BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations.	Rulemaking 12-06-013 (Filed June 21, 2012)

RATE DESIGN REFORM PROPOSAL OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)

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Dated: May 29, 2013

Pursuant to the Scoping Memo and Ruling of Assigned Commissioner dated November 26, 2012 (Scoping Memo), Pacific Gas and Electric Company (PG&E) provides its Electric Rate Design Reform Proposal (Proposal) in this proceeding, provided as Attachment 1 to this pleading. PG&E's Proposal complies with the Principles of Optimal Residential Rate Design adopted in the Scoping Memo, and responds fully to the questions on rate design proposals also included in the March 19, 2013, ALJ Ruling.

PG&E respectfully requests that the Commission approve PG&E's Proposal, subject to review and approval of a subsequent formal PG&E ratesetting application to implement the Proposal. In addition, PG&E requests that the Commission support the appropriate legislation that is necessary to authorize the Commission to approve PG&E's Proposal and the rate changes to implement it.

Respectfully Submitted,

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Attachment 1

ELECTRIC RATE DESIGN REFORM PROPOSAL OF PACIFIC GAS AND ELECTRIC COMPANY MAY 29, 2013

Rulemaking 12-06-013
California Public Utilities Commission

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Executive Summary

The current residential electric rate structure in California is broken. Since the energy crisis more than a decade ago, standard residential electric rates in California have moved far from basic rate design principles, including the key principles that rates should be based on cost to serve and should be understandable to customers. This is simply unsustainable.

PG&E's Electric Rate Design Reform Proposal, presented below, fixes the broken rate design structure and complies with the Principles of Optimal Residential Rate Design adopted in the Scoping Memo in this proceeding. PG&E's Proposal also responds fully to the questions on rate design proposals included in the Scoping Memo as revised by the March 19, 2013, ALJ Ruling. Coupled with enactment of rate reform legislation such as Assembly Bill (AB) 327 (Perea), PG&E's Proposal will provide residential electric customers in California with significant relief from high and volatile electric bills.

Background

Over a million PG&E residential electric customers are paying electricity bills that are higher than PG&E's average cost of serving them.[1] Unless action is taken soon to fix the way rates are set, many of these customers will pay prices in 2020 that are more than double the average residential cost of service.[2] Figure 1 shows the current problem: an 18.3 cents per kilowatt-hour (kWh) gap between the top tier rate being charged to PG&E's non-CARE customers using more than 130 percent of baseline

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[1] Based on PG&E's Schedule E-1 residential electric rates effective May 1, 2013, and 2012 residential revenues, accounts and sales by rate schedule.

[2] Based on current PG&E's 2013 revenue requirements in PG&E's 2013 Annual Electric True-up consolidated rate change filing, and PG&E's internal illustrative revenue requirement forecast for 2014-2022, as of May 1, 2013.

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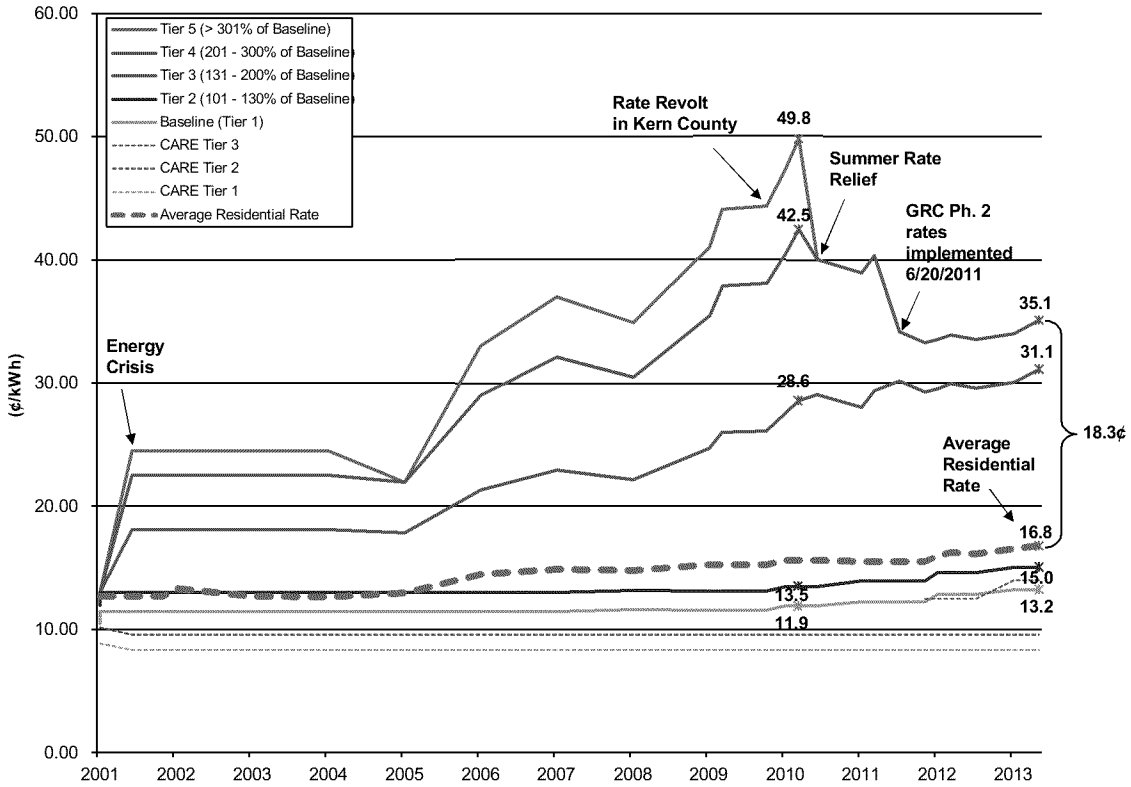
quantity (35.1 cents/kWh) and the average rate paid by all of PG&E's residential customers, represented by the dotted purple line (16.8 cents/kWh). Tier 4 sales are currently being charged more than twice the average residential rate.[3]

FIGURE 1
PACIFIC GAS AND ELECTRIC COMPANY
HISTORICAL PG&E CARE AND NON-CARE RATES
2001-2013



The customers harmed by today's unfair rate structure are not limited to a particular geographic area, such as the Central Valley, but are spread across most of PG&E's service territory.[4] The majority of these customers are not rich, and they are

[3] While not quite as severe of a premium, Tier 3 sales, too, are charged a rate far in excess of the average rate (a 14.3 cents per kWh differential, or 1.86 times as much).

[4] PG&E Rate Data Analysis, 2012 Annual Statistics for Residential Customers by City, April, 2013.

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not eligible for low-income discounts.[5] More than half a million of them are middle class families with household incomes of less than $75,000 per year.[6] Nor are their overpayments trivial. In fact, one-fifth of PG&E's residential electric customers – over 1 million – now pay an average of $574 a year in excess of the average residential rate.[7]

Today's skewed, severely inclining tiered electric rates, and their inequitable impact on customers throughout PG&E's service territory, also are very challenging for customers to understand. Market research has shown that a majority of customers do not understand current "tiered" electric rates and many prefer a simpler rate structure.[8] Over half of PG&E customers do not even know they are on a "tiered" rate,[9] and many do not understand how the tiered rate structure – and their energy consumption – drive their utility bills.

High upper-tier rates also create bill volatility. A typical customer with only modest amounts of usage can experience much higher bills during the hottest summer months, merely by driving their modest usage from Tier 2 up into the sharply higher cost usage rates in Tier 3 and possibly Tier 4. This has led to customer frustration,

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[5] Based on sample of PG&E's residential customers responding to 2009 Residential Appliance Saturation Survey (RASS), PG&E matched reported income levels to 2012 usage data from PG&E billing files.

[6] *Id.* Of the 865,000 non-CARE lower income households with annual incomes between $30,000 and $60,000, over one-third have high usage and pay an average annual rate that exceeds the residential class average. Similarly, of the 1 million non-CARE moderate income households in the $60,000 to $100,000 annual income range, over half have high usage and pay an average annual rate that exceeds the residential class average. In contrast, over 40 percent of the nearly 1.1 million higher income households with incomes exceeding $100,000 per year have low usage and pay an annual average rate below the residential class average.

