



1-1-2008

Fixing an Unintended Flaw: Mandatory Time-of-Use Rates Hindering the California Solar Initiative

Jacqueline Zee

Pacific McGeorge School of Law

Follow this and additional works at: <http://digitalcommons.mcgeorge.edu/greensheet>

Recommended Citation

39 McGeorge L. Rev. 637

This Article is brought to you for free and open access by the Law Review at Pacific McGeorge Scholarly Commons. It has been accepted for inclusion in Greensheets by an authorized administrator of Pacific McGeorge Scholarly Commons. For more information, please contact msharum@pacific.edu.

Fixing an Unintended Flaw: Mandatory Time-of-Use Rates Hindering the California Solar Initiative

Jacqueline Zee

Code Section Affected

Public Utilities Code § 2851 (amended).

AB 1714 (Levine); 2007 STAT. Ch. 11 (*Effective June 7, 2007*).

I. INTRODUCTION

The sun has always been “hot” in California—one need not look long or far to find proof. Our sunny state boasts enormous solar energy potential, with the capacity to generate more than half of its energy demand by installing solar systems on only 0.5 percent of its land area.¹ California joins Arizona, Nevada, and New Mexico as the four states in the nation with the highest potential capacity to generate electricity from solar systems.² Indeed, the world’s largest photovoltaic manufacturing facility was built in Camarillo; the first test of a large scale thermal solar tower power plant was located just east of Barstow; the world’s largest solar thermal electricity facility was built in the Mojave Desert; and the first grid-supported photovoltaic system was built in Kerman.³

Governor Schwarzenegger has been active in keeping California a leader in solar and other renewable energy use.⁴ Most notably, the Governor signed Assembly Bill 134 to continue funding the California Energy Commission’s renewable energy rebate program,⁵ signed the Million Solar Roofs bill,⁶ launched

1. See ALISON CASSADY & KATHERINE MORRISON, ENV’T CAL., GENERATING SOLUTIONS: HOW CLEAN, RENEWABLE ENERGY IS BOOSTING LOCAL ECONOMIES AND SAVING CONSUMERS MONEY 29 (2003), http://www.environmentalcalifornia.org/uploads/qx/bE/qxbEmqFCNzpSTq8PDNIoag/Generating_Solutions.pdf (on file with the *McGeorge Law Review*) (“[I]f California installed solar photovoltaic systems on .5% of the state’s land area, it could generate 128,000 million kWh, or more than half of the state’s total electricity generation in 2000.”).

2. *Id.* at 9 fig.1 (showing that the southwest area of the United States has the greatest solar potential).

3. Go Solar Cal., A Short History of Solar Energy and Solar Energy in California, <http://www.gosolarcalifornia.ca.gov/solar101/history.html> (last visited Sept. 14, 2007) (on file with the *McGeorge Law Review*).

4. See generally Office of the Governor, About Arnold, <http://gov.ca.gov/about/arnold> (last visited Sept. 14, 2007) (on file with the *McGeorge Law Review*).

In addition, Governor Schwarzenegger is the first governor in decades to make major investments in improving California’s aging infrastructure through his Strategic Growth Plan, helping to reduce congestion and clean the air. He established the Hydrogen Highway and Million Solar Roofs Plan, continuing his leadership in creating a greener environment.

Id.

5. U.S. Dep’t of Energy, Schwarzenegger Accelerates Solar Rebates, Oct. 1, 2004, http://www.eere.energy.gov/states/news_detail.cfm/news_id=8630 (on file with the *McGeorge Law Review*).

the Go Solar California website,⁷ and spoke at the Solar Power 2006 Exposition and Conference, the largest solar power conference in the country.⁸ Governor Schwarzenegger even embarked on a three-city trade mission to China, praising the dual efforts of California and China for jointly developing a Silicon Valley designed, China manufactured solar cell that the Governor touted as “the most efficient solar cell in the world.”⁹

