

From: Joe Orawczyk,

– a consumer

To: the FTC regarding the Competing and Consumer Protection Issues in Solar Power Workshop

## My SolarCity experience

I purchased a 2.65 kW DC photovoltaic (PV) system from SolarCity comprised of ten Kyocera model KU265-6ZPA (made in Mexico) PV panels in 2015. SolarCity did a great job installing the PV system on the roof of my home located in Yermo, California in late December of 2015. Southern California Edison (SCE) subsequently inspected and approved connection of the system to the grid and by mid-February 2016 I was finally generating most of my own electricity from the Sun. My SCE bill for April was \$3.26.

The system purchase price was \$13,515.00. The 30% (worth \$4,054.50) federal renewable energy tax credit played an important financial incentive in my decision to procure the system as it effectively reduced the total investment to \$9,460.50. This in turn reduces the time to breakeven by 30% as well and is a huge factor in committing to the purchase of a rooftop PV system from a financial perspective. And at my age of 53, it's a retirement investment too.

The way I figure it, this PV system will pay for itself in less than a decade. Once I retire, I'll enjoy a greatly reduced electric cost of living at a time when my income will also suffer a large reduction. While this was not a selling point suggested by the SolarCity sales representative, it was certainly a financial factor I considered.

A selling point the SolarCity sales representative did stress was electricity rates have historically increased and as such it seems safe to assume they will continue to do so. Thus, obtaining a rooftop PV system now will "grandfather" me in to the current net energy metering (NEM) policy's retail rates for 20-years regardless of what happens to utility rates in the future. See the image of my email conversation with the SolarCity sales rep on this point.

This assurance provided me, as a consumer, with a sense of stabilized surety in anticipating the cost of electricity for at least the next 20-years. I understood this to mean I was essentially purchasing most (or all) of the electricity I will consume over the next score for \$9,450.50 upfront cost regardless of likely rate increases during those years. Of course, that was before the devastating decision by the Public Utilities Commission of Nevada occurred. More on this later.

I do not believe the SolarCity sales rep was being deceitful here. More

RE: SolarCity Contract People

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**Jesse Mitchell** <...> 08/13/15 at 3:20 PM  
To: Mr Joe Orawczyk

Hey Joe,

ALL existing contracts will be grandfathered in so if your contract is 30 years, then it will be the same for you for 30 years ☺

Jesse Mitchell | Field Energy Consultant | SolarCity | T: | [www.solarcity.com](http://www.solarcity.com)

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**From:** Mr Joe Orawczyk  
**Sent:** Thursday, August 13, 2015 3:01 PM  
**To:** Jesse Mitchell  
**Subject:** Re: SolarCity Contract

Hi Jesse,

Looks like CPUC will have a new rule coming out in 2017, but if I buy a rooftop PV system now, I'll be grandfathered in for the next 20-years. But our contract is for 30-years. How will this effect my rate of return during the third decade?

<http://www.pressdemocrat.com/home/4325943-181/proposal-from-pge-other-utilities>

- Joe ;)

likely he was merely telling me what he believed to be true, probably because it is what his employer told him.

Other factors in my decision to invest in a PV system include reducing my carbon footprint for the benefit of society and life as we know it. I also find the thought of embracing an option other than a monopolistic utility very appealing. To me, distributed generation (DG) of renewable energy becoming available to consumers is a good thing because it injects competition into the free market. It provides consumers with options we didn't previously have.

I should note, originally I sought to commit to a SolarCity's "Solar Home Improvement Agreement, MyPower Solar Plan" loan purchase contract. However, upon reading the fine print, asking a lot of questions via email, and finally understanding the full cost of the 30-year loan with its contractual balloon payment and annual increases to the annual percentage rate of the loan, I opted to purchase the system outright. Doing so effectively cut the cost of the system nearly in half and reduced risk to my estate if the 30-year commitment outlived me.

Balloon payment, MyPower contract

Mark Boggress < > 08/16/15 at 3:02 PM  
To :  
CC Jesse Mitchell

Joe, good afternoon. Regarding our balloon payment for the MyPower contract, under California law, we cannot enforce this payment. Since we use 1 contract for all 17 states we are in, local state laws override. Please let Jesse know if we can be of any other assistance.

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Regards,  
Mark  
Mark Boggress | Regional Sales Manager | SolarCity | [www.solarcity.com](http://www.solarcity.com)

See how every SolarCity customer is helping communities, and improving the world, through our "Give Power" Foundation: <http://www.solarcity.com/givepower/>

Whenever you see our green truck, another neighbor is saving money with solar! 

Excerpt from actual contract conflicts with Mark's assurances:

The laws of the state where your Home is located shall govern this Agreement without giving effect to conflict of laws principles.

**14. ENTIRE AGREEMENT**  
This Agreement contains the parties' entire agreement regarding the Project. There are no other agreements regarding this Agreement, either written or spoken. Any change to this Agreement must be in writing and signed by all parties. Only an authorized officer of SolarCity may execute any change to this Agreement on behalf of SolarCity. If any portion of this Agreement is determined to be unenforceable or invalid, the remaining provisions shall be enforced in accordance with their terms or shall be interpreted or re-written so as to make them enforceable. Provisions that should reasonably be considered to survive termination of this Agreement shall survive. SolarCity may assign or subcontract any of its rights or obligations under this Agreement to any successor, partner or purchaser.

**15. WAIVER**  
Any delay or failure of a party to enforce any of the

price and any c  
of your Project  
personally ider  
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mailing it to: Si  
Opt Out, 3055

**18. ARBITRATION**  
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CLASS ACTION  
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The laws of the  
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exclusively by :  
The arbitrator

## Any system will be gamed

I've read through the FTC workshop announcement with interest. Before responding to direct questions contained therein, I offer this observation on the topic "marketplace" and "regulations" as a comment for your consideration:

Under Competition Issues, the FTC asks about anti-trust regulations being sufficient to police the industry, and the document often speaks to the "marketplace" and regulations. In response, the topic of Enron immediately comes to my mind.

