

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Application of San Diego Gas & Electric  
Company (U 902 E) for Authority to Update Electric  
Rate Design Effective on January 1, 2015

Application 14-01-027  
(Filed January 31, 2014)

**PREPARED DIRECT TESTIMONY OF  
JOSE LUIS CONTRERAS ON BEHALF OF THE  
CALIFORNIA SOLAR ENERGY INDUSTRIES ASSOCIATION**

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1           Q       **Please state your name, occupation and business address.**

2           A       My name is Jose Luis Contreras. I am president of Solare Energy. My business  
3 address is 9520 Padgett St #218, San Diego, CA 92126.

4           Q       **Please describe your professional background.**

5           A       I co-founded Solare Energy in 2009 and have served as president since then.  
6 Solare Energy merged an Electrical Contracting business established in 1989 with an Energy  
7 Auditing firm. Solare Energy designs, installs, and finances integrated energy solutions (e.g.,  
8 solar PV, solar water heating, energy efficiency retrofits) for residential and commercial  
9 customers in San Diego. I was previously Associate Director in Navigant Consulting's Clean  
10 Energy Technology Practice. In seven years there I led strategy, technology management,  
11 financial analysis, and policy analysis consulting projects for utilities, equipment manufacturers,  
12 oil companies, government research agencies, and other clients. Prior to that I was with Arthur  
13 D. Little's Technology and Innovation Management Practice for six years. I have an Industrial  
14 and Systems Engineering degree from Tecnologico de Monterrey and an MBA from Columbia  
15 University.

16          Q       **On whose behalf are you testifying in this proceeding?**

17          A       This testimony is presented on behalf of the California Solar Energy Industries  
18 Association (CALSEIA). CALSEIA is a 501(C)(6) not-for-profit solar industry trade association  
19 with 200 company members involved in the solar energy business in California. CALSEIA is an  
20 active participant in a number of Commission proceedings addressing State policy and electric

1 utility rates. Changes to electricity rates have direct economic impacts on the current and  
2 prospective customers of CALSEIA's member companies and may help or hinder the  
3 companies' ability to market solar energy products. Solare Energy is a member of this industry  
4 trade association.

5 **Q What is CALSEIA's interest in this proceeding?**

6 A CALSEIA member companies are the leading providers of solar systems in  
7 California, having installed the vast majority of the existing solar systems in California.  
8 CALSEIA member companies include the largest national installers as well as local and regional  
9 players.

10 Rate design is one of the single most important factors in determining the economic  
11 viability of a solar project. Changing the underlying rate design directly affects both existing  
12 property owners who have already gone solar and potential solar customers considering going  
13 solar in the future. San Diego Gas & Electric (SDG&E) proposes changes to time of use (TOU)  
14 rates that will directly affect CALSEIA member companies. Furthermore, we believe the State  
15 would not be able to achieve its clean energy goals if the Commission does not maintain a  
16 regulatory environment that enables customer investment in rooftop solar.

17 **Q What is the purpose of your testimony?**

18 A I present the impacts on a typical solar installation of proposed changes to the  
19 time of use rate schedule for residential solar customers. This analysis demonstrates that the  
20 proposed changes would excessively harm the value of existing solar investments and would  
21 reduce the rate of new solar installations. CALSEIA recognizes that changes in time periods for  
22 time of use rates may need to be altered at some point in the future and that some minor revisions  
23 may be warranted now, but wholesale changes to time periods are premature at best and perhaps  
24 unnecessary.