The Governor is not the only sun-loving Californian. The Legislature introduced eight bills in the 2007-2008 Session addressing solar energy use in the state.¹⁰ As of March 2008, the Consumer Energy Center lists 778 registered renewable energy equipment retailers and vendors of solar photovoltaic, small wind, and fuel cell systems in California.¹¹ One can even find workshops, classes, seminars, conferences, and solar home tours all over California to educate the public about the benefits of going solar.¹² Is it any wonder that today’s headlines are sizzling with solar news? “Renewable Energy Spells Economic Security,” reads a headline in the *Desert Sun*.¹³ “Hot Off the Grid-Solar Ovens Utilize Nature’s Rays for Energy-Efficient, Everyday Cooking-Even in Foggy San

6. Press Release, Office of the Governor, Schwarzenegger Signs Legislation to Complete Million Solar Roofs Plan (Aug. 21, 2006), <http://gov.ca.gov/index.php/press-release/3588/> [hereinafter Schwarzenegger Signs] (on file with the *McGeorge Law Review*); see also CAL. PUB. RES. CODE §§ 25405.5-25405.6, 25780-25784 (West Supp. 2007) (enacted by 2006 Cal. Stat. ch. 132, the Million Solar Roofs legislation); CAL. PUB. UTIL. CODE §§ 387.5, 2827, 2851 (West Supp. 2007) (enacted and amended by 2006 Cal. Stat. ch. 132, the Million Solar Roofs legislation).

7. Press Release, Office of the Governor, Gov. Schwarzenegger Launches Go Solar California Web Site, Touts State’s Leadership on Solar Power (Oct. 19, 2006), <http://gov.ca.gov/index.php/?press-release/4490/> (on file with the *McGeorge Law Review*).

8. Stephen Lacey, *Schwarzenegger Closes America’s Largest Ever Solar Event*, RENEWABLE ENERGYACCESS.COM, Oct. 20, 2006, <http://www.renewableenergyaccess.com/rea/news/story?id=46310> (on file with the *McGeorge Law Review*).

9. *Solar Future? Schwarzenegger Pitches to China*, MSNBC.COM, Nov. 15, 2005, <http://www.msnbc.msn.com/id/10051638/> (on file with the *McGeorge Law Review*).

10. Go Solar Cal., California Solar-Related Legislation, <http://www.gosolarcalifornia.ca.gov/solar101/legislation.html> (last visited Sept. 14, 2007) (on file with the *McGeorge Law Review*).

11. See Cal. Energy Comm’n, Consumer Energy Center: All Registered Retailers, <http://www.consumerenergycenter.org/erprebate/database/fulllist.php> (last visited Mar. 2, 2008) (on file with the *McGeorge Law Review*) (listing contact information for 778 registered retailers as of March 2, 2008).

12. See, e.g., Pac. Gas & Elec. Co., Spring 2008 Energy Efficiency Classes, <http://www.pge.com/pec/classes/> (last visited Mar. 2, 2008) (on file with the *McGeorge Law Review*) (listing classes being offered by the Pacific Energy Center and the Energy Training Center, including “Solar Water Heating Systems” and “Basics of Photovoltaic (PV) Systems for Grid-Tied Applications”); Solar Living Inst., Workshop Calendar 2008, <http://www.solarliving.org/workshops/> (last visited Mar. 2, 2008) (on file with the *McGeorge Law Review*) (listing workshops being offered by the Solar Living Institute, including “Introduction to Photovoltaics” and “Economics of Solar: Making the Financial Case”); Solar Power 2008, Solar Power Conference & Expo, <http://www.solarpowerconference.com/> (last visited Feb. 23, 2008) (on file with the *McGeorge Law Review*) (providing information on the 2008 Solar Power Conference and Expo to be held October 13-16, 2008, in San Diego, California).

13. See Gordon Bloom & Moira Chapin, *Renewable Energy Spells Economic Security*, DESERT SUN (Palm Springs, Cal.), June 14, 2007, at 6B, available at <http://www.environmentalcalifornia.org/in-the-news/energy/renewable-energy-spells-economic-security> (discussing the potential for the United States to reclaim its leadership role in the development of renewable energy technologies).