David Freeman who served as Chair of the California Power Authority during the CA energy crisis testified at a congressional subcommittee on Consumer Affairs in part: "Electricity ... is a public good that must be protected from private abuse. If Murphy's Law were written for a market approach to

electricity, then the law would state 'any system that can be gamed, will be gamed, and at the worst possible time.' And a market approach for electricity is inherently gameable. Never again can we allow private interests to create artificial or even real shortages and to be in control."<sup>1</sup>

In other words, we cannot trust corporations to do what is right even when their representatives assure us we can. This is because those representatives lack the authority to demand their assurances are enforced and maintained. Such representatives may be very honest with the very best of intentions, but in a corporation there will always be others whose commitment to ethics is somewhat less than stellar.

In keeping with the old Reagan/Thatcher mindset toward privatization, many business people and a lot of politically conservative Americans, particularly in the media have repeatedly denounced government regulations as a hindrance to business interests and economic growth. In response, I've often posted on social media this observation of mine:

"Government regulations aren't written to harm business, rather they are written as a consequence of previous harm conducted under the guise of business."

Most regulations and laws seem to be reactionary rather than proactive. Consider, we didn't have a law saying limousines must have a pushout window for emergency exit until after four women burned to death in a limo.<sup>2</sup> Senate Bill 109 was the legislative reaction mandating emergency exit retrofit for charter carriers.<sup>3</sup> Cause and effect.

With this workshop however, the FTC offers regulators (as well as the rest of us) an opportunity to entertain proactive regulation before something unanticipated goes awry. Such regulation will best serve all interested parties as long as they satisfy a stated goal, are realistic, unencumbering beyond what may be necessary, and reasonable. Even then, regulations can be gamed.

For instance, why can't I use my roof or land to produce more electricity than I consume as a home business to supplement my income in anticipation of my eventual retirement? The reason appears to be the utility, in my case SCE, has somehow influenced public policy so as to restrict DG to a level of not more than is consumed by the homeowner who produces it. I say "somehow," because I've failed to discover any such law, regulation, or policy in writing. At least not during the time I purchased the system.

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## Is a home DG system allowed to produce over a 100% annual offset?

Among the documents I had to sign when procuring the DG system for my home was the SCE Net Energy Metering Solar and Wind Generation Facility 10kW or Less Interconnection Agreement (SCE form IA). Having read paragraph 12 Term and Termination of Agreement, it states in subsection 12.2 "This Agreement shall terminate, without notice, upon: (a) ... (b) changes to Customer's electric load which cause Customer to no longer satisfy all requirements of the definition of an Eligible Customer-Generator, as set forth in Section 2827(b)(4) of the California Public Utilities Code; or (c) ..."

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<sup>1</sup> Senate Hearing 107-1035 dated 15 May 2002, <https://www.gpo.gov/fdsys/browse/committeetab.action>

<sup>2</sup> <http://lasvegassun.com/news/2013/may/06/driver-fatal-limo-fire-misunderstood-warnings-abou/>

<sup>3</sup> [http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201320140SB109](http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB109)

So I looked up Section 2827 of the California Public Utilities Code<sup>4</sup> and learned subsection 2827(b)(4) states as follows:

2827. (b) (4) (A) "Eligible customer-generator" means a residential customer, small commercial customer as defined in subdivision (h) of Section 331, or commercial, industrial, or agricultural customer of an electric utility, who uses a renewable electrical generation facility, or a combination of those facilities, with a total capacity of not more than one megawatt, that is located on the customer's owned, leased, or rented premises, and is interconnected and operates in parallel with the electrical grid, and is intended primarily to offset part or all of the customer's own electrical requirements.

Subsection 2827. (b) (4) (B) (i) deals with prisons, and as such is not applicable to me. The same with the subsequent subsections of 2827. (b) (4) (B) (ii) thru (C) (v).

That said, please note the language in the subsection specified by SCE is lacking any language restricting the Customer from generating more than "all of the customer's own electrical requirements." I would expect the language to include a restrictive caveat to the effect of; "... and is intended primarily to offset part or all of the customer's own electrical requirements, but not to exceed all of the customer's own electrical requirements." OR; "... and is intended, but limited to primarily offsetting part or all of the customer's own electrical requirements."

In that such restrictive language is absent from this Code, it seems the SCE lacks the legal basis to exercise its implicit threat contained in the SCE IA paragraph 12.2 (b) simply because the Customer generates more electricity than "part or all" of its own requirements. This should be particularly true when the excess being generated by the Customer's system is inconsequential, meaning only a small percentage above and beyond "all" of its own requirements.

Furthermore, I would argue, absent said restrictive language, the existing language specifically stipulates "...with a total capacity of not more than one megawatt," meaning the SCE lacks a legal basis to restrict an eligible customer-generator to produce more than what it consumes, so long as what is generated remains at or below one megawatt. Whether doing so violates residential zoning laws is beyond the scope of this workshop.

However, the SCE IA itself is titled in part; "... 10 kilowatt or less interconnection agreement", which makes clear SCE's intent to use this form agreement to restrict generation capacity to 10kW or less. So if my system is designed to produce around 3kW, then is it expandable to something closer to 10kW without SCE having the ability to challenge such expansion under subsection 12.2 of the SCE IA? Is this an option, and if not, why not? SCE has denied interconnection in some instances where the installed system produces over 100% offset.<sup>5</sup>

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<sup>4</sup> [http://www.leginfo.ca.gov/.html/puc\\_table\\_of\\_contents.html](http://www.leginfo.ca.gov/.html/puc_table_of_contents.html)

<sup>5</sup> <http://www.nbclosangeles.com/news/local/Solar-Panel-Too-Much-Power-Energy-Retailer-323024971.html?partner=nbcnews>

After all, if we consider the stated intent and goals of the State Legislature as stipulated in the Public Utilities Code Subsection 2821., then creating a home business that generates up to 10kW should be encouraged rather than constrained. Here are those stipulated goals and intent:

2801. The Legislature hereby finds and declares that in order to promote the more rapid development of new sources of natural gas and electric energy, to maintain the economic vitality of the state through the continuing production of goods and the employment of its people, and to promote the efficient utilization and distribution of energy, it is desirable and necessary to encourage private energy producers to competitively develop independent sources of natural gas and electric energy not otherwise available to California consumers served by public utilities, to require the transmission by public utilities of such energy for private energy producers under certain conditions, and remove unnecessary barriers to energy transactions involving private energy producers.