[7] PG&E Rate Data Analysis, 2012 Annual Statistics for Residential Customers by City, April, 2013.

[8] "Residential Rate Tiers Survey," King Brown Partners, June, 2012, p. 16.

[9] "RROIR Customer Survey Findings," Hiner and Partners Inc., April 16, 2013.

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confusion and dissatisfaction because bill increases are disproportionate compared to the customers' actual changes in usage.

Upper tier rates also distort the impacts of changed revenue requirements on customer bills. Over the next several years, in keeping with California's energy and environmental policy goals and requirements, PG&E needs to make significant investments in infrastructure to improve system reliability and safety, as well as to increase our clean energy resources. PG&E's customers support these utility system investments needed to maintain and improve service, but if the costs are not shared more evenly among all customers who benefit, PG&E and other California investor-owned utilities and policymakers risk a significant consumer backlash.

Fortunately, a balanced solution is within reach. In June, 2012, the California Public Utilities Commission initiated this public rulemaking to consider the problems with the broken rate structure, and the structural reforms needed to fix them.[10] In addition, the California Legislature is currently considering a bill, AB 327 (Perea), that would restore the Commission's traditional authority and obligation to design a fair and equitable rate structure for residential electric customers in open and public proceedings.[11]

The Commission's rulemaking recognizes and reaffirms a cornerstone of public utility regulation in California: that the price of electricity should reflect its cost.[12] The

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[10] *Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations*, R.12-06-013, June 21, 2012.

[11] AB 327 (Perea), http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_0301-0350/ab_327_bill_20130423_amended_asm_v98.pdf. AB 327 was approved by the California Assembly Utilities and Commerce Committee by a 15-0 vote on April 15, 2013, and by the California Assembly by a 66- 4 vote on May 23, 2013. The Committee analysis of the bill is available at http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB327&search_keywords=.

[12] R.12-06-013, pp. 10-11, June 21, 2012.

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Commission has long held that "just and reasonable rates" must be cost-based, ensuring that all customers in all customer classes receive clear and appropriate price signals, fairly based on the cost of serving them.[13] Cost-based rates encourage efficient use of electricity and discourage uneconomic decision-making by consumers. The Commission's rulemaking also recognizes that the Legislature has authorized limited exceptions to cost-based electricity pricing, in order to ensure that an affordable, basic amount of electricity is provided regardless of climate, heating fuel or medical needs,[14] and that low-income ratepayers are not over-burdened by monthly energy expenditures.[15] Accordingly, after extensive public comment, the Assigned Commissioner and Administrative Law Judges have adopted a list of principles for optimal rate design that are intended to be applied to rate design proposals filed in this proceeding.[16]

Summary of PG&E's Rate Design Reform Proposal

PG&E supports the rate design principles issued by the Assigned Commissioner and ALJs, and has developed a balanced proposal for structural reform consistent with these principles. PG&E's Proposal also provides customers with meaningful choices and more control over their electric bills. To that end, PG&E's Rate Design Reform Proposal:

- Offers **two basic electric rate plan options** that enable customers to choose a plan that works best for them. These include:

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[13] R.12-06-013, pp. 9-11, June 21, 2012.

[14] R.12-06-013, pp. 6-7, 10-11, June 21, 2012.

[15] R.12-06-013, pp. 8-9, June 21, 2012.

[16] *Administrative Law Judge's Ruling Requesting Residential Rate Design Proposals*, R.12-06-013, p. A1, March 19, 2013.

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- A **two-tiered standard residential electric rate,** with baseline allowances that allow for continued relief in the warmer climates across PG&E's service territory where summer usage tends to be higher;[17] and
- **A Time-of-Use (TOU) electric rate** with no tiers to engage those customers who are able to shift their load during the day.[18]

A "standard" electric rate plan is one on which customers who express no preference are placed, while retaining the option to choose another non-"standard" rate plan at a future time.

- Offers all other residential electric rate structures as optional riders to the basic rate plans:
  - **CARE program - a flat percentage discount off the total bill to simplify and improve transparency to customers;**
  - **Critical Peak Pricing (CPP) – higher rates during critical peak periods and credits during other periods,** in order to encourage efficient energy use during the most costly hours of the year; and
  - **Green Option - a premium charge to customers who choose more renewable energy than provided with basic rates**.
- **Captures a reasonable portion of fixed customer service costs through a monthly fixed fee,** while lowering volumetric charges commensurately.

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[17] PG&E is not proposing flat, non-tiered rates at this time, but supports the public policy goal of moving toward flat rates over time, for the same reasons as endorsed by other utilities and policymakers, such as SMUD ("SMUD Set to Lead on Electricity Pricing," Sacramento Bee, May 16, 2013, http://www.sacbee.com/2013/05/08/5402834/smud-set-to-lead-on-electricity.html).

[18] PG&E's new Electric Vehicle rate (Schedule EV) that will go into effect later this year is an example of a TOU rate option with no tiers.

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- **Rather than immediately implementing the new standard rate plans, gradually transitions customers** by changing rate values over time to manage bill impacts and allow time for effective customer outreach to educate customers on standard and optional rate plans.

By offering residential electric customers a portfolio of meaningful rate plan options, rather than a "one-size-fits-all" rate design, PG&E stands a much better chance of achieving the majority of its and the Commission's key principles and policies.

Customer understanding and acceptance of new rates will be a key indicator of the success of residential rate reform. PG&E's proposed rate design will be phased in over time to allow for enough outreach and education to minimize customer confusion and avoid bill shock. To accomplish this, PG&E proposes several transition principles:

1. **Customers will not be moved to a rate plan** they do not choose. New rates will be offered as options, and as noted above, the rates will be changed slowly over time to manage bill impacts.
2. **Customers will be able to choose and prepare for change** through meaningful outreach and education.
3. **Changes to rate structures, charges and discounts will be introduced gradually** to avoid bill shocks. For example, a monthly fixed fee could start at a low level and slowly be increased over time toward cost. The cost of the CARE discount could be slowly adjusted from the current average of 47 percent discount to an appropriate level, including through better targeting and program efficiency.
4. **The transition will take time** and require different phases of activity. For example, initial changes would be introduced after the CPUC decision in this

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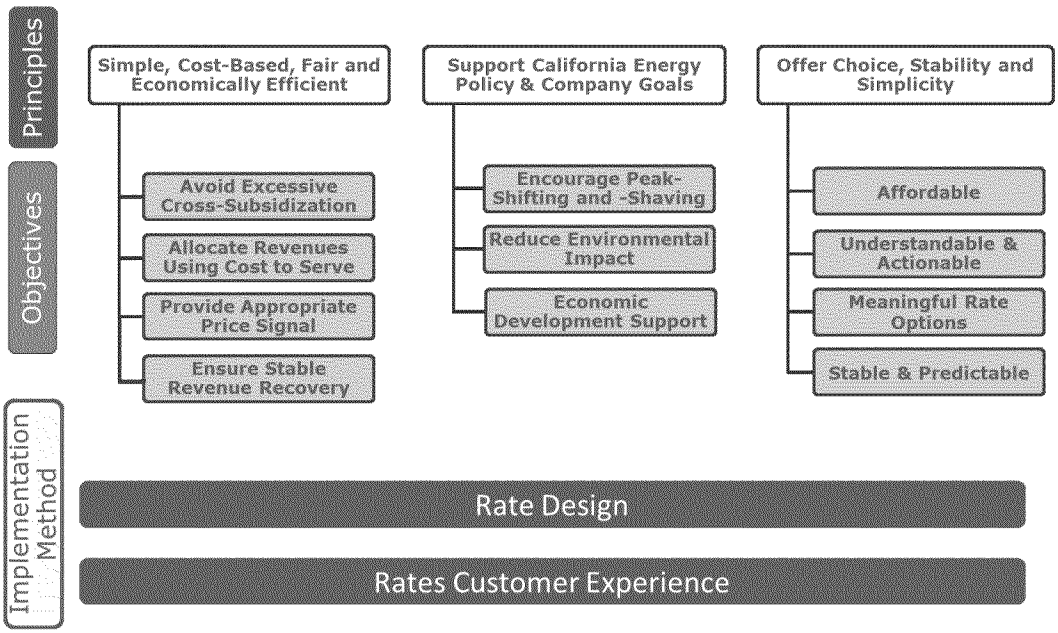
proceeding, consistent with legislative authority. Targeted outreach and education to customers with assurance of adequate funding and cost recovery will precede the implementation of new rate options. Over time, the transition to different rate options will correct the unfair rate structure that has been embedded in rates over the past decade.