Francisco,” says the *San Francisco Chronicle*.¹⁴ “Rebate Rule Chills Sales of Solar,” heads up a *Los Angeles Times* article.¹⁵ Indeed, California continues to live up to its reputation as the “Land of Sunshine” with measures such as Chapter 11, an amendment to section 2851 of the Public Utilities Code which contained a mandatory pricing system that inadvertently resulted in higher electricity costs for some solar customers.¹⁶

II. LEGAL BACKGROUND

A. California’s Energy Action Plan

In 2003, California’s three key energy agencies—the California Energy Commission, the California Power Authority, and the California Public Utilities Commission—adopted the Energy Action Plan, a “living document” addressing California’s future energy needs.¹⁷ The “overarching goal [of the Energy Action Plan] is for California’s energy to be adequate, affordable, technologically advanced, and environmentally-sound” with “minimal environmental risks and impacts.”¹⁸

One key area addressed by the Energy Action Plan is the requirements set forth in California’s Renewables Portfolio Standard (RPS),¹⁹ a 2002 mandate that set a required percentage of electricity that retail providers must generate with eligible renewable sources.²⁰ “As originally established, the RPS require[d] 20 percent of electricity sales to come from renewable sources by 2017,”²¹ with the goal of reducing California’s greenhouse gas emissions and its dependence on natural gas, and mitigating “the associated risks of electricity price volatility by

14. See Tara Duggan, *Hot Off the Grid: Solar Ovens Utilize Nature’s Rays for Energy-Efficient, Everyday Cooking—Even in Foggy San Francisco*, S.F. CHRON., July 11, 2007, at F1, available at <http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/07/11/FDG6BQROHD1.DTL&hw=solar&sn=001&sc=1000> (discussing the increasing use and benefits of solar ovens).

15. See Marc Lifsher, *Rebate Rule Chills Sales of Solar: Installers Fear Collapse as Many Homeowners Choose to Avoid Associated Higher Utility Costs*, L.A. TIMES, May 8, 2007, at C1, available at <http://www.environmentalcalifornia.org/in-the-news/energy/energy/rebate-rule-chills-sales-of-solar> (discussing the effect of the unintended flaw in the California Solar Initiative, which is the subject of Chapter 11).

16. See F.B. Silverwood, *California State Song Lyrics!*, <http://www.laurasmidiheaven.com/State/Lyrics/California.shtml> (last visited Sept. 14, 2007) (on file with the *McGeorge Law Review*) (“I love you, Land of Sunshine. Half your beauties are untold. I loved you in my childhood, and I’ll love you when I’m old.”).

17. CAL. ENERGY COMM’N & CAL. PUB. UTILS. COMM’N, ENERGY ACTION PLAN II: IMPLEMENTATION ROADMAP FOR ENERGY POLICIES 1 (2005), http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.DOC [hereinafter EAP II] (on file with the *McGeorge Law Review*).

18. *Id.*

19. See *id.* at 5-7 (“California can reduce its greenhouse gas emissions, moderate its increasing dependence on natural gas, and mitigate the associated risks of electricity price volatility by aggressively developing renewable energy resources to meet the Renewables Portfolio Standard (RPS) requirements. As originally established, the RPS requires 20 percent of electricity sales to come from renewable sources by 2017.”).

20. CAL. PUB. UTIL. CODE § 399.12(f), (h) (West 2004 & Supp. 2007).

21. EAP II, *supra* note 17, at 5.

aggressively developing renewable energy resources.”²² Governor Schwarzenegger has set a more ambitious goal, increasing the percentage of California’s electricity sales that comes from renewable sources to thirty-three percent by 2020.²³ An important part of achieving this goal is increasing the state’s use of solar energy.²⁴

B. A Million Solar Roofs in California by 2018

In 2005, the Governor took a step towards achieving his ambitious goal by asking the California Public Utilities Commission (Commission) to implement the Million Solar Roofs Plan (Plan).²⁵ The goal of the Plan is to have one million solar roofs in California by 2018, providing 3,000 megawatts of clean, solar-produced energy, and reducing greenhouse gas emissions by three million tons.²⁶ In response, the Commission launched the California Solar Initiative (Initiative),²⁷ a ten year, \$3.3 billion incentive program to subsidize the installation and operation of solar energy systems on residential, commercial, industrial, and agricultural properties.²⁸