Upon bringing this to the attention of the SolarCity sales representative as well as their regional sales manager, they were unable to provide an answer to this question of why a consumer is limited to 100% offset, or by what law said limit is set. There was speculation the grid can handle a reduction in demand by the offset of 100% or less, but it may not be able to handle above 100% offset if everyone were doing so. Such argument lacks representative merit considering the likelihood of “everybody” (or even half of everybody) served by a given substation will cause the installation of DG is nil.

I would speculate the real reason the consumers’ offset is limited to 100% is to protect the financial interest of the existing utility business model. An argument based on business model economics to help maintain and stabilize the existing energy market as it may transition to DG does have merit. It seems reasonable to me the California Public Utilities Commission (CPUC) and the politicians providing oversight would be inclined to accept the merits of this argument as they form public policy regarding DG.

As for the law the said offset limit is set, at least here in California, I found Chapter 7, Article 2 titled Interconnection of Facilities under Subsections 2811-2816 to be pertinent. While the term “offset” is absent from the language in this Article, Subsection 2812.5 appears to answer my question; to wit:

2812.5. Upon application of a private energy producer, and after notice to any affected public utility and hearing thereon, the commission shall authorize such producer to construct an interconnection for the purpose of transmitting electricity, if the commission finds:

- (1) That no uncompensated burden will be placed upon the utility or utilities furnishing the transmission service.
- (2) That furnishing the transmission service will not result in any added costs or any other adverse consequences for the customers of the electrical corporation.
- (3) That the facilities proposed in the application will be used to transmit power from other than a conventional power source for generating electrical power.

The commission shall prescribe such reasonable terms, conditions, and requirements as it deems appropriate.

2812.5 (1) and (2) are interpreted by me, as a consumer of electricity from the grid and as a producer of DG to the grid, that this language exists to protect the utilities' business model. Under current net energy metering (NEM) policy set by the CPUC, consumers with DG and an active interconnection agreement with their utility are compensated at the retail rate, at least until 2019. If I were to produce more than 100% offset of my home's annual consumption, then the utility could argue this places an "uncompensated burden" on it and could create an "adverse consequence" if everybody did it.

It is the last sentence of 2812.5 after (3) that serves as the catchall language empowering the CPUC to modify the NEM policy whenever and however "it deems appropriate."

I'm not sure how to make this clear to consumers who are entertaining the idea of obtaining DG for their home. It took me months to figure it out on my own (and 1,200 words over the prior 3 pages of text to explain it here) as the marketing people at SolarCity were, and I imagine continue to be uninformed on this topic. It would be helpful to consumers if the FTC will provide a simple answer under its Frequently Asked Questions website page to the question of; "Is a home DG system allowed to produce over a 100% annual offset?" The answer will need to include justification.

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## PUCN decision destabilizes the DM market

Speaking of consumers who are considering a DG system for their home or small business, the Public Utilities Commission of Nevada (PUCN) decision<sup>6</sup> in late December 2015 had a chilling effect on the DG industry, particularly from the perspective of the informed consumer. It proved the existing NEM policy is not written in stone. It is subject to change at the seeming whim of commissioners appointed by politicians who are influenced by concerns of their political action committee contributors. The Republican Governor of Nevada received more financial contributions from the utilities than from the DG industry.<sup>7</sup> But this proves nothing.

Nor does any arguable conflict of interest existing between the newly appointed chair of the PUCN Paul Thomsen, who was employed by Ormat [geothermal] Technologies, Inc. as a lobbyist between 2009-2013, being married to Jessica E. Bantham-Thomsen, who is Senator Harry Reid's Deputy Regional Manager. How a lobbyist qualifies to chair the PUCN in the eye of the governor who appointed him is also questionable. And now the U.S. Department of Energy has announced it is funding Ormat Tech geothermal research to the tune of up to about \$4-million.<sup>8</sup>

What these connect-the-dots arguments do however, is provide an appearance of irregularity or corruption where none likely exists. This damages the public trust by innuendo and assumption. It also strengthens the implication unpopular decisions of the PUCN were improperly influenced by suspected

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<sup>6</sup> <http://www.utilitydive.com/news/nevada-regulators-approve-new-net-metering-policy-creating-separate-rate-c/411284/>

<sup>7</sup>

<https://nvsos.gov/SOSCandidateServices/AnonymousAccess/ViewCCEReport.aspx?syn=yPAJPRrbKlpZjrXbrSqAPg%253d%253d> and search for "Solar," "SunRun," and "Energy."

<sup>8</sup> <http://energy.gov/eere/articles/nevada-site-home-geothermal-community-focused-expediting-research-and-development> and <http://energy.gov/articles/doe-funds-21-research-development-and-demonstration-projects-78-million-promote-enhanced>

personal financial gain and ex-parte communications<sup>9</sup> with corporate lobbyists, even absent proof of such.

What is certain is the PUCN decision undermines existing contracts between solar customers and installers of third party owned (TPO) solar systems like SolarCity. The 20-year or longer leasing agreements are sold based on the NEM retail rate. And the DG customers entered into those contracts based in large part on the selling point of the NEM retail rate. Apparently such commitment offered by the DG industry is a promise they are powerless to keep. The PUCN decision is perceived by the DG customer as a bait-and-switch scheme, which serves the interest of the existing utility business model. For many (if not most) consumers, the whole situation fails the smell test.

The other certainty, as evidenced by the PUCN decision, is NEM policy is not permanent. The DG sales and marketing people either don't know NEM is temporary at best and is subject to change at the whim of a state authority, or simply allow the consumer to assume the current net metering regulation will be here for the life of their PV system. If it's the latter, then it is a lie through omission. And if it is the former, then it is incompetence of the employer in educating and training its sales staff – probably by design. Knowledge is power (over the ignorant). This consumer ignorance serves the interest of the DG industry, as it can for any industry's sales and marketing departments.