25 **Q What are the proposed changes to the time of use rate for residential solar  
26 customers?**

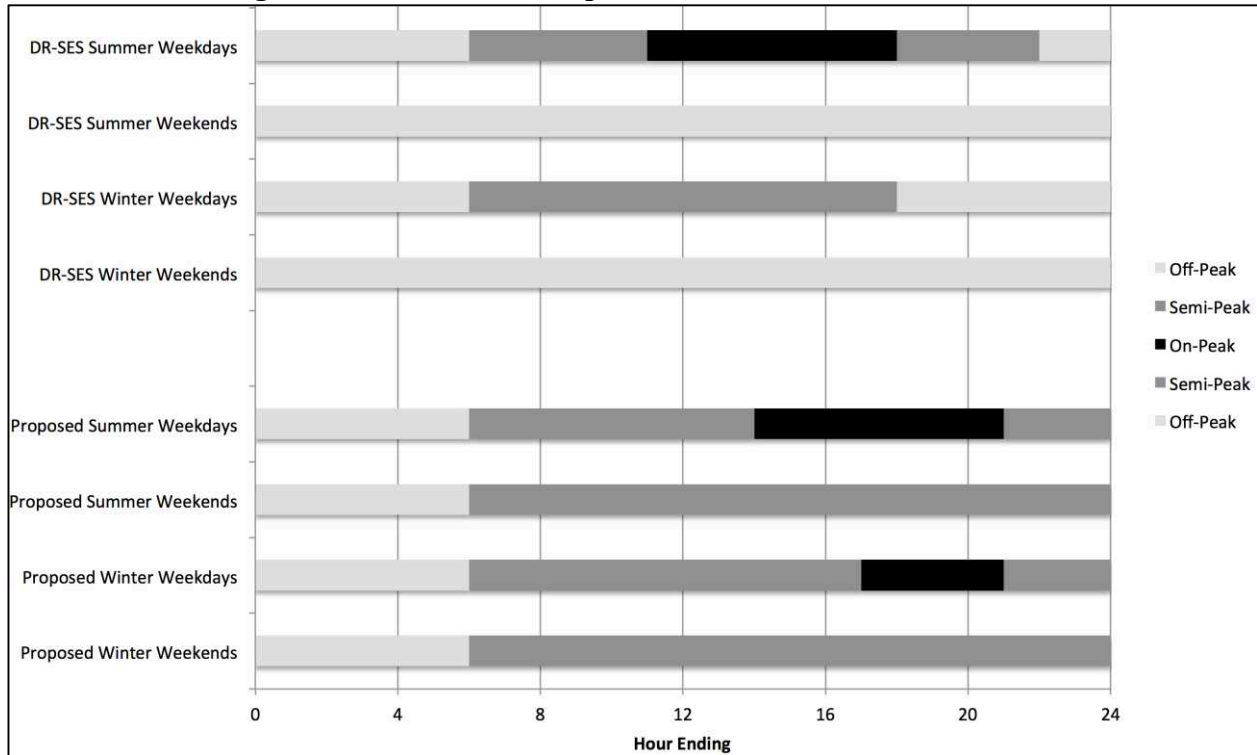
27 SDG&E's proposed changes to time periods in Schedule DR-SES are:

- 28
- Move the summer peak period 3 hours later (11am-6pm to 2pm-9pm).
  - 29 • Add a non-peak period for weekdays in the winter to include 4 hours (5pm-  
30 9pm).
  - 31 • Move 18 hours on each weekend day and holiday from off-peak to semi-peak.

- Move 2 hours each summer weekday from off-peak to semi-peak (10pm-12am) and 3 hours each winter weekday from off-peak to semi-peak (9pm-12am).

These changes are shown in Figure 1.

**Figure 1. Current and Proposed Time-of-Use Time Periods**



5 Q What did your analysis find?

6 A I found significant erosion in value for solar investments due to changing TOU  
 7 time periods. For a residential system on Schedule DR-SES, annual savings would be reduced  
 8 33% and the capital recovery period would be increased 45%. These impacts are shown in  
 9 Tables 1-3.