On August 21, 2006, Governor Schwarzenegger took another step towards achieving his ambitious goal by signing Senate Bill 1, which implemented the portions of the Plan that the Commission did not have the authority to mandate.²⁹ Specifically, the bill increased the credit available to solar customers for excess power generated by their solar energy systems, mandated that solar panels become a standard option available to all buyers of new homes built in California, required municipal utilities to create their own solar rebate program, and directed the review of licensing requirements for solar installers.³⁰

Of importance to Chapter 11, the bill added section 2851 to the Public Utilities Code, outlining the duties to be undertaken by the Commission in

22. *Id.*

23. *Id.* at 5-6.

24. Go Solar Cal., The Big Picture, http://www.gosolarcalifornia.ca.gov/information/big_picture.html [hereinafter Big Picture] (last visited Sept. 14, 2007) (on file with the *McGeorge Law Review*).

25. Schwarzenegger Signs, *supra* note 6; see generally SENATE FLOOR, COMMITTEE ANALYSIS OF SB 1, at 1-6 (Aug. 8, 2006) (providing background information on the Governor’s Million Solar Rooftops proposal).

26. Schwarzenegger Signs, *supra* note 6.

27. *Id.*

28. Go Solar Cal., The California Solar Initiative—CSI, About the California Solar Initiative, <http://www.gosolarcalifornia.ca.gov/csi/index.html> (last visited Sept. 14, 2007) (on file with the *McGeorge Law Review*).

29. Schwarzenegger Signs, *supra* note 6.

30. Press Release, Env’t Cal., Million Solar Roofs Bill (SB 1) Signed Into Law (Aug. 21, 2006), <http://www.environmentalcalifornia.org/newsroom/energy/energy-program-news/million-solar-roofs-bill-sb-1-signed-into-law> (on file with the *McGeorge Law Review*); see also CAL. PUB. RES. CODE §§ 25405.5-25405.6, 25780-25784 (West Supp. 2007) (enacted by 2006 Cal. Stat. ch. 132, the Million Solar Roofs legislation); CAL. PUB. UTIL. CODE §§ 387.5, 2827, 2851 (West Supp. 2007) (enacted and amended by 2006 Cal. Stat. ch. 132, the Million Solar Roofs legislation).

implementing the Initiative.³¹ Section 2851 requires time-variant pricing, also known as time-of-use (TOU) pricing, for all ratepayers with a solar energy system rather than flat-rate or tiered-rate pricing.³² Section 2851 also mandates that the Commission develop a time-variant pricing rate specifically for solar energy customers “that creates the maximum incentive for ratepayers to install solar energy systems so that the system’s peak electricity production coincides with California’s peak electricity demands.”³³ This specialized rate is to assure “that ratepayers receive due value for their contribution to the purchase of solar energy systems and customers with solar energy systems continue to have an incentive to use electricity efficiently.”³⁴

TOU pricing is just one of the ways that utility companies generally charge solar consumers.³⁵ Other ways of pricing electricity include flat-rate pricing and tiered-rate pricing, sometimes combined with net metering.³⁶ Under a flat-rate pricing system, a solar customer may be charged eleven cents per kWh of electricity consumed regardless of the time of day of the consumption.³⁷ In contrast, a solar customer under a tiered-rate pricing system will pay lower rates so long as his or her electricity consumption remains “below a certain level of usage,” but will pay

substantially higher rates for every unit of power consumed above that threshold. When combined with net metering, which involves the solar power system getting a credit for the excess electricity generated by the system . . . , these rate policies can make solar power more advantageous for certain types of consumers—for example, those who consume large amounts of power during peak daytime periods or those who have high monthly electricity consumption and must therefore purchase power at higher rate tiers.³⁸

31. See CAL. PUB. UTIL. CODE § 2851 (West Supp. 2007) (enacted by 2006 Stat. ch. 132). In addition to requiring the implementation of time-variant pricing discussed herein, section 2851 also authorizes the Commission to award monetary incentives and adopt performance-based incentives to encourage the generation of electricity from solar energy systems, aid in financing the installation costs of solar energy systems, and set requirements for “reasonable and cost-effective energy efficiency improvements in existing buildings as a condition of providing incentives for eligible solar energy systems.” *Id.*

32. *Id.* § 2851(a)(4).