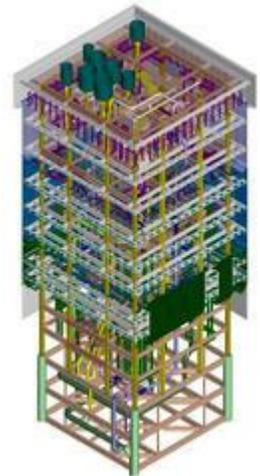
Apparently the Governor of Nevada is revisiting the PUCN decision after only 30 rooftop solar applications were received in February and March of 2016, down from over 1,300 the month before the PUCN decision, and may reverse it.<sup>10</sup>

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## Beyond industrial concerns to a glimpse at national security

Ultimately these regulatory changes perceived by the average consumer as bait-and-switch schemes creates volatility and instability in the emerging DG industry, which serves the interest of the existing utility business model, but at the expense of the stated goals of legislatures responding to the negative effects of climate change. And climate change is not simply a matter of concern to cactus huggers like me here in the Mojave Desert – climate change is quickly becoming a top concern for our national security.<sup>11</sup>

Having served in the Marine Corps with honor, I'm not your average cactus hugging activist. I look at the vast fields of heliostats reflecting sunrays to a



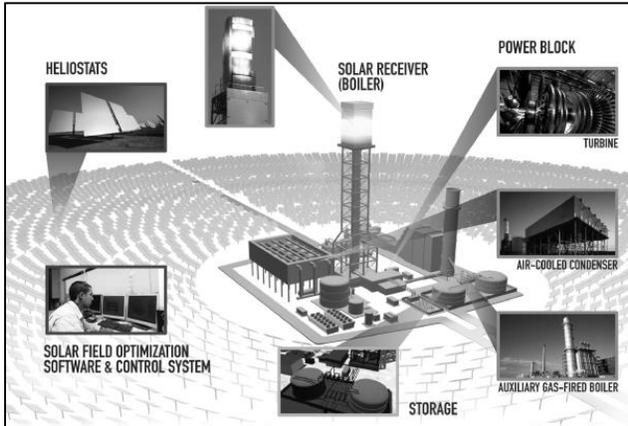
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<sup>9</sup> <http://www.reviewjournal.com/news/nevada/solar-company-sues-sandovals-office-over-refusal-release-text-messages>

<sup>10</sup> <http://www.utilitydive.com/news/nevada-governors-task-force-committee-recommends-grandfathering-rooftop-so/419527/>

<sup>11</sup> Finding from Select Federal Reports: The National Security Implications of a Changing Climate [https://www.whitehouse.gov/sites/default/files/docs/National\\_Security\\_Implications\\_of\\_Changing\\_Climate\\_Final\\_051915.pdf](https://www.whitehouse.gov/sites/default/files/docs/National_Security_Implications_of_Changing_Climate_Final_051915.pdf)

steam generator<sup>12</sup> atop a power tower at the BrightSource facility in Ivanpah Valley near Primm, Nevada as a heck of a wonderful terrorist target. What would a few well-placed shots from a high powered rifle



do to those three Solar Receiver Steam Generators (SRSRG)?<sup>13</sup> What would the loss of the facility in mid-summer do to the California economy? DG effectively eradicates this threat.

Other soft targets, as described in Ted Koppel's book *Lights Out*,<sup>14</sup> may include a cyberattack over the Internet of the field optimization software and control system.

Of course it need not be a terrorist with a rifle. It could be some kids taking pot-shots at wind

turbines. Or actions of a disgruntled employee.

Even a depletion of groundwater from the aquifer supplying water to the SRSRG could cause a project like the BrightSource facility to fail, leaving the mess for taxpayers to clean up while the shareholders of the foreign company are protected by virtue of the project being underwritten by the federal stimulus program. This is not as farfetched as it may seem, considering results of NASA's ten-year experiment using the Gravity Recovery and Climate Experiment (GRACE) satellite indicates the Earth is running out of groundwater.<sup>15</sup> Regardless, these concerns are also eradicated by DG. DG promotes energy security.



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## The Death Spiral<sup>16</sup> and the fairness argument

I could bore you with pages of text from this layman's perspective of why both the Edison Electric Institute's paper *Disruptive Challenges*<sup>17</sup> and utilities use of the fairness argument to influence public policy and regulations are absent merit. Instead permit me to direct you to the paper *Solar Energy*,

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<sup>12</sup> <http://www.brightsourceenergy.com/brightsource-energy-signs-boiler-agreement-with-riley-power#.VvjfrYQrJhE>

<sup>13</sup> "Given that the boiler is only 54' square, there is minimal room to route piping and fit supporting equipment." [http://www.energy-tech.com/turbines\\_generators/article\\_b38acbf3-2aa2-524f-8f76-42658d611f82.html](http://www.energy-tech.com/turbines_generators/article_b38acbf3-2aa2-524f-8f76-42658d611f82.html)

<sup>14</sup> <http://tedkoppellightsout.com/>

<sup>15</sup> <http://onlinelibrary.wiley.com/doi/10.1002/2015WR017349/abstract>

<sup>16</sup> From the Edison Electric Institute paper *Disruptive Challenges* by Peter Kind; <http://www.eei.org/ourissues/finance/documents/disruptivechallenges.pdf> (page 18)

<sup>17</sup> Ibid

*Utilities, and Fairness*<sup>18</sup> by Law Professor Troy A. Rule<sup>19</sup> in which “This Article analyzes the primary fairness arguments that utilities are leveling against net metering programs and electricity rate designs as rooftop solar energy expands across the country.” ... “The Article ultimately argues that general appeals to fairness are detrimental in policy debates involving distributed solar energy. Shunning fairness arguments in favor of clearer, more specific arguments would benefit decision-makers as they search for solutions to the complex policy challenges associated with transitioning to a more sustainable electricity system.” Please take the time to access, download, and read it, as I’m confident you will find it informative and helpful to resolve your task at hand.

Also consider California Net Energy Metering Ratepayer Impacts Evaluation<sup>20</sup> commissioned by the CPUC, which determined any cost shift is insignificant. Thus the fairness argument lacks virtue. Particularly so because even this report observes it “does not include the overall societal benefits from the deployment of clean energy resources, although significant environmental, public health and other non-energy benefits occur.”

