US Solar & Alternative Energy
Preparing for the California Rate Design Shift

Equities

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Ahead of CPUC decision on rate design we summarize the debate

With a CPUC decision on rate reforms set to be addressed at the June 17 ratesetting deliberative meeting, we present a summary of the existing variable rates in California, contrasted against both potential new rates under the Alternate PD put forward by CPUC Commissioner Florio as well as ALJ PD put forward recently under Chair Picker. We see the Florio proposal as largely more 'pro-solar' than Picker's PD, but see both as largely still quite supportive, delaying to a large extent timeline for implementation of any fixed charges. We see this as an increasingly hot button issue as any increases on residential consumers will be perceived quite poorly. We include a side-by-side breakdown of rates for each utility today and under proposed structures below.

How are rates today? Substantial bifurcation enables solar for all

The generosity of the current rate structure for solar is a relic of the California energy crisis, at which time only the high tiered rates were allowed to inflate with rate pressures. This has enabled a relatively– and ultimately unsustainable degree of inflation on high-usage customers, creating the ideal environment for consumers to opt to shift towards solar. Since 2001, rates for the high-usage tiers have nearly tripled while lower tiers have increased only modestly at a 1%-2% CAGR.

Net Metering next up on deck – but this looks pushed to 2016

Meanwhile the second aspect of solar reform, Net Energy Metering (NEM), appears poised to have its timeline shifted to 2016 (Docket R.14-07-002). This will be among the first instances in which the NEM rate will be revised, with it currently set at the full retail rate (including grid infrastructure charges) for 20 years for the first 5% market penetration. We expect California to reach the cap ~2017. We see this issue as substantially 'touchier' for the solar industry than rate design and fixed charges, as customer penetration rates are far more sensitive to the NEM rate. This will substantially complicate the economics of solar as they exist, needing to calculate just how much 'over-production' consumers push through during peak mid-day hours, which has historically offset evening consumption.

Adopting a more formulaic approach to NEM reduction?

Among the ideas floated in California, would be a fixed payback period targeted for customers at a generic rate design – with declines in NEM compensation tied to a market index in declining cost of solar. All around, rooftop solar may be poised to a see a more proscriptive (and quasi-regulated) approach around compensation. Determining any 'appropriate' payback period remains a further quandary.

Outlook for distributed resources remains rosy still

While reforms could help drive a sense of reality to some investors around inevitable scaling back of solar subsidies amidst it's continued climb, we see the outlook for rooftop solar as still quite bright. We sense a broader continued appetite for distributed solutions, including solar, at the CPUC. We see forthcoming Distribution Resource Plans (DRPs) to be filed by all of the electric utilities in California on July 1st as largely supportive of this effort. We suspect distributed solutions such as those put forward by all of the states' utilities will largely have a positive readthrough to enabling continued pace of penetration of solar – addressing concerns around concentration of rooftops, etc through pro-active upgrades to the corresponding distribution network to accommodate greater sales into the grid.

What reform means for the Utility-Solar Nexus?

In large part, we continue to see the California utilities as still a net beneficiary of continued pro-renewable policies, seeing an angle for continued reinvestment into the distribution network to support such investments. We see EIX as our top pick in the utility sector following our latest meetings last week (see below notes) and emphasize. We see the overall bias in the sector shifting *away* from transmission – towards distribution opportunities and emphasize the California utilities (specifically EIX and SRE) as well positioned to capture from this trend. The theme of the 'grid of the future' appears to be garnering greater attention and plays well into the investment thesis of both companies.

On the solar side, we continue to perceive a constructive outlook for solar in California, most notably for distributed rooftop solutions. The latest PD and Alternate PD only reiterate this support in our view. While less than ideal from the utility's perspective on compensation, we see this as assuaging wider concerns for continued growth of the rooftop solar industry, particularly in a post ITC environment. We see the relatively pro-solar stance adopted as boding well for the solar sector going into NEM reforms later this year. Altogether, constructive.

