator	CSI MW Goal	CSI MW Complete and PBI In Payment as of Early May 2013	% of Goal
<b>CCSE</b>			
Non-Residential	120.8	54.3	45%
Residential	59.5	61.3	103%
<b>CCSE Total</b>	<b>180.3</b>	<b>115.6</b>	<b>64%</b>
<b>PG&amp;E</b>			
Non-Residential	512.4	348.4	68%
Residential	252.4	244.6	97%
<b>PG&amp;E Total</b>	<b>764.8</b>	<b>593.0</b>	<b>78%</b>
<b>SCE</b>			
Non-Residential	539.3	239.0	44%
Residential	265.7	169.5	64%
<b>SCE Total</b>	<b>805.0</b>	<b>408.5</b>	<b>51%</b>
<b>Total</b>	<b>1,750.0</b>	<b>1,117.2</b>	<b>64%</b>