The CPUC commissioned report is just one of many, as described by the Brookings Institute that determine *Net metering is a net benefit* to all stakeholders, and particularly to non DG ratepayers.<sup>21</sup>

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## Mitigating Time of Use Rates through Storage and New Demand Charges

After the CPUC adopted the utility industry’s proposal to move toward time of use (TOU) rates, I looked into the idea and learned doing so will shift the high demand period of the day from when rooftop PV generates the most to an hour or a few hours later in the day resulting in increased revenue to the utilities from DG producers like me. When I sought to mitigate this increase by purchasing a Powerwall battery system to “load shift” my own use, I discovered SolarCity does not sell Powerwall products to residential DG customers. The company only offers its Powerwall to residential customers through its lease agreement and power purchase agreement.

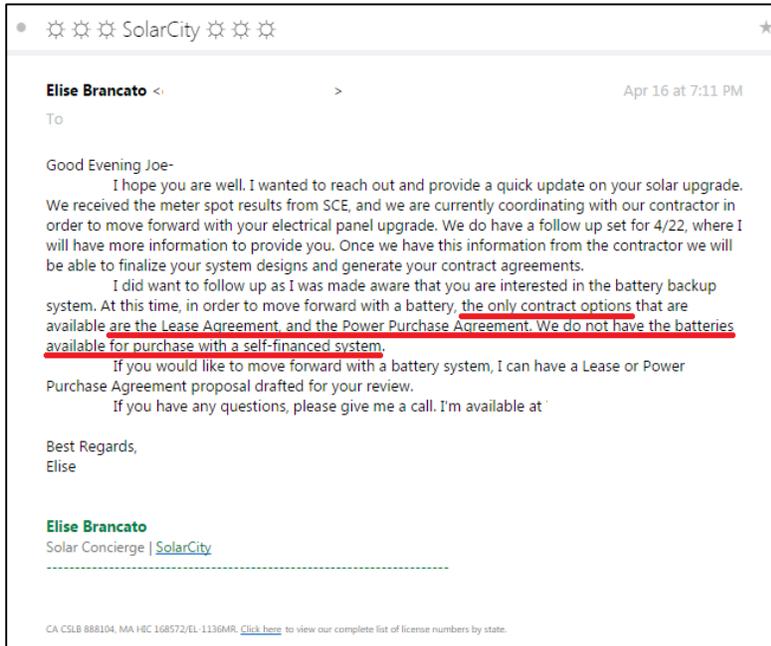
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<sup>18</sup> [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2540446](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2540446)

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<sup>20</sup> <http://www.cpuc.ca.gov/workarea/downloadasset.aspx?id=5724>

<sup>21</sup> <http://www.brookings.edu/research/papers/2016/05/23-rooftop-solar-net-metering-muro-saha>



This limits the consumer’s options to partake in the so called “free market.” And I’m not sure what would happen to my 30-year warranty with SolarCity for the DG system they installed on my roof if I were to modify it by incorporating a battery backup system from some other vendor. I’ve asked them by email but to date they’ve been non-responsive to my inquiry.

The CPUC also adopted the utility industry’s proposal for a \$10 per month demand charge of every utility customer. However, that fee is waived in proportion to the amount of electricity the customer

consumes during the month beyond what the customer may produce. In other words, a non-DG utility customer will have this fee absorbed in their regular bill assuming they consume at least \$10 worth of electricity during the month. But as a DG producer, I’m guaranteed to be billed at least \$120 per year regardless of how much electricity I produce.

As the TOU shifts the peak-period timing to later in the day when PV suffers a reduction in efficiency and thus a reduction in NEM compensation, and as new fixed monthly demand charges combine with that shift, they will radically erode the current monetary incentive for consumer adoption of DM.<sup>22</sup> Both TOU and Demand Charges appear to have been adopted to satisfy the mock fairness argument discussed above. And both serve the utility business model at the expense of the fledgling DG industry and climate change response goals.

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## Current State of the Solar Industry

The amount of solar electricity generation has grown enormously in recent years. In this workshop, the Commission intends to explore the sources of this growth, and to facilitate a discussion regarding the anticipated evolution of the industry. The Commission invites public comment on questions relevant to this topic, including:

- How much solar electricity was generated in the U.S. in 2015? A: 0.6%<sup>23</sup> How does that compare to 2005? 1995? A: A whole lot less than in 2015.<sup>24</sup> How much solar generation can reasonably be projected

<sup>22</sup> [http://www.seia.org/sites/default/files/resources/lbni-183185\\_0.pdf](http://www.seia.org/sites/default/files/resources/lbni-183185_0.pdf)

<sup>23</sup> <https://www.eia.gov/tools/faqs/faq.cfm?id=427&t=3>

<sup>24</sup> [https://www.eia.gov/electricity/monthly/epm\\_table\\_grapher.cfm?t=epmt\\_1\\_1](https://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_1_1)

for 2025? Probably a lot more than in 2015, but whatever the estimate is, it will suffer a reduction following the decision by the PUCN, which served to destabilize consumer trust in assurances of grandfathering NEM programs.