**Table 1. Residential Solar Bill Under Schedule DR-SES With Current Time Periods**

	Consumption (kWh)	PV Production (kWh)	Net Billing (kWh)	Rate (\$/kWh)	Post Solar Bill (\$)
<b>Summer May-Oct</b>	<b>3,454</b>	<b>(3,226)</b>	<b>228</b>		<b>-\$173</b>
On-Peak	726	(1,490)	(764)	\$0.49395	-\$377
Semi-Peak	1,163	(858)	305	\$0.22335	\$68
Off-Peak	1,566	(878)	688	\$0.19802	\$136
<b>Winter Nov-Apr</b>	<b>3,645</b>	<b>(2,404)</b>	<b>1,241</b>		<b>\$233</b>
On-Peak					\$0
Semi-Peak	1,437	(1,789)	(352)	\$0.20756	-\$73
Off-Peak	2,208	(615)	1,593	\$0.19220	\$306
<b>Grand Total</b>	<b>7,099</b>	<b>(5,630)</b>	<b>1,469</b>		<b>\$60</b>

**Table 2. Residential Solar Bill Under Schedule DR-SES With Proposed Time Periods**

	Consumption (kWh)	PV Production (kWh)	Net Billing (kWh)	Rate (\$/kWh)	Post Solar Bill (\$)
<b>Summer May-Oct</b>	<b>3,454</b>	<b>(3,227)</b>	<b>227</b>		<b>\$147</b>
On-Peak	952	(547)	405	\$0.49395	\$200
Semi-Peak	1,996	(2,713)	(717)	\$0.22335	-\$160
Off-Peak	506	33	539	\$0.19802	\$107
<b>Winter Nov-Apr</b>	<b>3,645</b>	<b>(2,403)</b>	<b>1,242</b>		<b>\$434</b>
On-Peak	694	18	712	\$0.46925	\$334
Semi-Peak	2,348	(2,469)	(121)	\$0.20756	-\$25
Off-Peak	603	48	651	\$0.19220	\$125
<b>Grand Total</b>	<b>7,099</b>	<b>(5,630)</b>	<b>1,469</b>		<b>\$581</b>

**Table 3. Rate Change Impact on Residential Solar Installation**

	Current TOU Period	Proposed TOU Period	Change
Pre-Solar Bill (\$/yr)	\$1,652	\$1,652	
First Year Post-Solar Bill (\$/yr)	\$60	\$581	
First Year Bill Savings (\$/yr)	\$1,592	\$1,072	-33%
Net Investment (\$)	\$10,290	\$10,290	
Payback (yrs)	6.2	9.0	45%

1 Q What would be the impact on schools and other non-profits be?

2 A Solar customers who were not able to take advantage of the federal Investment  
3 Tax Credit when they made their solar investments are most vulnerable to changes that impact  
4 those investments. Many public schools, universities, churches, community centers, and other  
5 non-profit organizations have made investments in solar systems with longer capital recovery  
6 periods than those that are typical for other customers because they are generally committed to

1 stay in their buildings for decades. In its opening testimony, SDG&E acknowledges that some  
2 public schools are likely to be adversely impacted by the proposed changes.<sup>1</sup>

3 Q Will changes to the federal Investment Tax Credit influence the impact of the  
4 proposed rate changes?

5 A Yes. In January 2017, the federal tax credit that has been fundamental to the  
6 economics of solar investments will go from 30% to 10% for commercial solar investors and  
7 from 30% to zero for residential solar investors. The combination of the lack of a tax credit and  
8 less favorable rate structure would likely reduce the rate of solar installations significantly.

9 Q Do you agree with SDG&E's proposal to change TOU periods for Schedule  
10 DR-SES?

11 A No. I do not agree with the proposed changes. The proposal would adversely  
12 impact existing solar customers, it would make distributed solar less attractive to potential new  
13 customers, it does not recognize the ongoing value of distributed solar to flattening the demand  
14 curve, it could create operational problems to the utility, and the timing of this change is not  
15 appropriate.