33. *Id.*

34. *Id.*

35. See Bernadette Del Chiaro & Rachel Gibson, *Government’s Role in Creating a Vibrant Solar Power Market in California*, 36 GOLDEN GATE U. L. REV. 347, 363 (2006) (outlining various electricity rates and utility rate structures in California).

36. *Id.*; ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 1-2 (June 6, 2007).

37. Press Release, Env’t Cal., Unforeseen Problems with California’s Solar Program (May 8, 2007), <http://www.environmentalcalifornia.org/newsroom/energy/energy-program-news/unforeseen-problems-with-calif-onias-solar-program> [hereinafter Unforeseen Problems] (on file with the *McGeorge Law Review*).

38. Del Chiaro & Gibson, *supra* note 35, at 363-64.

For example, a solar customer on a TOU pricing rate may pay eight cents per kWh for electricity consumed in the middle of the night, when temperatures are cooler and electricity demand is correspondingly lower, but may pay twenty-nine cents per kWh for electricity consumed in the afternoon when temperatures are warmer and the utility company faces higher electricity demand.³⁹

III. CHAPTER 11

Chapter 11 amends section 2851 of the Public Utilities Code, which requires all customers who participate in the Plan's solar subsidy to be on TOU electricity rates rather than the standard flat-rate pricing.⁴⁰ Chapter 11 authorizes the Commission to delay the implementation of the previously mandated TOU rate pricing.⁴¹ Until such time as the state's three largest electrical corporations (Pacific Gas & Electric Company, Southern California Edison, and San Diego Gas & Electric Company) have developed time-variant rates consistent with the unique needs of solar customers, TOU rates will no longer be mandatory.⁴²

Chapter 11 also gives solar customers who were required to be on TOU rates between January 1, 2007, and January 1, 2008, and who "would otherwise qualify for flat rate pricing,"⁴³ the option to be charged either on flat-rate or time-variant pricing "[i]f the commission delays implementation of time-variant pricing."⁴⁴ Once the Commission implements a TOU rate price specifically for solar customers, the Initiative's mandated TOU rate pricing will go into effect for new solar customers.⁴⁵ Finally, Chapter 11 is an urgency measure that takes effect immediately.⁴⁶

39. Unforeseen Problems, *supra* note 37.

40. CAL. PUB. UTIL. CODE § 2851(a)(4) (West Supp. 2007); *see also* ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 2-3 (June 6, 2007) (discussing TOU electricity rates and flat-rate pricing under section 2851(a)(4)).

41. CAL. PUB. UTIL. CODE § 2851(a)(4)(B) (amended by Chapter 11).

42. *Id.*; ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 3 (June 6, 2007).

43. ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 1 (June 6, 2007); CAL. PUB. UTIL. CODE § 2851(a)(4)(C) (amended by Chapter 11). For the eligibility criteria for flat rate pricing, *see generally* Pac. Gas & Elec. Co., Rate Information, http://www.pge.com/notes/rates/tariffs/rate_info.shtml (last visited Mar. 5, 2008) (on file with the *McGeorge Law Review*); S. Cal. Edison, Rate Information, <http://www.sce.com/Customerservice/RateInformation/ResidentialRates/Default.htm> (last visited Mar. 5, 2008) (on file with the *McGeorge Law Review*).

44. CAL. PUB. UTIL. CODE § 2851(a)(4)(C) (amended by Chapter 11).

45. ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 3 (June 6, 2007).

46. 2007 Cal. Stat. ch. 11, § 2.