- Is the growth coming primarily from solar DG? 51% of all new electric generating capacity in the U.S. came from solar in the first quarter of 2015.<sup>25</sup> But most of this was utility-scale installations.<sup>26</sup> Is growth in solar DG being driven by residential, commercial, or community installations? I don't know. Are utility-scale installations of solar generation growing as well? Yes. "Growth remains driven primarily by the utility solar PV market, which installed 1.5 GWdc in Q4 2014, the largest quarterly total ever for any market segment."<sup>27</sup> Utility-scale solar dominates the demand for solar.<sup>28</sup>
- How does the cost of solar DG compare with the costs of other sources of generation, including utility-scale solar installations? You can find the current analysis at the National Renewable Energy Laboratory website.<sup>29</sup>
- What are the cost components of solar DG? How fast is the cost of solar PV panels decreasing? What about installation costs? Are those costs likely to continue decreasing? I don't know.
- Does DG impose additional costs on the grid because of, e.g., changes in how the grid is used, integration costs, and/or overloading of local circuits? At less than 1% of U.S. electric generation coming from DG, any such costs are insignificant. How can we calculate these additional costs? To be fair, any calculations must include consideration of savings to society and the consumer of costs external to the utility market model, such as less carbon, reduced pollution, increased health benefits, economic benefits related to increased state revenues from increased property values, increases to local employment in the DG markets that cannot be shipped overseas, and the increase of income taxes those jobs provide to our government, sales of vehicles, tools, equipment, material, food, fuel, etc. to support the DG market workers and staff, sales taxes from those sales as increased revenue to local governments, etc., but also benefits to endangered animals, cultural items, public lands, and our environment as a whole where DG offsets fossil fuels and remote utility-scale facilities. Calculations that focus only on the utility market model support a false argument.
- Does DG save costs compared to other sources of generation because DG is placed more closely to the point of consumption? Yes! Some electricity is lost to resistance, shorts, and ground faults over great distances of transmission. How much electricity is generated at Hoover Dam, and how much is actually received by the SDG&E? The difference is the loss in transmission. How can we value these cost savings?
- What other benefits does solar DG provide to the grid? For example, does solar DG improve power quality, reliability, and/or resiliency? For the typical non-DG consumer of the grid, when their neighbors install DG resulting in less demand on the grid, there is a reduction in the justification of utilities to claim a need for additional electric generation facilities or additional transmission lines. This helps all

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<sup>25</sup> <http://www.seia.org/research-resources/solar-market-insight-report-2015-q1>

<sup>26</sup> <http://www.seia.org/news/us-solar-market-set-grow-119-2016-installations-reach-16-gw>

<sup>27</sup> <http://www.seia.org/research-resources/solar-market-insight-report-2014-q4>

<sup>28</sup> <http://www.seia.org/blog/demand-utility-scale-solar-still-dominating>

<sup>29</sup> [http://www.nrel.gov/analysis/tech\\_lcoe\\_re\\_cost\\_est.html](http://www.nrel.gov/analysis/tech_lcoe_re_cost_est.html)

consumers reduce their risk to increasing utility costs for new infrastructure. **How can we value these benefits?**

- **What are the environmental benefits and costs of solar power?** You mean besides delaying the mass extinction of most life as we know it, perhaps to include our own thanks to climate change? Well, let's see; instead of asking what are the environmental effects of solar, let's consider the concept of how delaying mass extinctions and maintaining the food chain will extend the utility-scale business model for a few years so they can make more money. Corporate business is so focused on short term profits, it is expediting its own demise. Saving the environment will prolong the utility business model, along with the lives and economic concerns of the rest of us.
- **What are the subsidies for solar DG at the federal and state levels?** There is currently a 30% federal renewable energy credit, which will be phased out over the next few years.
- **What other technologies (e.g., battery storage of solar-generated electricity) are relevant to the future of solar DG?** "The fact that *some* customers will be able to cut the cord doesn't mean they *all* will. Think of all the apartment buildings, urban homes, hospitals, office buildings, high rises, and factories that don't have enough onsite space to host a solar system. Even in a situation where cost-effective storage exists, it's likely that somewhere around 70%-80% of electric customers who will still depend on the grid for reliable power."<sup>30</sup> Also consider SolarCity does not offer its Powerwall battery storage as an option when residential DG consumers purchase their rooftop PV system, as discussed earlier in my comments. Apparently the "free market" has company imposed restrictions.

## Net Metering: Pricing Solar DG at Retail

In many states, utilities that sell electric power to retail customers are required to compensate these customers for customer-generated power. In this workshop, the Commission intends to explore the various regulatory approaches to compensating customers for this power. The Commission invites public comment on questions relevant to this topic, including:

- **Is net metering good policy?** If NEM serves as an effective means to obtain a desired goal, then yes, it is a good policy. **At the retail rate or at a different rate?** Here again, the choice of retail or wholesale rates depends on which choice best serves to obtain a desired goal. If the goal is to increase consumer investment in DG and the retail rate provides a better economic motive than a lower NEM rate would, then the answer is self-evident. Ignoring the effects of climate change are tantamount to a utility business model imposed path to self-destruction and suicide.
- **Does retail net metering result in cross-subsidization?** For example, if the fixed costs associated with building and maintaining the electricity grid are incorporated into the price per kilowatt hour (volumetric pricing), do non-solar customers end up cross subsidizing solar DG customers because the latter do not pay a full share of fixed costs when they choose to rely on self-generation? No. This cross-subsidization allegation is a false argument discussed in detail in my comments above.
- **Does cross-subsidization of one form or another always occur when retail rates are based only on volumetric charges and are time-invariant?** Arguably, yes. E.g., consider if the cost of electric transmission increases with distance, and both the consumer close to substation and distant to the

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<sup>30</sup> <http://www.seia.org/blog/why-dg-world-needs-grid-more-ever>

same substation pay the same rate, then the one close to the substation is arguably subsidizing the distant one. Does cross-subsidization caused by net metering differ in any way from other forms of cross-subsidization inherent in regulated retail rates? Not really. This is discussed in detail in the paper *Solar Energy, Utilities, and Fairness*<sup>31</sup> by Law Professor Troy A. Rule.<sup>32</sup>

- Does it make sense for PUCs to target net metering for reform, or should they focus on reforming retail rates more generally to better reflect the varying costs of supplying electric power? Here again it depends on the end goals. If the goal is to protect the existing utility business model from a free market open to competition from DG providers then fixed demand charges and reduced NEM makes sense. If the goal, as stipulated by various legislative and government entities is to respond appropriately to climate change, then no, it does not make sense to dissuade the average consumer from investing in renewable DG via perceived (or actual) financially punitive policies.
- Is there a way to prioritize among various reforms? Potential reforms may include a “value of solar” [VOS] tariff; dual metering/net metering at something other than the retail rate; fixed charge reforms; smart meters/time-variant pricing. Any time someone introduces a scheme which tends to complicate how rates are applied resulting in consumer obfuscation, it is fair to assume they are doing so to game the system for the benefit of their employer. The consumer is best served and best protected when regulators embrace the keep-it-simple-stupid (KISS) methodology. Among the objections to a VOS tariff is “The recalculation of the VOS rate on an annual basis can produce revenue uncertainty for PV owners.”<sup>33</sup> This tends to discourage consumers from investing in DG at the benefit of the existing utility business model. Once again, any schemes offered for consideration must first answer how they serve existing goals.
- Does the analysis change when the distribution utility is vertically integrated? When the utility is investor-owned, municipally-owned, or a co-op? Yes.<sup>34</sup> When consumers have retail choice? Yes. Then completion in a free market provides best cost comparisons. When retail pricing is time-variant? Yes. These topics are discussed in various white papers, reports, and studies including those mentioned above and linked in my footnotes.
- To what extent does the optimal approach depend on penetration levels for solar DG? I don’t know.
- Should environmental externalities affect retail pricing? Yes!