16 As demonstrated in Table 3, this change reduces the savings of existing solar customers  
17 on Schedule DR-SES. The lower savings will not allow customers to reach their expected return  
18 on investment. The impact will be even higher for customers that financed the installation of the  
19 solar systems as part of the savings are used to cover the financing costs. This proposal is  
20 changing the structure under which existing solar customers made long term investments,  
21 encouraged by the Commission's California Solar Initiative and the general structure of rate  
22 schedules.

23 The proposal would make solar less attractive to new customers. It would reduce  
24 projected savings. Furthermore, it would increase the risk of projected savings due to regulatory  
25 uncertainty. These issues, combined with the reduction of the federal tax credit, would  
26 significantly reduce the installation of solar systems and harm the positive momentum created by  
27 the Commission's California Solar Initiative and in support of current State policy regarding  
28 greenhouse gas emissions, renewable generation and loading order.

29 Distributed solar generation will continue to create value during peak consumption

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<sup>1</sup> SDG&E, "Rate Design Window Application of San Diego Gas & Electric Company (U 902 E)," January 31, 2014 at 6.

1 periods. The peak demand curve is not expected to shift; what we expect is that solar generation,  
2 from both distributed and utility-scale systems, will offset peak demand periods. This will create  
3 a new “net peak” (i.e., peak demand minus must-take solar generation) that will be at a  
4 significantly lower level and later in the day, when solar generation comes offline. Even when  
5 that happens, solar will still be providing the value of flattening the demand curve at the system  
6 level. If it weren’t for solar, electricity demand would revert back to the middle of the day peak  
7 at a higher level and marginal wholesale electricity prices would be much higher. Furthermore,  
8 distributed solar will provide an additional flattening value at the distribution level.

9         If we standardize TOU periods across all rate schedules, we will create significant  
10 demand spikes at the start of lower demand periods that will create problems in the distribution  
11 and transmission systems. Examples of these are extreme peaks in residential air conditioning  
12 use at the end of the peak periods in hot summer days, or the charging of electric vehicles at the  
13 start of the super-off-peak period. With the expected introduction of residential time of use rates  
14 and adoption of smart appliances, other devices will join thermostats and electric vehicles in  
15 postponing usage until those peak periods, exacerbating the problem. The goal is to flatten the  
16 demand curve to improve utilization of the system, not to move peaks from one time of day to  
17 another.

18         The analysis in the proposal is mostly based on projections used to develop the 2013  
19 IEPR that are forecasting impacts of high solar penetration in 2017 due to RPS goals. We have  
20 not seen any evidence that demonstrates that peak demand for SDG&E has shifted. Shifting  
21 TOU periods would have a high impact on solar customers and should be based on actual data,  
22 not old projections of what the future might look like. The energy market is highly dynamic, and  
23 the emergence of a mass market for electric vehicles and energy management tools could have  
24 major influence on the California electricity system. Furthermore, other strategies, such as  
25 energy storage, will need to be considered.

26         **Q         What is CALSEIA’s recommendation in this proceeding?**

27         A         CALSEIA recommends that the Commission reject SDG&E’s proposed changes  
28 to time of use rates. In particular, the DR-SES rate should not be changed at this time. It would  
29 be reasonable for SDG&E to raise this issue again in its forthcoming General Rate Case, when  
30 there will be an additional 18 months of data on actual system peaks and a clearer picture of the  
31 range of options available to address the secondary evening peak.

1           Most importantly, customers who have made solar investments according to a basic  
2 structure of time of use rates should be allowed to continue service under the existing schedules.  
3 Time of use rates are designed to establish customer behavior with regard to when energy is  
4 drawn from the grid. Some of those behaviors involve major investments by customers.  
5 Changing the time periods when customers are encouraged to use different amounts of energy  
6 without allowing customers to realize the expected savings from their investments is not fair to  
7 people who responded to price signals from the utilities by doing exactly what the State was  
8 encouraging them to do.

9           Q       **Does that complete your testimony?**

10          A       Yes, it does.