Please see below for links to our recent Alternative Energy reports

6/5/15 Calming Concerns on California
6/2/15 Putting the Solar Balance Sheet to Work
5/11/15 The Real Battery Storage Opportunity
5/7/15 SRE: It's Going To Be More MLP-Like, After All
5/4/15 CPN: The Texas Question
4/30/15 PCG: Equitizing San Bruno
4/29/15 EIX: Time for a Tune Up Over SONGS

Summarizing California Rate Designs

In the table below, we've summarized the current status and proposed changes to California's rate tier structure under Docket R.12-06-013. Under the ALJ's Proposed Decision (PD), the current four-tier system would be collapsed to two tiers.

The current system has been in place since the California energy crisis of 2001-2, with virtually no rate increases for the lower-use customers in an effort to promote conservation. However, the system has been criticized by the state's utilities in recent years as a subsidy for wealthier customers able to afford rooftop solar panels that reduce metered usage, making them eligible for the lower rates. The table below illustrates how the higher usage upper tiers have seen rates nearly triple since 2001 while the lower tiers have experienced annual CAGRs below 2%.

Figure 1: Historic Residential Tiered Rates ¢/kWh (PG&E May 2013, SCE April 2013, SDG&E 2013)

Historic Residential Tiered Rates (¢/kWh) - Non-CARE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	CAGR 2001-2014
SCE																
Tier 1 (Baseline)	10.8	10.8	11.8	11.8	11.7	11.8	11.8	11.8	11.8	12.1	12.2	12.4	12.6	12.8	12.8	**1.3%**
Tier 2 (101% - 130% of Baseline)	12.7	12.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	14.0	14.2	14.3	15.5	16.0	16.0	**1.8%**
Tier 3 (131% - 200% of Baseline)	12.7	12.7	17.8	17.8	15.3	15.6	18.9	22.3	21.9	20.6	20.8	23.8	23.8	29.3	27.2	**6.0%**
Tier 4 (201% - 300% of Baseline)	12.7	12.7	21.4	21.4	17.1	17.0	22.7	31.2	25.4	24.1	24.3	27.3	27.3	32.8	31.2	**7.2%**
Tier 5 (> 300% of Baseline)	12.7	12.7	23.5	23.5	17.1	17.0	22.7	31.2	28.9	27.6	27.8	30.8	30.8	36.3	31.2	**7.2%**
PG&E																
Tier 1 (Baseline)	10.4	10.4	11.4	11.4	11.4	11.4	11.4	11.4	11.6	11.5	11.9	12.2	12.8	13.2	13.2	**1.9%**
Tier 2 (101% - 130% of Baseline)	12.0	12.0	13.0	13.0	13.0	13.0	13.0	13.0	13.1	13.1	13.5	13.9	14.6	15.0	15.0	**1.7%**
Tier 3 (131% - 200% of Baseline)	12.0	12.0	18.1	18.1	18.1	17.8	21.3	22.9	22.2	24.7	27.6	28.0	29.5	30.0	31.1	**7.6%**
Tier 4 (201% - 300% of Baseline)	12.0	12.0	22.5	22.5	22.5	22.0	29.0	32.1	30.5	35.4	40.6	39.0	33.5	34.0	35.1	**8.6%**
Tier 5 (> 300% of Baseline)	12.0	12.0	24.5	24.5	24.5	22.0	33.0	37.0	34.9	41.0	47.4	39.0	33.5	34.0	35.1	**8.6%**
SDG&E																
Tier 1 (Baseline)		12.9	13.4	14.1	13.8	12.9	12.9	12.9	12.9	12.9	13.4	13.8	14.3	14.8	14.8	**1.1%**
Tier 2 (101% - 130% of Baseline)		14.9	15.5	16.3	15.9	14.9	14.9	14.9	14.9	14.9	15.5	15.9	16.6	17.1	17.1	**1.1%**
Tier 3 (131% - 200% of Baseline)		14.9	16.4	16.5	16.8	17.0	20.1	23.6	19.5	31.1	27.2	28.1	24.8	26.5	34.3	**6.6%**
Tier 4 (201% - 300% of Baseline)		14.9	17.3	17.4	17.7	17.9	21.0	24.5	20.4	33.1	29.2	30.1	26.8	28.5	36.3	**7.1%**
Tier 5 (> 300% of Baseline)		14.9	19.0	19.1	19.4	19.6	22.7	26.2	22.1	33.1	29.2	30.1	26.8	28.5	36.3	**7.1%**