IV. ANALYSIS

A. *Wasting our Most Abundant Natural Resource*

Renewable, clean, so-called “green” energy is the product of harnessing and putting to use the earth’s own inexhaustible energy.⁴⁷ As of 2004, 10.2 percent of California’s energy consumption came from renewable sources, such as “biomass, geothermal, small hydroelectric, solar, and wind,” providing Californians with cleaner air, a reduction in carbon dioxide, a reduction in dependence on imported oil, and job opportunities.⁴⁸ Sunlight is California’s most abundant natural resource, yet “solar power makes up less than one half of one percent of California’s total electricity supply.”⁴⁹ “[T]he sun provides enough [power] to meet the world’s energy needs thousands of times over” each day, and in California alone, the sun generates “an average of more than 5 kilowatt-hours (kWh) of solar energy per square meter per day.”⁵⁰ Considering that the average California household uses only approximately sixteen kWh of electricity per day, “the solar energy reaching a four-square-meter [plot] . . . could *theoretically* generate more than enough energy to supply the home, if the energy could be captured, used without loss of energy, and stored for future use.”⁵¹

B. *Harnessing the Sun’s Energy*

“Going solar” means installing and operating a photovoltaic power system (PV system) that converts sunlight directly into electricity, enabling the solar customer to generate some or all of his or her electrical needs from the sun rather than electric utility sources.⁵² “A PV system uses panels (or cells) of semiconductor material similar to that used in computer chips to absorb sunlight and convert it into electricity”⁵³ through a chemical reaction.⁵⁴ The benefits of going solar are many. “Solar power development provides substantial environmental and public health benefits because it creates no air pollution, greenhouse gases, or radioactive and other dangerous wastes.”⁵⁵ A decrease in carbon dioxide emissions as well as “emissions of smog-forming nitrogen oxides

47. Big Picture, *supra* note 24.

48. *Id.*

49. Del Chiaro & Gibson, *supra* note 35, at 353.

50. *Id.* at 352-53 (quotations omitted and alteration in original).

51. *Id.* at 353 (quotations omitted, first alteration in original, and emphasis added). It is important to note that at this time, this is only *theoretically* possible, and no solar technology currently exists that generates solar energy to such maximal efficiency.

52. Big Picture, *supra* note 24.

53. Pac. Gas & Elec. Co., CSI FAQs, <http://www.pge.com/mybusiness/energysavingsrebates/solar/csi/csifaqs/> (last visited Sept. 14, 2007) (on file with the *McGeorge Law Review*).

54. Del Chiaro & Gibson, *supra* note 35, at 353.

55. Howard A. Learner, *Cleaning, Greening, and Modernizing the Electric Power Sector in the Twenty-First Century*, 14 TUL. ENVTL. L.J. 277, 299 (2001).

and other health-threatening pollutants” means lower healthcare costs from air pollution-related illnesses such as asthma.⁵⁶ Additionally, since no “elaborate and costly electric infrastructure [that] deliver[s] power from [distant] central station power plants” to the consumer is necessary, efficiency is increased and costs are decreased.⁵⁷ Finally, since PV systems generate energy during peak, high-demand times when air-conditioning is in use, demand on utility companies is decreased, which lowers costs to consumers and has the added benefit of protecting Californians from natural gas price volatilities.⁵⁸

C. Financial Incentives for Going Solar

The cost of going solar is currently “significantly higher than most other [forms of] electricity generation, but rapid technological improvements and increased production leading to lower per-unit costs are likely to make solar more cost-competitive in the future.”⁵⁹ While season, time of day, location, and availability of shading from buildings and trees⁶⁰ will have some effect on the degree to which a building may utilize solar energy, the initial cost of materials and installation of a PV system as well as variations in electricity rates have a significant impact on whether a consumer will ultimately realize a cost benefit from a solar energy system.⁶¹ A consumer who installs and operates a solar power system that is expected to provide at least half of his or her home’s electricity needs will, on average, see a net economic benefit within the first month of owning the system and can expect the system to pay for itself within ten to twelve years.⁶² The Initiative is aimed at reducing a solar consumer’s required

56. Del Chiaro & Gibson, *supra* note 35, at 358-59 (quotations omitted).

57. *Id.* at 354 (quotations omitted and alterations in original).

58. *Id.* at 355-56.

59. Learner, *supra* note 55, at 298.

60. *Id.*

61. Del Chiaro & Gibson, *supra* note 35, at 360-62. Installing a solar power system includes costs for the solar panels, estimated at approximately sixty percent of the total cost, and other system components and installation, estimated at approximately forty percent of the total cost. *Id.* at 362. While these costs are “not far from becoming cost-competitive with fossil fuel power generation” and have “declined four percent annually over the past fifteen years . . . government subsidies are necessary to make investing in solar power cost-effective for the California consumer.” *Id.* at 361 (quotations omitted).