## Competition Issues

DG may be a competitive alternative to utility-sourced electric power for some customers. Whether consumers can benefit from this competition depends on a number of factors, including the extent to which solar DG firms face entry barriers, whether sufficient competition exists among such firms, and whether utilities can use revenues from regulated sales to offer solar DG. In this workshop, the

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<sup>31</sup> [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2540446](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2540446)

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<sup>33</sup> [http://www.nrel.gov/tech\\_deployment/state\\_local\\_governments/basics\\_value-of-solar\\_tariffs.html](http://www.nrel.gov/tech_deployment/state_local_governments/basics_value-of-solar_tariffs.html)

<sup>34</sup> <http://www.utilitydive.com/news/new-hampshire-co-op-rolls-out-slate-of-peak-management-programs/417547/>

Commission intends to explore the competitive landscape in solar DG. The Commission invites public comment on questions relevant to this topic, including:

- **Is solar DG a competitive threat to distribution utilities?** It seems so considering DG reduces utilities' revenues. **Does this depend on whether the distribution utility owns generation assets?** No. However, it does depend on whether utilities can create and own a subsidiary company that manufactures and sells its own DG products and services. From the standpoint of the average consumer, I don't care if I invest in a DG system produced and installed by SolarCity or Southern California Edison. I don't care what company earns a profit from my purchase. I care about reducing my long-term costs and climate change.
- **How does regulation affect entry decisions by solar DG firms?** Stability of regulations encourages entry decisions by solar DG firms and volatility discourages it. **What regulatory policies support or discourage entry?** Stable and volatile ones.
- **Are there barriers to entry not related to regulatory policies?** Yes. If so, is antitrust enforcement an appropriate tool to address them? Probably.
- **If regulatory policy affects entry conditions, is there a role for antitrust enforcement or competition advocacy to encourage entry?** I don't know. **Is antitrust an appropriate tool to police efforts by utilities to maintain or strengthen regulatory barriers to entry from solar DG firms?** I assume it is one tool of many. As such, it is one option of many. Every tool should be considered for use to obtain a desired goal. **Can such efforts by utilities be characterized as exclusionary conduct under the antitrust laws?** An argument can be made, but it is beyond me to determine the answer to this question. **Or is regulation the preferred tool to shape electricity distribution going forward?** Regulations are not written to harm business, rather regulations are typically written as a consequence of harm conducted under the guise of business. As such, regulations tend to be reactionary rather than proactive. **Are regulated distribution utilities protected from antitrust suits through any immunity or exemption?** I hope not. **Should they be?** No.
- **Should utilities be permitted to offer rate-paying customers utility-supplied solar PV panels or access to community solar installations?** Yes. **Does it make a difference if, instead, it is an unregulated subsidiary or affiliate of a regulated utility that is offering the solar PV panels?** Not to me. But if the DG industry is regulated or unregulated, then it should be standardized throughout the industry. **Are anti-discrimination rules for utility affiliates effective in achieving a competitive landscape?** Won't know until it's tested.
- **What is the state of competition among solar DG firms?** I don't know. Personally, I prefer a large company that will be here for years to come in order to increase the likelihood their warranty has value, as opposed to the mom-and-pop DG companies I presume will be gone tomorrow. **Are there geographic areas where competition is particularly lacking between solar DG firms?** Probably.
- **What is the state of competition between solar DG firms and regulated utilities?** DG firms represent a tiny fraction of our nation's electric generation. Utilities are the gorilla in the room. **How is competition affected by whether the utility offers distribution service only, electricity supply only, or both?** By offering both, utilities can better compete in the free market.

- How is this competition affected by the fact that regulated utilities earn revenues that are based, in part, on regulated rates of return? Apples and oranges. The regulated rates of return for a monopolistic service is not the same as circumstances where a utility or its' subsidiary is entering the DG market.
- How do consumer protection issues such as comparative price information or disclosures of regulatory risk affect competition among solar DG firms and competition between solar DG firms and utilities? Absent full disclosure of regulatory risk, as I've discussed in detail involving the PUCN decision that destroyed the DG industry in Nevada, the consumer suffers from a lie through omission. SolarCity sales reps seem to skew price comparisons between the DG options available and utility rates in order to make a sale rather than to inform the consumer.

## Consumer Protection Issues

Until recently, the only realistic option for consumers seeking to generate solar power was to buy and install solar PV panels themselves. In recent years, solar DG has grown in part because companies have entered the marketplace to offer consumers various leasing, financing, or power purchase agreements that do not require the same up-front capital as purchasing the panels outright. A well-functioning marketplace requires that consumers have access to the information necessary to weigh the financial costs and benefits of the various options for installing solar PV panels. In this workshop, the Commission intends to explore these and other consumer protection issues in solar DG. The Commission invites public comment on questions relevant to this topic, including:

- How do consumers obtain information about installing solar PV panels? It depends on how inquisitive individual consumers are. Most probably accept the sales pitch and marketing information provided by the DG company representatives at face value.
- What information is most important to consumers' decisions to install rooftop solar? The bottom line cost comparison of the options available. For instance, the DG company could provide on a single sheet of paper the end total cost of upfront purchase, leasing, financing, and power purchase agreement. Understanding the risks and benefits of each option should also be fully disclosed, including regulatory risks.
- What information is available about regulated retail electricity rates? Not much. I had to have the sales representative call my utility to request this information, and I had to provide my Social Security Number over the phone before the utility representative would release the information. What are solar DG firms telling consumers about expected future retail rates? "Historically, retail utility rates almost never decrease, but they sure have a strong history of increases. It's fair to expect this trend to continue." Or words to that affect.
- Who typically assumes the risk that regulators in a given jurisdiction will change net metering and/or reform compensation rates paid for solar DG – consumers or solar DG firms? Consumers. DG firms come and go, but consumers, particularly homeowners tend to be a captive of the utility monopolies. DG firms should consider adding contract language to guarantee their product will be cost effective in order for the DG firm to absorb the risk of unanticipated regulatory changes, rather than simply make promises based on assumptions, such as "Buy it now and you'll be grandfathered in for the next 20-years."