PG&E's Rate Design Reform Proposal embodies PG&E's long-term customer "vision" and priorities, consistent with its overall goal of ensuring that PG&E's utility services are safe, reliable, and affordable. Figure 2 summarizes PG&E's residential electric rate design "vision":

FIGURE 2
PACIFIC GAS AND ELECTRIC COMPANY
PG&E RATE DESIGN VISION



Upon enactment of legislation that returns authority to the CPUC to review and approve changes in the residential electric rate structure, PG&E intends to implement its Electric Rate Design Reform Proposal by filing a formal ratesetting application at the CPUC requesting specific changes to residential electric rates, including details of a

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reasonable transition period to ensure that customers fully understand the new rate options available to them and that the changes to annual electric bills are reasonable, fair and manageable.

Accordingly, PG&E requests that the CPUC in this rulemaking proceeding approve the policies and goals of PG&E's Rate Design Reform Proposal, subject to the opportunity for the CPUC, stakeholders and customers to review the specific details in PG&E's subsequent ratesetting application.

In the chapters below, PG&E shows in more detail how its Rate Design Reform Proposal will fix the broken electric rate structure in California, and provide greater fairness, equity, efficiency, and simplicity for residential electricity customers.

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1. CHAPTER ONE: PG&E's Electric Rate Design Reform Proposal

The foundation of PG&E's residential Electric Rate Design Reform Proposal is that customers should be engaged to make well-informed choices from a menu of understandable rate options that fairly reflect the cost of serving those customers and provide incentives for demand response, peak shaving, peak shifting, and/or conservation. To engage customers, residential rate design must balance simplicity, efficiency, and stability. PG&E's pro-active customer choice approach will result in more engaged customers who are more satisfied and therefore more likely to provide peak load reduction and other more efficient uses of energy.

PG&E's Rate Design Reform Proposal will offer customers a variety of rate options, including rates with reasonable, equitable tier structures. Rate choices for residential electric customers will include two basic rate options: a standard tiered rate, and an optional, non-tiered time-of-use (TOU) rate plan, with additional rate riders such as an option for critical peak pricing (CPP) as an overlay available on either the standard tiered or optional TOU rate.

PG&E's Rate Design Reform Proposal provides the following changes to residential electric rates over a reasonable transition period:

- Restores gradual tiered rate differentials to bring rates closer to cost-of-service, with two tiers for rates that need a tiered structure while continuing to provide a basic amount of electricity at an affordable price.
- Offers TOU electric rate options with no tiers for those customers who are able to shift their load during the day.

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- Includes reasonable monthly fixed fees (also called customer charges) in all residential rates, with a goal of setting these monthly fixed fees over time to recover a reasonable and equitable portion of the fixed costs PG&E incurs to provide and maintain services that do not vary with the customer's actual usage.
- Provides CPP as an option that customers can choose in combination with either TOU or non-TOU rates.
- Makes California Alternate Rates for Energy (CARE) discounts a simple percentage of the non-CARE rates. The objective is to set CARE discounts over time at levels sufficient to ensure affordability for basic needs, while taking into account that historical CARE discounts have been set at 20 percent of non-CARE rates, and make other changes in the CARE program to more effectively target and deliver energy assistance to help low-income customers pay their electricity bills based on updated needs assessments.

By adopting PG&E's Rate Design Reform Proposal, the CPUC will make residential electric rates more equitable, understandable, and stable. However, PG&E's Rate Design Reform Proposal requires that the California Legislature adopt needed changes in law, such as passage of AB 327, to return to the Commission its traditional authority to design reasonable and equitable rates.[19] The rate restrictions maintained in 2009 by Senate Bill (SB) 695 have not permitted the unfair rate structure to be fixed.[20] These restrictions must be eliminated and the authority to adjust all residential

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[19] Assembly Bill 327 (Perea), http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB327&search_keywords=.

[20] Stats. 2009, Ch. 337, Secs. 4 and 5, enacting Public Utilities Code Sections 739.1 and 739.9.

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rates, including non-CARE and CARE Tier 1 and 2 rates and the ability to set monthly fixed fees, must now be returned to the Commission.

PG&E's Rate Design Reform Proposal recognizes that a reasonable transition period will be necessary in order to allow customers adequate time to understand, choose and adapt to the new rate design structure. PG&E's approach to implementing its Rate Design Reform Proposal would be to engage customers to make well-informed choices from a menu of understandable rates that provide incentives for demand response, peak shaving, peak shifting, and/or conservation. PG&E's plan will:

- Provide customers with a set of relevant and appealing rate options described above, all of which are simple enough to be effectively explained.
- Educate and provide customers a variety of tools to help them understand their energy use, how it impacts their bills, and then how they can choose the best rates for their circumstances.
- Provide a continuing focus on customer tolerance for change at any given time.

To the extent rates are understandable, fair, and stable, PG&E will be better able to recommend and encourage customers to participate in rates that both achieve the Commission's demand response goals and provide opportunities for customers to better control their energy bills.

1.1. Technology Advancements Will Support Customer Engagement in Choosing Among Rate Plans

PG&E's long-term strategy for residential customers choosing TOU rates includes not only installing SmartMeter™ technology (a process that is now almost complete), but also providing customers with tools to help them understand their rate plan options and make choices that are best for them. PG&E customers whom social

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scientists categorize as "Innovators" and "Early Adopters" are already savvy energy users who understand how their behaviors impact their bills.[21] However, the majority of PG&E's residential customers find current tiered rates confusing,[22] and require help to understand how their bills are calculated, as well as how their behavior impacts their bills.

PG&E already has implemented an online rate analysis tool that customers can access in their online "My Energy" account.[23] The rate analysis tool allows customers with SmartMeters™ to see which rate choice would result in the lowest bill under varying "energy saving behavior" scenarios, if their usage were the same as the previous 12 months. Additionally, the rate analysis tool enables customers to perform simple "what if" scenarios to help them understand how their bill might change under different rates if they can reduce or shift their usage. Another tool allows customers with SmartMeters™ to observe their historical monthly, daily, and hourly energy usage.[24] Part of encouraging customer adoption of TOU rates is education about the availability and benefits of this tool, which has already begun. These tools will help customers obtain near-real-time individualized advice on rate options, as well as education on energy use behaviors that can help them control their energy usage and save money on their bills.

In 2011, PG&E also launched the Green Button in response to the White House's challenge to design a standard format by which customers could access their

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[21] "Diffusion of Innovations," Everett M. Rogers, FREE PRESS, 2003, Chapter 7.

[22] "Residential Rate Tiers Survey," King Brown Partners, June, 2012, p. 16.

[23] PG&E's "My Usage>My Rates" web page, within the "My Energy" Portal at www.pge.com compares bill amounts for available rate plans based on nine to 12 months historical data.

[24] PG&E's "My Usage" web page, within the "My Energy" Portal at www.pge.com provides various electricity and gas usage measurements.

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energy-usage data on-line and download the data in a standard format.[25] PG&E was among the first utilities in the country to empower customers with their own data in this previously-unavailable portable format. Making detailed energy usage information available in a standardized file format encourages development of third-party applications that can increase awareness of energy consumption and enables customer engagement in energy conservation, peak-shifting, and peak-reduction behaviors.

1.2. Customer Engagement Is Tailored to the Needs of Different Segments of Customers

The customer outreach and marketing strategy PG&E envisions for its Rate Design Reform Proposal, including non-tiered optional TOU rates, will take into account the hard reality that up to half of all residential customers currently do little or no conservation or peak load shifting and are most likely to resist any attempts at influencing their energy use behavior absent more aggressive outreach and education.[26]

PG&E believes that its Rate Design Reform Proposal, with appropriate and robust customer outreach, can overcome these hurdles within a reasonable time horizon, and that load reduction benefits can be achieved through the gradual, voluntary migration of customers choosing new, more customer-friendly rate options including TOU rates. Under this approach, problems with backlash from highly resistant customers can be avoided.