62. *Id.* at 364.

[A] typical 2.5 kW system—a size that typically would be expected to generate at least half of the home’s electricity needs—is estimated to cost approximately \$20,000. After a buy-down grant of \$7,000, the net cost to the homeowner is \$13,000. Moreover, in 2006 and 2007, homeowners can deduct up to \$2,000 (or thirty percent of the net cost of the solar power system, whichever is less) from their federal income tax returns the year they purchased their solar power system. For many, this will bring the net cost of the system down to approximately \$11,000.

Assuming the data inputs above and further assuming the upfront cost of the solar power system is rolled into a tax-deductible low-interest home loan or mortgage, homeowners in California’s fastest growing communities would achieve a net economic benefit from their solar investment . . . within the first month of owning the system. For example, a new homeowner living in San Jose could expect to see their monthly mortgage payments increase by \$44 while their monthly electric

investment and ultimately shortening the amount of time before a consumer sees economic benefits from his or her investment.⁶³ However, “varying electricity rates and utility rate structures among California’s various electric utility companies throughout the state” also impact a consumer’s potential cost savings and, ultimately, the viability of solar power in California.⁶⁴

D. The Unintended Flaw in the Million Solar Roofs Plan

Section 2851 previously required the Commission to mandate TOU pricing for solar consumers and to design a TOU rate specifically for solar customers “so that the system’s peak electricity production coincides with the periods of peak energy demand in the state.”⁶⁵ However, in an effort to prevent delayed implementation of the Initiative’s incentive program, the Commission applied existing TOU rates to solar customers with the plan to “design new solar TOU tariffs in each utility’s next general rate case.”⁶⁶

The effect of the Commission’s decision was that some solar customers paid more for their electricity with a solar energy system than without.⁶⁷ For example, a solar customer that installed a two kW solar system, providing only half of his electricity needs, previously paid a flat-rate of eleven cents per kWh for all electricity consumed during the day regardless of the time it was consumed.⁶⁸ But under TOU pricing, that same customer had to pay twenty-nine cents per kWh for electricity consumed in the afternoon in excess of his solar system’s production.⁶⁹ This disparity in pricing resulted in a higher electricity bill for the solar customer, who had invested resources into lowering his electricity costs by installing a solar energy system.⁷⁰

Significant declines in sales of solar energy systems have been noted as a result of the cost inefficiency of solar energy systems under current TOU rates.⁷¹ According to the Commission, solar system applications were seventy-eight

bill would decrease by \$57, leaving the homeowner with a net \$13 in savings.

Over a 30-year time period, the average benefit in terms of cumulative cash flow is approximately \$4,500 and “simple payback” (the time it takes for an investment to “pay for itself”) can be expected within ten to twelve years.

Id.

63. See *id.* at 385-87 (discussing the need for incentives and mandates to encourage the growth of the solar systems market, resulting in the “achieve[ment] [of] economies of scale and lower prices”).

64. *Id.* at 363.

65. ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 2 (June 6, 2007).

66. *Id.*

67. *Id.* at 2-3.

68. Unforeseen Problems, *supra* note 37.

69. *Id.*

70. *Id.*

71. ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 3 (June 6, 2007).

percent lower in the first three months of the incentive program than the same time period last year.⁷² One reason is because “TOU rates are structured to charge a higher amount for electricity consumed during peak hours when electricity is the most expensive to purchase.”⁷³ “TOU rates are . . . deterring people from investing in solar because they slow the financial payback for customers who use power during peak times.”⁷⁴ For consumers who “install a solar energy system that is too small to cover all of their peak energy needs[,]” and who were previously on flat-rate pricing, the consumer “would likely see an increase in their energy bill” with mandatory TOU rates.⁷⁵ This is because their solar systems only cover part of their peak energy needs, and TOU rates during peak hours are much higher than flat-rate pricing.⁷⁶