- Do consumers understand the payments they will make for solar PV panels and electricity, based on whether and how they finance or lease a system, or obtain a power purchase agreement? Generally no. After reading the first SolarCity contract, which caused me to ask many questions the sales rep referred to his regional sales manager, I asked the manager if anyone ever reads these contracts before signing them and he conceded “Usually not. Maybe two or three out of a hundred customers bother to read it.” Do consumers understand whether their payments may escalate under some agreements? SolarCity was fairly upfront about this in the original contract offer and the sales pitch that preceded it. But I’ve no idea about how other companies operate or deal with this.
- Do consumers understand any permissions that may be needed to install rooftop solar? I think I did, but I can’t speak for other consumers. I doubt many other consumers have (or had) a clear understanding of this and many other risks involved unless they took the time to self-educate themselves over months of personal research.
- Do consumers understand the implications of having rooftop solar if they sell their homes, including disclosures to prospective homebuyers? Not really. If it’s a leased system, it invites unanticipated problems.<sup>35</sup> Do solar DG firms make disclosures about how a home sale may affect the consumer’s contract for solar generation? The sales representative said the investment would increase the value of my home. This is true in the short term, but in ten or twenty years, this may pan out to be less than accurate. Should they be required to make such disclosures? Yes. Do the disclosures vary depending on whether the consumer purchased or leased the solar PV panels or used a power purchase agreement, and depending on the specifics of how the consumer is compensated for the electricity he or she generates? Of course. Every variable has a cause and effect. If so, how and why? Each product differs, and thus disclosures will differ too. Consider what disclosures are appropriate if the product being sold is toothpaste or cigarettes.
- Do consumers or solar DG firms bear the risk of structural damage to homes from solar panel installations? I was assured by the SolarCity sales representative that it would cover costs for any damage to my home resulting from installation of their product. However, the word “damage” appears only twice in the contract and in both instances it refers to damages to their system, not my home. What is needed for clear and conspicuous disclosures about damage or loss relating to rooftop solar? Probably a regulation requiring it.
- What gaps are there in information for consumers and businesses that are considering rooftop solar? There is a lack of information regarding consumer risks involved.
- Is it standard practice for solar DG firms to retain renewable energy credits (RECs) when selling or leasing solar PV panels to consumers? It is for leasing and power purchase agreements but not for retail sales. SolarCity collected over a billion dollars in government subsidies.<sup>36</sup> Do solar DG firms make disclosures to consumers concerning the sale of RECs on a secondary market? The sale of RECs on a secondary market? I’ve not heard of such a thing. If this is an option for SolarCity, I do not recall it being

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<sup>35</sup> <http://news.heartland.org/newspaper-article/2015/05/12/solar-panel-leasing-scheme-threatens-home-ownership>

<sup>36</sup> <http://www.cnsnews.com/news/article/barbara-hollingsworth/oregon-ag-probing-use-state-tax-credits-solar-power-project>

disclosed to me either by their representative or in the contract language. **Is information about RECs material to a consumer’s decision to install rooftop solar?** It was for me.

- **What types of disclosures are solar DG marketers or others providing to consumers?** Generally speaking, most disclosures made by either the DG marketers or utility websites are biased toward the interest of said source rather than fully informative for the benefit of the consumer. **Are marketers using a standard format for such disclosures?** Yes, I believe they are using standardized formats and contract language, probably to avoid risk of litigation and bad public relations. **Have standard disclosures to consumers been developed by solar DG firms or others?** I don’t know, but I assume disclosure are drafted by attorneys paid by a given entity to represent said entity’s interests rather than the interests of the consumer. **If so, are there any additional disclosures that would be useful to consumers?** A “grandfathering provision” is not guaranteed. It’s up to regulators to decide. Either that or contractual language that places the risk of regulatory changes on the DG provider rather than the consumer.

- **Do solar DG marketers or others use robocalls to promote solar PV panel sales to consumers?** I’ve not experienced any robocalls. I did receive a call from Lisa Jet of SolarCity yesterday (18 May 2016) wherein she offered an option to reduce the cost of the system I’m purchasing for my in-laws’ home next door to mine, if I was willing to reduce the warranty period from 30-years to 20-years. She also offered a financing option. I declined both options. The call was recorded by the company. **If so, are there practices that raise issues for consumers?** Yes, when a DG company solicit a modification to the original agreement over a recorded call, the behavior has the appearance of a bait and switch tactic without the opportunity for the consumer to consider the ramifications of the impulse decision they are asked to make over the phone. A more appropriate and honest method would be for the DG company to email the offer to their customer with full disclosure of the ramifications so the consumer can sleep on it before being required to respond.

In closing, let me reiterate my overall experience with SolarCity has been a positive one, particularly with their installation contractor, which showed up when they said they would and did what they said they would do. I don’t know if SolarCity is ISO 9001 certified, but they pretty much meet the requirement in my experience of “say what you do, do what you say,” with the exception of topics I’ve discussed in detail in the first few pages of these comments.

Respectfully submitted,

Joe Orawczyk

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## Glossary:

CPUC California Public Utilities Commission  
DG Distributed Generation  
DER Distributed Energy Resources

NEM Net Energy Metering  
PUCN Public Utilities Commission of Nevada  
PV Photovoltaic  
SCE Sothern California Edison electric utility  
SDG&E San Diego Gas and Electric utility  
SRSG Solar Receiver Steam Generator  
TOU Time of Use rates  
TPO Third Party Owned  
VOS Value of Solar  
VOST Value of Solar Tariff