PG&E's Rate Design Reform Proposal has been developed with consideration for the attitudes and preferences of PG&E's residential customers. Qualitative and

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[25] A "Green Button – Download My Data" link is provided on PG&E's "My Usage" web page within the "My Energy" Portal at www.pge.com.

[26] "Diffusion of Innovations," Everett M. Rogers, FREE PRESS, 2003, Chapter 7.

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quantitative research over the past several years has provided the following key insights for residential rate design:

- **Customers want to choose rather than be defaulted to different rate plan options**
    - The majority of customers want rate plan options that work with their lifestyle, instead of a single "one-size fits all" standard rate plan and limited alternatives
    - Those customers that have opted into alternative rate plans are more satisfied
    - There is no compelling evidence from other electric utility jurisdictions that defaulting customers to a TOU rate plan is a successful approach to engaging customers in the behaviors a TOU rate is designed to encourage
    - There is a significant, identifiable and targetable group of customers that could be transitioned to an opt-in TOU rate over time with an appropriate amount of outreach
- **Customers want a simple way to be able to save money on their electric bills**
    - Customers currently have a very poor understanding about how their energy use behavior impacts their bills
        - Those who opt in to a rate plan believe they have more control over their bills

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- Customers prefer more simple rate structures that accurately reflect costs, such as flat, two-tier and two-period TOU rates that don't require much effort to understand
  - Customers do not believe a four-tiered rate is simple or fair
- Customers believe TOU rates would encourage them to conserve energy better than a four-tiered rate.

Evidence from focus groups also has shown that, despite being confused by the current tiered rates, customers are very enthusiastic about the idea of choosing a rate that is adapted to their needs – provided they get help and "actionable" information to choose the plan that best maps to their usage. For example, given time to understand SmartMeter™ functionality, many PG&E customers have stated in focus groups that they can envision using their SmartMeters™ as a tool to help them better understand their usage and allow them to choose a rate plan that helps them reduce their bills.

Although PG&E's optimal rate design cannot be achieved immediately or without trade-offs, the primary goals remain a standard electricity rate structure that is more fair and affordable for all customers by moving rates closer toward the cost of service. In many ways, PG&E's Proposal represents a return to the key principles for cost-based residential electric rates that guided California rate policy before the energy crisis of 2000-2001. These same basic principles have continued to apply to residential gas rates, which have never been subject to the same legislative constraints as the electric rates.

PG&E's Rate Design Reform Proposal substantially mitigates the massive cost-shift problem in the current residential rate structure over a reasonable time frame, and retains the CARE program and the baseline rate structure. This ensures that every

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PG&E residential customer has access to an affordable amount of electricity to meet their basic necessities and to help low income customers pay their electric bills.[27] PG&E's Proposal reforms the CARE and non-CARE rates over a reasonable transition period, in order to better target electric bill subsidies to the neediest customers and return the overall level of the subsidies toward pre-energy crisis levels. The resulting level of assistance will be determined in the appropriate Commission proceedings and take into account updated needs assessments.

PG&E's Rate Design Reform Proposal also is informed by extensive benchmarking PG&E has conducted regarding rate design practices followed in other states and by other public utilities in California.[28] The benchmarking data demonstrate that the vast majority of California publicly-owned electric utilities and many large electric utilities outside California routinely include a monthly fixed fee on residential customers' electric bills as a means of recovering a portion of the fixed costs of their electric facilities. Similarly, many other public utilities, such as water utilities, also routinely include a monthly fixed fee to more fairly recover fixed costs.[29] PG&E's benchmarking also revealed that the overwhelming majority of large electric utilities surveyed outside California – 22 of 25 – have two or fewer tiers for their residential electric rates. PG&E's Rate Design Reform Proposal will not only bring PG&E in synch with other electric utilities in California, it will also align with the consensus rate design principles adopted by major electric utilities outside California.

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[27] Public Utilities Code Sections 382 and 739.

[28] PG&E Survey of California Public Utilities Rates, April, 2013; PG&E Survey of 25 Large Electric Utilities Outside California, 2012.

[29] See, e.g., remarks of CPUC President Peevey, CPUC Business Meeting, May 26, 2011, transcribed by PG&E from a recording.

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In Chapter 2, below, PG&E demonstrates that its Rate Design Reform Proposal complies with the CPUC's rate design principles and responds to the questions posed by the CPUC in this proceeding.

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2. CHAPTER TWO: PG&E's Electric Rate Design Reform Proposal Achieves the Goals of the CPUC's Rate Design Principles

2.1. PG&E's Electric Rate Design Reform Proposal Fixes the Failures of the Existing Residential Electric Rate Design Structure

PG&E's Rate Design Reform Proposal will fix four gross inequities in the current structure:

1) ***Over a million moderate and high usage PG&E customers are charged above-cost rates that are unfair and contrary to cost-of-service ratemaking;***
2) ***Far below-cost CARE rates to 1.2 million PG&E customers provide inaccurate price signals and fail to effectively target appropriate benefits to the most needy customers;***
3) ***Lack of monthly fixed fees unfairly allocates the fixed costs of PG&E's electric service to higher usage PG&E residential customers while other customers avoid paying for PG&E services that also benefit them; and***
4) ***A multitude of different residential tiers and rate schedules confuse customers and discourage them from choosing more efficient rate options such as TOU rates that can help them conserve and save on their electric bills.***

As described below, PG&E's Rate Design Reform Proposal fixes each of these problems over a reasonable transition period.

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2.1.1. Background – Causes of Current Broken Residential Electric Rate Structure

To fix the current broken rate structure, it is necessary to understand how it became broken in the first place. For decades preceding the 2000-2001 energy crisis, California had a relatively simple two-tiered inclining block system for electric rates, with the first block moderately discounted and the upper tier slightly higher than the average residential rate as an offset. This structure was first authorized by the Warren-Miller Lifeline Act in 1976.[30] The goals of this Act were two-fold: (1) ensuring affordable rates for essential energy needs, and (2) encouraging electricity conservation.

The original Warren-Miller Lifeline approach was refined through the Baseline Act of 1982, but because it put restrictions on the lower tier price, upper tier prices mushroomed to a Tier 2-to-Tier 1 ratio of 1.74-to-1 by 1987, causing customer backlash. In response, the Legislature passed Senate Bill (SB) 987 in 1989, requiring the CPUC to rapidly phase-in a return to a more "appropriately gradual [tier] differential," and granting the CPUC the flexibility to do so.[31]

During the 1990s, the CPUC returned rates to a gradual differential between the two rate tiers, resulting in a Tier 1-to-Tier 2 ratio of 1.15-to-1 (a 15 percent differential) in

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[30] Pub. Util. Code Section 739, referenced in R.12-06-13, p. 3.

[31] The Baseline Act, which was passed in 1982 (Ch. 1541, Stats. 1982), was a revision to the Warren-Miller Energy Lifeline Act of 1975 (Ch. 1010, Stats. 1975). The original Act required baseline quantities to be priced at 75 percent – 85 percent of the system average rate (SAR). In 1988, when tier differentials had climbed to a peak of 75 percent, customer complaints about high bills caused the legislature to pass Senate Bill (SB) 987, (Ch. 212, Stats. 1988). That bill included a legislative finding that rates in excess of the baseline quantity were too high and were causing inordinately high residential bills during extreme weather. SB 987 deleted the requirement that baseline rates be established at a discount of between 15 percent – 25 percent less than the SAR, and instead directed the CPUC to increase baseline rates and use the increased revenues exclusively to reduce rates for residential service above baseline. (D.88-10-062; 29 CPUC2d 448 at p. 450.) The 1988 legislative changes also required an "appropriate gradual differential."