Source: California Public Utilities Commission (CPUC) Energy Division Staff Proposal 5/9/14

Naturally, solar companies have advocated for keeping at least three tiers to encourage the adoption of solar (Commissioner Florio's Alternative Proposed Decision includes three tiers). Some ratepayer advocates supported a two tier structure, noting that many customers, such as apartment dwellers and low-income, either cannot afford or cannot physically install solar panels.

Convergence with rate advocates and solar interests, for once?

<u>This thorny rate design issue effectively lends itself to a convergence between those advocating for lower income consumers, aligned with solar interests</u> which would like to see higher variable rates. Moreover, the convergence applies in the context of avoiding putting in place fixed tariffs on all customers, which here too, would have a disproportionate impact on low-income consumers. Furthermore, there is alignment on a minimum bill structure (vs the utility's preference for fixed charges within the bill) as well. The broader policy question remains whether should California implement such a structure, will *other* states with similar structures follow suit?

Figure 2: Summary of Current and Proposed California Rate Tier Structures

	SDG&E	PG&E	SCE
2012 GWhs sold (excluding low-income CARE program)			
Tier 1	3,425	13,193	10,132
Tier 2	670	2,455	2,162
Tier 3	1,031	3,477	3,303
Tier 4+	1,391	3,392	4,450
Tier 1	53%	59%	51%
Tier 2	10%	11%	11%
Tier 3	16%	15%	16%
Tier 4+	21%	15%	22%
Predicted % of kWhs sold after tier compression (non-CARE)			
Tier 1	63%	59%	51%
Tier 2	37%	41%	49%
Florio Alternative 3-Tier Decision (non-CARE)			
Tier 1	53%	59%	51%
Tier 2	26%	26%	27%
Tier 3	21%	15%	22%
Tier definitions % of baseline usage (current)			
Tier 1	100%	100%	100%
Tier 2	101%-130%	101%-130%	101%-130%
Tier 3	131%-200%	131%-200%	131%-200%
Tier 4+	>200%	>200%	>200%
Baseline is set at a % of average overall residential consumption			
% of average	55%	55%	53%
Tier definitions % of baseline usage (Proposed Decision)			
Tier 1	100%	100%	100%
Tier 2	>100%	>100%	>100%
Tier 3 (Florio Alt)	>200%	>200%	>200%
Current rate structure ($/kWh; excluding CARE)			
Tier 1	$0.148	$0.132	$0.128
Tier 2	$0.171	$0.150	$0.160
Tier 3	$0.337	$0.311	$0.272
Tier 4	$0.357	$0.351	$0.312
Average	$0.227	$0.189	$0.192
Est. Rate structure 2018 ($/kWh; Proposed Decision, excluding CARE)			
Tier 1	$0.241	$0.195	$0.199
Tier 2	$0.289	$0.235	$0.241
Est. Rate structure 2018 ($/kWh; Florio Alt Decision, excluding CARE)			
Tier 1	$0.193	$0.165	note (a) N/A; 1.00x
Tier 2	$0.271	$0.232	N/A; 1.33x
Tier 3	$0.387	$0.332	N/A; 1.77x

Source: UBSe, Company filings, ALJ 4/21/15 Proposed Decision Docket R.12-06-013, Florio Alternate Proposed Decision 5/22/15, Staff Proposal 5/9/14

(a) SCE Supplemental Filing, April 1, 2015, Attachment B, Scenario 3d. Note that SCE did not provide modeled rates for 2016-2018 in their run of Scenario 3d.