Chapter 11 addresses the solar system sales decline and attempts to put California back on track to meet the Governor’s Million Solar Roofs goal by allowing utility companies some flexibility in implementing the TOU pricing mandate.⁷⁷ Under Chapter 11, solar customers may opt for flat-rate pricing while the Commission develops TOU pricing rates that will allow a broader range of solar customers to reap the economic benefits of their investment in solar energy use.⁷⁸ Additionally, Chapter 11 was introduced as an urgency action “to allow the [Commission] to take action [to implement the delayed TOU rate] at its next regularly scheduled meeting.”⁷⁹ Chapter 11’s solution is a step in the right direction to “not only encourage more conservation and efficiency during California’s peak energy demand time periods,” but “further incentivize solar power as the value of energy saved and energy generated by the solar system goes up.”⁸⁰

72. *California Governor Promises to Fix CSI*, RENEWABLEENERGYACCESS.COM, May 10, 2007, <http://www.renewableenergyaccess.com/rea/news/story?id=48449> [hereinafter *Fix CSI*] (on file with the *McGeorge Law Review*).

73. Unforeseen Problems, *supra* note 37; *see also* *Fix CSI*, *supra* note 72 (“[I]ssues with Time of Use (TOU) rates have slowed applications for residential solar systems significantly.”)

74. *Fix CSI*, *supra* note 72.

75. Unforeseen Problems, *supra* note 37.

76. *Id.*

77. CAL. PUB. UTIL. CODE § 2851(a)(4)(B) (amended by Chapter 11); ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 2-3 (June 6, 2007).

78. *Id.* § 2851(a)(4)(C) (amended by Chapter 11); ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE, COMMITTEE ANALYSIS OF AB 1714, at 2-3 (June 6, 2007).

79. *Fix CSI*, *supra* note 72 (“To expedite the passage of the legislation, the Governor has reached a conceptual agreement with a bipartisan group of legislators to quickly introduce a bill that fixes the problem.”); *see also* 2007 Cal. Stat. ch. 11, § 2 (“In order to ensure that the goals of the California Solar Initiative are met and to avoid harm to the California solar industry, it is necessary that this act take effect immediately.”).

80. *See* Unforeseen Problems, *supra* note 37 (suggesting that California must apply “TOU rates to all ratepayers, regardless of whether they invest directly in their own solar system or not”).

V. CONCLUSION

According to a website touting “the best sunny places to live in the United States,” Sacramento boasts seventy-eight percent sunny days, Long Beach seventy-three percent, Santa Barbara eighty-five percent, Los Angeles eighty percent, and San Diego seventy-three percent.⁸¹ The sun is California’s most abundant natural resource,⁸² giving the state the capability to produce more electricity than even the most power-hungry Californian can consume. Solar energy has grown from being merely an alternative source of energy to being a promising solution, enabling the state to reduce its dependency on dwindling supplies of oil and natural gas while at the same time helping to “clean up our polluted skies and keep a lid on global warming.”⁸³ Chapter 11 enables California to continue its role as a solar leader, giving the Governor’s ambitious plan of a million solar roofs on California homes and buildings by 2018 a chance to be realized.⁸⁴

81. Lizzy Scully, *Relocation “Treatment” for Seasonal Affective Disorder*, EZINEARTICLES.COM, Apr. 4, 2007), <http://ezinearticles.com/?Relocation-Treatment-for-Seasonal-Affective-Disorder&id=515144> (on file with the *McGeorge Law Review*).

82. Del Chiaro & Gibson, *supra* note 35, at 353.

83. Cal. Solar Ctr., *The History of Solar Energy*, http://www.californiasolarcenter.org/history_pv.html (last visited Sept. 14, 2007) (on file with the *McGeorge Law Review*).

84. See Schwarzenegger Signs, *supra* note 6.

One million solar roofs will greatly increase the state’s rooftop solar energy capacity, providing the output equivalent of five modern electric power plants. This program’s 3,000 megawatt goal, taken together with other aggressive solar initiatives such as requiring utilities to acquire 20 percent of the power used within the state from renewable sources, will make California once again a world leader in solar power.

Id.

* * *