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the years prior to the California energy crisis.[32] In addition, SB 987 introduced a program of assistance to low-income ratepayers, with the CPUC implementing a 15 percent discount for eligible customers.[33]

However, during the California energy crisis of 2000-2001, the California Legislature temporarily capped rates in the two lowest tiers in order to protect low-usage customers from soaring prices.[34] It also provided for a significant increase in low-income ratepayer assistance in order to mitigate the impacts of the crisis on customers with fewer financial resources.[35] Unfortunately, the rate caps are still largely in place more than a decade later, long after the energy crisis ended. The discount under the

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[32] To implement SB 987 for PG&E, the CPUC brought PG&E's 1988 electric rate tier differential of 5.1¢/kWh down to 1.9¢/kWh in 1992 and finally all the way to 1.6¢/kWh in 1998. (*See e.g.*, D.89-12-057, 34 CPUC 2d 199, 443 C.O.L. 94, reducing the differential for PG&E's Tier 1 and 2 by 25 percent; D.91-04-063, 39 CPUC 2d 553, 557; D.92-04-063, 44 CPUC 2d 153, 157 – 158; D.93-06-087, 50 CPUC 2d 1, 30 – 34.). (*See also* D.92-06-020 noting that SCE's residential rate tier differential ratio of 1.39-to-1 had been reduced to a ratio of 1.33-to-1 in 1991 and was on track to reach the CPUC's stated goal of a non-baseline-to-baseline rate ratio of 1.15-to-1 by the 1995 GRC, pursuant to SB 987.) The CPUC phased-in SCE's tier reduction more quickly than for PG&E, over a 3-year period, and reviewed the reductions each year in the ECAC proceeding. (D.92-06-020, 1992 Cal. PUC LEXIS 472, *87-*91; 77 CPUC 2d 471; 135 P.U.R. 4th 17.) Similarly, the CPUC established a 3-year phase-in to bring SoCalGas' baseline allowances into compliance with the statutory percentage ranges. (*See* D.90-01-015, deciding A.89-04-021, SoCalGas' annual cost allocation proceeding; 1992 Cal. PUC LEXIS 33, *146-*149; 25 CPUC 2d 3, 109 P.U.R.4th 1.)

[33] SB 987 further required that the CPUC establish a program of low income rate assistance ("LIRA", the predecessor to today's CARE program), which then had a flat 15% discount. SB 987's baseline reductions were "inextricably linked" with this program, to "protect low income ratepayers from the rate increases that accompany baseline reform." (D.89-09-044, 32 CPUC 2d 406, 409, 412.)

[34] The initial energy crisis legislation was AB 1X, which created a new residential tier for all usage between 100 percent and 130 percent of baseline, allowing no increases on usage below 130 percent of baseline. Later, SB 695, enacting Public Utilities Code Sections 739.1 and 739.9 in 2009, rescinded AB 1X, but replaced it with numerous other restrictions, such as non-CARE Tier 1 and 2 increases limited to CPI plus 1 percent, but no less than 3 percent and no more than 5 percent, and CARE increases limited to 0 percent to 3 percent tied to the CalWORKS index. In addition, the Tier 1 rate for non-CARE customers was restricted to be no more than 90 percent of the system average electric rate.

[35] Senate Bill 5 from the First Extraordinary Session (SB X1, Stats. 2001, Ch. 7), augmented funding for the CARE program by a one-time amount of $100 million. Decision 01-03-082 and Decision 01-06-010 then increased the eligibility for CARE assistance from 150 percent of federal poverty guidelines to 175 percent of federal poverty guidelines, and the level of the discount from 15 percent to 20 percent. In addition, Decision 01-01-018 exempted CARE customers from the emergency 1 cent surcharge, and Decision 01-05-064 exempted CARE customers from the Tier 3, 4, and 5 surcharges, effectively increasing the CARE discount well above the 20 percent putative level adopted in Decision 01-06-010. Later, CARE eligibility was extended to 200 percent of federal poverty guidelines.

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California Alternate Rates for Energy (CARE) program has steadily increased so that it now averages 47 percent for PG&E's participating customers, compared to the pre-energy crisis level of 15 percent.[36] Because CARE rates have been frozen for much of the last two decades, CARE rates today effectively are 41 percent lower in real terms than they were in the early 1990s.[37]

As a result of these two "temporary" measures capping baseline rates and expanding the CARE program, the costs of the baseline and CARE subsidies have grown by hundreds of millions of dollars, with a significant amount of the costs subsidized by a minority of higher usage non-CARE customers. The CARE participation level and amount of CARE subsidies are shown in Tables 2-1 and 2-2, below.

TABLE 2-1
PACIFIC GAS AND ELECTRIC COMPANY
2012 CARE HOUSEHOLDS AND DISCOUNTS

Line No.	Highest Tier over 12 Months	CARE Households	Total CARE Discounts	% of CARE Households	% of CARE Discounts
1	Tier 1	240,000	$29,000,000	19%	4%
2	Tier 2	160,000	30,000,000	12%	4%
3	Tier 3	355,000	108,000,000	28%	15%
4	Tier 4	315,000	203,000,000	25%	27%
5	Tier 5	210,000	370,000,000	16%	50%
6	CARE	1,280,000	$740,000,000	100%	100%

[36] Compare Decision 00-07-020, approving CARE program funding at a 15 percent discount, with Decision 12-08-044, approving CARE program funding with an effective discount off the total bill of 47 percent, after taking into account CARE customer exemptions from costs borne by non-CARE customers.

[37] CARE rates under 130 percent of baseline were frozen by AB 1X. Subsequently, through GRC Phase II settlements, a CARE Tier 3 rate was not initiated for PG&E until authorized by SB 695, and adopted by the Commission, effective November 1, 2011. For the decrease in CARE rates in real terms, *see* Application 13-04-012, PG&E's 2014 GRC Phase II, Exhibit PG&E-1, pp. 3-21 line 11 to 3-22 line 1; *see also* Application 12-02-020 (2012 RDW) PG&E, Quadrini, Exhibit PG&E-4, p. 2-6, lines 8 – 9, and TURN, Record Transcript of William Marcus, p. 304 lines 13 – 28 and PG&E, Quadrini, Exhibit PG&E-5, p. WP 2-10.

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TABLE 2-2
PACIFIC GAS AND ELECTRIC COMPANY
CARE PARTICIPANTS AND DISCOUNTS SINCE 2000

Line No.	Year	CARE Households	Total CARE Discounts
1	2000	200,000	$30,000,000
2	2001	400,000	$80,000,000
3	2002	560,000	$130,000,000
4	2003	650,000	$150,000,000
5	2004	730,000	$190,000,000
6	2005	800,000	$220,000,000
7	2006	940,000	$380,000,000
8	2007	970,000	$390,000,000
9	2008	950,000	$390,000,000
10	2009	1,020,000	$520,000,000
11	2010	1,230,000	$720,000,000
12	2011	1,300,000	$790,000,000
13	2012	1,280,000	$740,000,000

Table 2-2 illustrates how dramatically the CARE program and CARE discounts have grown over the past 13 years. The landmark development giving rise to this rapid increase in CARE discounts was the energy crisis of 2000-2001. Since the energy crisis, for over 12 years, nearly all of the rising costs have fallen on non-CARE customers in the highest residential electric rate tiers, causing upper tier rates to skyrocket and penalizing those who need to use higher-than-average amounts of energy. As a result, as Table 2-3 below shows, the rates in the highest two tiers are 186 and 210 percent, respectively, of the average price of residential service.

TABLE 2-3
PACIFIC GAS AND ELECTRIC COMPANY
COMPARISON OF CURRENT (E-1) ELECTRIC RATES TO THE RESIDENTIAL AVERAGE RATE

Line No.	Tier	5/1/2013 Rates	Percent of Average
1	Tier 1	$0.13230	79%
2	Tier 2	$0.15040	90%
3	Residential Average	$0.16772	100%
4	Tier 3	$0.31114	186%
5	Tier 4	$0.35114	210%

The important “takeaway” from these causes of the problems with the current residential electric rate structure is that no one single decision or law is responsible for

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the "broken" structure. Instead, multiple laws and decisions over more than a decade have cumulatively and often unintentionally shifted hundreds of millions of dollars of the cost of electricity service among different segments of residential electric customers for reasons largely unrelated to cost or equity. At its core, it is the legislative restrictions found in AB 1X and SB 695 that have caused and perpetuated the current broken residential rates, and tied the CPUC's hands in its ability to fix the inequities.