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Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%

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Company Disclosures

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
Edison International[2, 4, 6, 16]	EIX.N	Buy	N/A	US$57.52	08 Jun 2015
Sempra Energy[2, 4, 5, 16, 18]	SRE.N	Buy	N/A	US$103.04	08 Jun 2015

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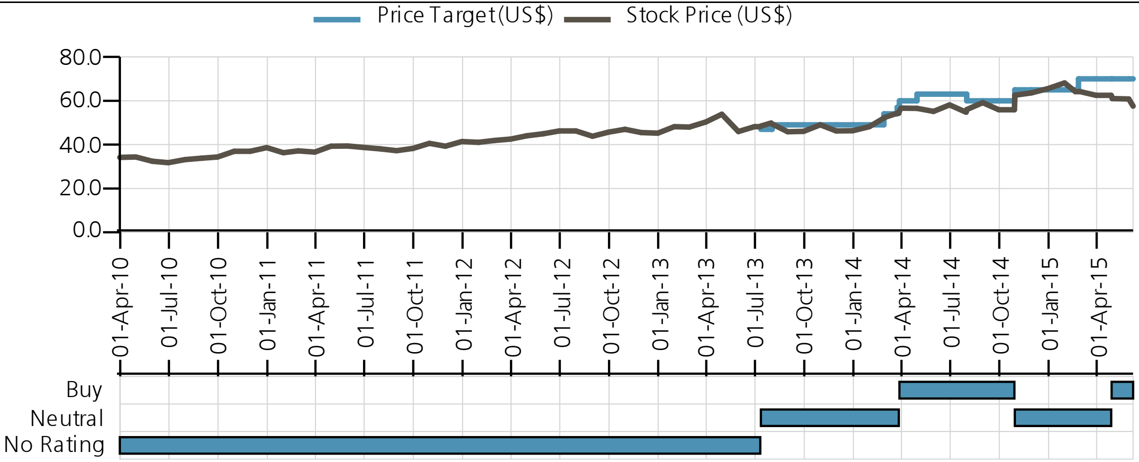

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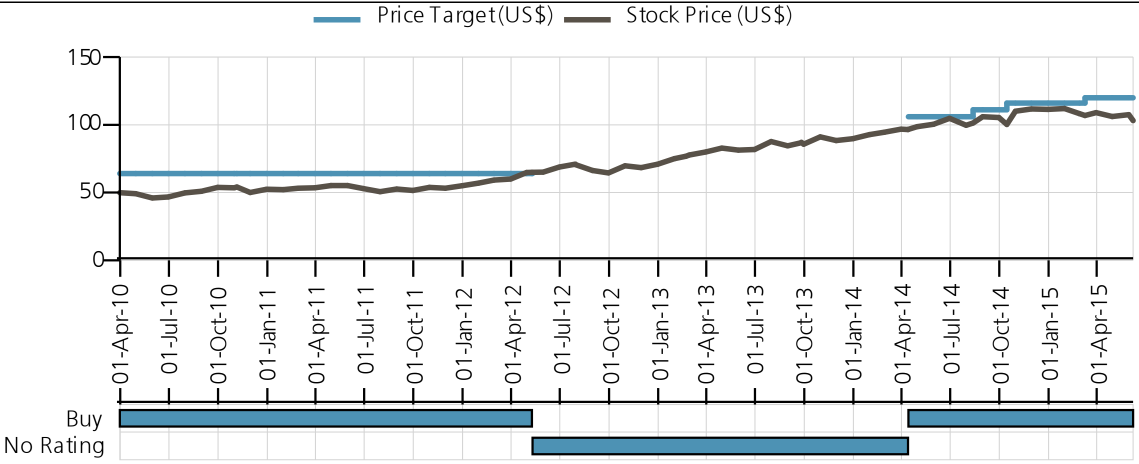
Sempra Energy (US$)



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