In this rulemaking proceeding, the CPUC has an opportunity to adopt coordinated public policies to begin to fix the broken structure and return residential electric rates to fair and cost-based levels on a consistent basis among all three investor-owned electric utilities in California. Even so, however, such policies cannot be implemented unless and until legislative reform are adopted that return full residential ratemaking flexibility and jurisdiction to the CPUC.

2.1.2. PG&E's Rate Design Reform Proposal Moves Residential Electric Rates Closer to Cost-of-Service Over a Transition Period by Streamlining the Rate Tiers and Narrowing the Differential Between the Lower Tier "Baseline Rate" and Upper Tier

PG&E's current non-CARE Tier 4 rate is 35.1 cents per kilowatt-hour (¢/kWh) and its Tier 3 non-CARE rate is now 31.1¢/kWh – both far above PG&E's average non-CARE Schedule E-1 residential rate of 19.4¢/kWh. On the other hand, PG&E's current subsidized lower-tier rates are well below the system average, with non-CARE households in Tier 1 at 13.2¢/kWh, and Tier 2 at 15.0¢/kWh. The baseline statute in the Public Utilities Code requires that there be an "appropriate gradual differential" in the residential rate tiers. The statute provides:

> *In establishing these [tiered] rates, the commission **shall avoid** excessive rate increases for residential customers and **shall establish** an*

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appropriate gradual differential between the rates for the respective blocks of usage. (PUC §739(d)(1), emphasis added.)

Today, contrary to the baseline statute, there is an 18.3¢/kWh gap between the top tier rate and the average rate paid by PG&E's residential customers. But under the two-tier structure in place during the decade prior to the energy crisis, the CPUC brought what it thought at the time was a too-high ratio of 1.39-to-1 down to its goal of 1.15-to-1.[38] Not only do today's disparate rates already run afoul of the baseline statute's requirement of an "appropriate gradual differential,"[39] but the imbalance is expected to continue and only get worse in future years unless the CPUC acts now.

These rate disparities bear no relation to PG&E's marginal costs or any other measure of cost of service. Rather they are the direct result of post-energy crisis legislative constraints on non-CARE and CARE Tier 1 and 2 rates that continue to force PG&E's upper tier non-CARE residential customers (currently 22 percent of residential sales) to bear most residential cost increases.

For the greater part of almost two decades, from the time it was adopted in 1982 until 2001, the baseline statute formed the basis for a two-tier residential rate structure, with a modest tier differential. During that period, the highest differential between PG&E's two electric rates tiers was just 5.1¢/kWh in 1988, dropping to 1.9¢/kWh in 1992, with further decreases until upper tier rates were set just 1.6¢/kWh above the lower tier baseline rate (for a 15 percent tier differential) from 1998 until the California

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[38] PG&E 1993 GRC Phase II D.93-06-087, 50 CPUC 2d 1, 30-34.

[39] Public Utilities Code Section 739(d)(1).

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Energy Crisis in 2001.[40] In the 12 years since then, PG&E has had as many as five tiers, and currently has the following four-tier structure:

Tier 1: usage between zero and 100 percent of Baseline;

Tier 2: usage between 100 and 130 of Baseline;

Tier 3: usage between 130 and 200 percent of Baseline; and

Tier 4: usage above 200 percent of Baseline.

Thus, as a result of legislative restrictions that largely tie the Commission's hands, PG&E's non-CARE residential rates since the energy crisis have gone from a two-tiered structure with just a 1.6 cents per kWh rate differential to a four-tier rate structure with a 21.9 cent difference between PG&E's highest and lowest rates. This steeply inclining structure has no basis in cost, is grossly inequitable to upper-tier users throughout PG&E's service area, and is the direct result of the post-energy crisis legislative constraints on lower-tier rates that continue to force PG&E non-CARE upper-tier sales to bear a disproportionate share of residential cost increases. This inequity is compounded by the fact that Tier 3 usage is considered a normal level of usage for many families, especially during the summer months with air conditioning needs, which means that average, moderate-income families are being charged more than 30 cents per kWh for electricity.

As shown in Figure 1 above, PG&E's non-CARE upper-tier rates today continue to be far above the average residential rate (shown as the dotted purple line in Figure 1). Consequently, upper-tier usage continues to subsidize lower-tier and CARE usage, where the rates are all below the class average rate. Table 2-4, below, shows how rates have changed in percentage terms since the energy crisis. Since 2001,

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[40] *See* Section 2.1.1, above.

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Tier 3 and 4 rates have increased by 240 and 270 percent, respectively, causing a huge gap between the Tier 2 and 3 rates. While the differences between the current Tier 1 and 2 rates, and the even larger differences between the non-CARE Tier 3 and 4 rates, might be fairly characterized as an "appropriate gradual differential," by no stretch of the imagination can the 16.1 cent per kWh chasm between PG&E's current Tier 2 and 3 rates be considered anything close to "gradual."

TABLE 2-4
PACIFIC GAS AND ELECTRIC COMPANY
2001 PRE-ENERGY CRISIS NON-CARE E-1 RATES VS. CURRENT E-1 RATES PER KWH

Line No.	Tier	January 2001 E-1 Rates(a)	May 2013 E-1 Rates	Percent Change 2001-2013
1	Tier 1	$0.11430	$0.13230	16%
2	Tier 2	0.12989	0.15040	16%
3	Tier 3	0.12989	0.31114	240%
4	Tier 4	0.12989	0.35114	270%

(a) Rates effective January 4, 2001.

In a similar fashion, Table 2-5 shows how the rates by tier have changed in real terms since the energy crisis. The second column shows January 2001 rates by tier in nominal terms, and the third column escalates those 2001 rates by inflation to show what they would be in 2013 dollars. In comparison, the fourth column shows the actual rates in 2013. As the fifth column shows, the Tier 1 and 2 rates have declined in real terms since the energy crisis – the result of years of being frozen, followed by just modest increases since the enactment of SB 695. But the Tier 3 and 4 rates have increased in real terms by very large amounts – 80 and 103 percent, respectively. Today, customers whose usage is in the upper tiers are clearly providing a considerable subsidy to those whose usage remains in the lower tiers.

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TABLE 2-5
PACIFIC GAS AND ELECTRIC COMPANY
JANUARY 2001 AND 2013 NON-CARE E-1 RATES: NOMINAL VS. REAL

Line No.	Tier	January 2001 Rates	2001 Rates in 2013 Dollars	May 2013 Rates	Percentage Real Rate Change
1	Tier 1	$0.11430	$0.15197	$0.13230	-13%
2	Tier 2	0.12983	0.17261	0.15040	-13%
3	Tier 3	0.12983	0.17261	0.31114	80%
4	Tier 4	0.12983	0.17261	0.35114	103%

Although the baseline statute does not specify what the minimum percentage differential should be, there is strong evidence from CPUC decisions between 1988 and 2001 that the CPUC viewed an "appropriate gradual differential" as being 15 percent, or a ratio of 1.15-to-1. The CPUC reduced the high tier differentials for the various utilities on an annual, phased basis between 1989 and 1995, to ameliorate bill volatility.[41] In keeping with this 15 percent differential, PG&E's immediate pre-energy crisis baseline (Tier 1) rate was set at the very modest discount of **just 5 percent below the average rate**, and its over-baseline rate (Tier 2, in a two-tier structure) was set at a modest premium of **just 9 percent above the average rate**, with the CPUC concluding that this total differential of about 15 percent sent an adequate conservation price signal.[42]

But, fast forwarding to May 1, 2013, the ratio of today's average Tier 3 over Tier 2 rate, is 2.07-to-1 – well over 1990 electric rate tier ratios that the CPUC found needed to be reduced (e.g., the CPUC declared in 1992 that SCE's tier ratio of 1.39-to-1 needed to be gradually reduced each year until it reached a 1.15-to-1 ratio by 1995.)[43]

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[41] *See* D.89-09-044, and D.90-06-020, 1992 Cal PUC LEXIS 472, *87-*91; 44 CPUC 2d 471; 135 P.U.R. 4th 17.

[42] *See* A.12-02-020 (PG&E's 2012 RDW), Quadrini, Exhibit (PG&E-2, p. 2-9, lines 9 – 11).

[43] D.92-06-020, 44 CPUC 2d 471, 506.

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Today, PG&E's current upper tier rates are higher in absolute terms than those in place for both SCE and SDG&E:

TABLE 2-6
PACIFIC GAS AND ELECTRIC COMPANY
COMPARISON OF STANDARD 2013 NON-CARE RATES BY TIER AND UTILITY(a)

Line No.	Tier	PG&E ($/kWh)	SC&E ($/kWh)	SDG&E ($/kWh)(b)
1	Tier 1	$0.132	$0.128	$0.148
2	Tier 2	0.150	0.160	0.171
3	Tier 3	0.311	0.271	0.265
4	Tier 4	0.351	0.311	0.285
5	Monthly fixed fee ($/month)	N/A	$0.91	N/A

(a) SCE's rates are based on 53 percent baseline quantities for basic customers, and 60 percent in the summer and 70 percent in the winter for all-electric customers. PG&E's and SDG&E's rates are based on 55 percent baseline quantities, except for 65 percent baseline quantities in the winter for all-electric customers.

(b) SDG&E's rates are a simple average of summer and winter rates.

To fix this serious problem, PG&E's Rate Design Reform Proposal reduces the number of residential rate tiers to two on its standard E-1 rate plan – the baseline rate and a single additional tier.[44] In addition, PG&E's Rate Design Reform Proposal returns PG&E's current upper tiered rates over a reasonable transition period closer to the historical 1.15-to-1 average differential previously approved by the CPUC. The fundamental driver of PG&E's Rate Design Reform Proposal is one of fairness: to make progress in reversing the inequity in the current above-cost, steeply inclining block rate design and the associated rate disparities between the lower and upper tier non-CARE rates. PG&E's Rate Design Reform Proposal will achieve this goal by moving rates closer to cost of service.

[44] Under PG&E's proposal, the Tier 1 rate would apply to usage between zero and the customer's baseline amount, and the Tier 2 rate would apply to all usage above the baseline amount. This represents a return to the tier definitions that were in effect prior to the Energy Crisis.

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2.1.3. PG&E's Rate Design Reform Proposal Provides Affordable Rates to CARE and Non-CARE Customers

PG&E's rate design reform proposal keeps the CARE rate discount by reforming the overall CARE program over time to set the level of the CARE rate discount more in line with levels that would be affordable to support basic electricity needs and taking into account the 20 percent level set just after the 2000-2001 energy crisis, versus today's actual 47 percent level.[45] At the same time, PG&E's Proposal aligns and targets the CARE discount to updated needs assessments of different segments of CARE eligible customers, including considering adjusting the level of the discount to different usage levels and other objective criteria.

SB 695 established that CARE rates can have no more than three tiers and that CARE rates may not exceed 80 percent of the corresponding non-CARE rates, excluding other costs from which CARE customers are exempt, such as the cost of the Department of Water Resources (DWR) Bond charge, the CARE surcharge and the cost of the California Solar Initiative.[46] SB 695 also purported to permit limited increases to CARE Tier 1 and Tier 2 rates under certain circumstances for the first time in nearly twenty years; however, since passage of SB 695, there have been no increases to Tier 1 and 2 CARE rates in 2010, 2011, 2012 or 2013 due to the lack of change in the index adopted in SB 695 governing increases to CARE rates.[47]

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[45] Prior to the energy crisis and for 11 years before, the low income rate discount had been 15 percent. By late 2001, following CPUC adoption of a 20 percent discount during the energy crisis, the provisions of Pub. Utils. Code Section 739.1(b)(5) established a target for the CARE discount of 20 percent.

[46] Pub. Utils. Code Section 739.1(b)(4), Stats 2009, Chapter 337, Section 4, Effective October 11, 2009.

[47] Pub. Utils. Code Section 739.1(b)(2) indexed the CARE Tier 1 and 2 increases to the annual percentage increase in benefits under the CalWORKS program as authorized by the Legislature each year. However, since SB 695 was passed in 2009, the CalWORKs index has been suspended. Thus, there has been no increase in CARE Tier 1 and 2 rates under Pub. Utils. Code Section 739.1(b)(2). *See* Application 12-02-020 (PG&E's 2012 RDW), TURN, Marcus, Record Transcript (RT). p. 309, lines 6 – 11) and DRA, Khourry, RT. p. 376, lines 5 – 26.

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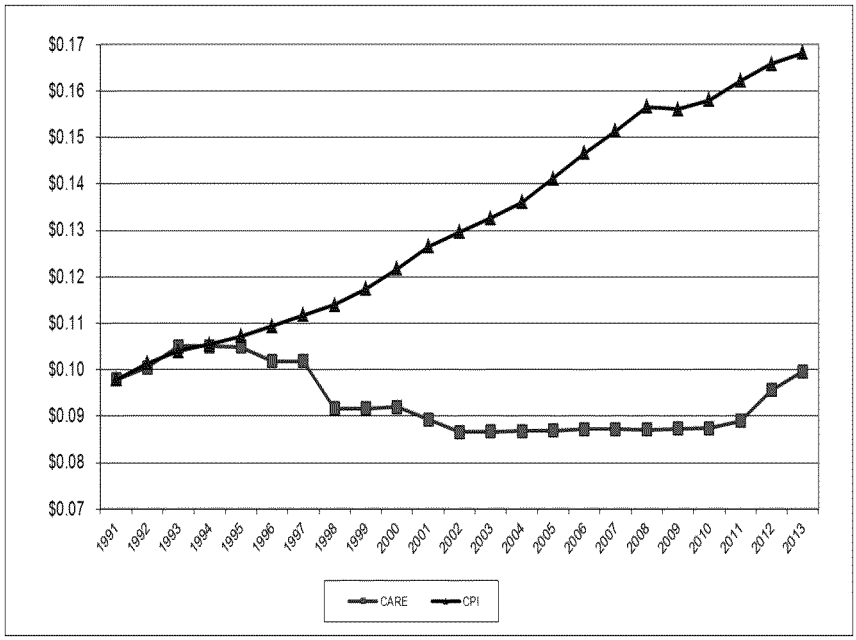
The inability to increase CARE Tier 1 and 2 rates has driven a widening gap between CARE and non-CARE rates – thus increasing the CARE discount well beyond the 20 percent level intended to the current level of 47 percent for PG&E customers. Even though a CARE Tier 3 rate was added in November, 2011, and was increased 1.5 cents/kWh in January, 2013, the disparity between lower tier rates already had increased substantially when compared to the CARE discount that was in place in 2001. As a result, as Figure 2-1 indicates below, the average CARE rate (including Tier 3) is now 41 percent lower than it was in 1991 after adjusting for inflation. This widening gap between CARE and non-CARE rates has put further unsustainable pressure on upper tier non-CARE rates to support the increasing discount.

FIGURE 2-1
PACIFIC GAS AND ELECTRIC COMPANY
AVERAGE CARE (EL-1) RATE VS. CPI
1991-2013



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Statewide, nearly 5 million customers of PG&E, SCE, SDG&E, and SoCal Gas are receiving CARE assistance,[48] and the combined overall costs of the CARE program have ballooned to nearly ten times pre-energy crisis levels, from $140 million in 2000 to approximately $1.3 billion annually for the 2012-2013 program period.[49] The growth in the CARE program combined with the current tiered structure of residential electric rates has caused the actual level of the CARE rate discount to significantly exceed the intended 20 percent discount. For PG&E, the current average CARE rate discount is 47 percent.

Moreover, for most of the post-energy crisis period PG&E – unlike the other two California investor-owned utilities – did not have a CARE Tier 3 rate. PG&E was only able to implement a CARE Tier 3 rate for the first time in November 2011, and the level of PG&E's current CARE Tier 3 rate is significantly below the similar rates of SCE and SDG&E.[50] Table 2-7 compares PG&E's CARE rates to those of the other two IOUs. All of PG&E's CARE rates remain substantially below those of the other two IOUs.

TABLE 2-7
PACIFIC GAS AND ELECTRIC COMPANY
COMPARISON OF STANDARD CARE RATES BY TIER AND UTILITY(a)

Line No.	Tier	PG&E 2013 ($/kWh)	SCE 2013 ($/kWh)	SDG&E 2013 ($/kWh)
1	Tier 1	$0.083	$0.085	$0.099
2	Tier 2	0.096	0.107	0.116
3	Tier 3	0.140	0.207	0.170
4	Monthly fixed fee ($/month)	N/A	0.70	N/A

[48] D.12-08-044, p. 22 (as of December, 2011).

[49] Compare, D.12-08-044, Ordering Paragraph 1, p. 369, to D.00-02-026, Attachment 4, July 6, 2000.

[50] PG&E recently has presented a proposal in its 2014 GRC Phase 2 case to fix this CARE Tier 3 rate disparity. No legislative changes are needed to make this change, and it can and should be addressed in that proceeding.

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PG&E's Rate Design Reform Proposal is consistent with various reforms to CARE customer eligibility, enrollments, and income verification processes begun by the CPUC in 2012.[51] Assigned Commissioner Ferron recognized the need for evaluation of the CARE program in his concurring opinion to the CPUC's 2012 CARE decision:

> *Based on my further review of the CARE subsidy, I seriously question whether we are targeting the right overall objective. … We need to balance the societal benefits of maximizing the number of eligible participants against the excessive costs of having too many ineligible participants. I think that we need to more closely examine this going forward.* ***The truth is, we just do not know if the benefits of pushing for wider enrollment justify the growing costs associated with this subsidy. And we should know this.***
>
> *I am particularly concerned that we monitor and effectively use the data that we are ordering the IOUs to track in this Decision. The Decision provides three opportunities for us to ensure that we are being good stewards of the public dollar: 1) the Initial Enrollment Stage, which requires limited documentation of the customer's eligibility, or in the case of so-called self-certified participants, no documentation at all; 2) the Re-Certification Stage, which requires the customer to document - or in the case of self-certified customers, to attest to - their continued eligibility; and 3) the Post-Enrollment Verification process, by which the IOUs monitor changes in eligibility between verification cycles and obtain data for use in improving the accuracy of customer enrollments.*
>
> ***
>
> *It is my hope that we will have a better understanding of the statistical profile of both eligible and non-eligible customers relative to the entire population, which will inform future decisions in time for the next application cycle. I am particularly concerned that we understand the impact of allowing customers to enroll and to continue to participate by means of self-certification alone. I am hopeful that through a robust and scientific verification process, we will have high confidence that our programs are readily accessible to those who are truly eligible for assistance, and yet have adequate safeguards against ineligible participation.*[52]

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[51] *Decision on Large Investor-Owned Utilities' 2012- 2014 Energy Savings Assistance (ESA)(Formerly Referred to as Low Income Energy Efficiency or LIEE) and California Alternate Rates for Energy (CARE) Applications*, Decision 12-08-044, August 23, 2012.

[52] D.12-08-044, *Concurrence of Commissioner Mark J. Ferron*, pp. 1-2.

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In addition, the CPUC noted reports from PG&E that when it performs post-enrollment verification of CARE customer eligibility, including income verification, approximately 61 percent of its CARE customers are de-enrolled for a variety of reasons, including income ineligibility.[53] As a result, the CPUC's 2012 decision approving CARE and ESAP budgets for the 2012-2014 program period adopted changes that restrict high usage customers' ability to remain on CARE assistance without undertaking energy efficiency measures.[54] In addition, the CPUC began some limited studies of methodologies to tighten the post-enrollment income verification processes used by the utilities.[55]

PG&E's proposed changes to the CARE discount would be coordinated with the CPUC's overall CARE reforms, in order to ensure that CARE rate discounts are targeted more effectively to help low income customers pay their bills and manage their energy use. The CPUC is updating data from 2007 on energy burden (the percentage of household income needed to cover electric and natural gas bills) by income strata and geographic area in California.[56] The last such study (by KEMA) found that PG&E's low income customers on average pay 4% of their income for their total energy bill (electric plus gas).[57] This breaks down as 2.5 percent for electric and 1.4 percent for natural gas. However, as discussed above, CARE customers have long benefitted from CARE rates frozen at extremely low levels, so that the inflation-adjusted level of CARE assistance to low income customers is actually 32 percent higher than the level adopted

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[53] D.12-08-044, p. 203.

[54] D.12-08-044, Ordering Paragraph 101, pp. 400-402.

[55] D.12-08-044, Ordering Paragraphs 89-97, pp. 395-399.

[56] D.12-08-044, Ordering Paragraphs 107-109, pp. 404-406.

[57] *See* "Final Report on Phase 2 Low Income Needs Assessment" prepared for the CPUC by KEMA, Inc., September 7, 2007, page 5-9 and page 5-11 showing that for customers who take both gas and electric service from PG&E, on average, their natural gas-only energy burden was 1.4 percent.

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following the KEMA study in 2007, having increased from about $400 per customer in 2007 to about $580 in 2012.[58]

Accordingly, PG&E proposes to make downward adjustments to the level of the CARE discount over a reasonable period of time. PG&E also is open to considering adjusting the actual discount to different segments of eligible customers based on various levels of usage and other objective criteria as well as incorporating the results of updated needs assessments. Coupled with anticipated reforms of the CARE program itself, the level of CARE assistance to PG&E low income customers should be sufficient to ensure that PG&E electric bills are reasonably affordable to needy customers. PG&E's Rate Design Reform Proposal is intended to ensure CARE bill impacts that are modest in dollar terms, and reasonable given the need to address high upper tier bills.

When Lifeline and Baseline rates were first implemented, there was no separate CARE program. That is, the generally available lower Tier 1 or baseline rate was intended to ensure that electric service was affordable for low-income customers. Today, with the longstanding implementation of a special program for CARE customers, combined with the relatively low level on non-CARE Tier 1 and Tier 2 rates, this brings into question the need to even have an inverted tier structure for non-low-income customers for affordability purposes. A substantial proportion – approximately 57 percent – of PG&E's non-CARE upper tier customers, who have for so long been affected by higher tier rates, are indeed moderate or even lower income customers.[59] Affordability is a significant issue for these customers as well.

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[58] The average assistance per customer is calculated from Table 2-2.

[59] Based on 2009 RASS sample data. High tier customers are those that have tier-3 or above usage. An annual income in the range of $60K to $100K is defined as moderate income, and income below $60K is defined as low income.

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PG&E's demographic analyses indicate that there is not a strong correlation between income and usage, and that thousands of PG&E's higher-use customers are moderate or lower income.[60] This is intuitively true based on the living characteristics of PG&E's large service territory in northern and central California, with a variety of electricity consumption levels based on differences in family size, including families with children and elderly members and differences in housing vintage.

On the one hand, there are thousands of low and moderate income families living in the Central Valley and outer suburbs of the San Francisco Bay area whose need for air conditioning in the summer months pushes their electricity demand into the above-cost, higher tiers. On the other hand, there are higher income single people who are earning over $100,000 a year in places like San Francisco and the coastal areas where cooler weather allows them to keep their electricity usage in the lower tiers, substantially below the cost of service.

As TURN has pointed out, under these demographic characteristics, "you end up getting into issues of correlation of high usage with housing stock of larger square feet and larger family size."[61] There is "somewhat more dispersion" of incomes among those with upper tier usage, with TURN's data showing a group of 18 percent to 32 percent of customers with usage in Tier 4 having moderate incomes, depending on climate zone.[62]

Demographic data on PG&E's customers demonstrate that steeply inclining upper tier rates hurt many moderate income families. Contrary to some previous

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60 *See* Figure 2-5, **b**elow.

61 TURN, Marcus, TR. p. 326, line 25, p. 327, line 19 and p. 329, lines 13-14, in PG&E's 2012 Rate Design Window Application 12-02-020 (February 29, 2012).

62 *Id.*

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assumptions, customers with upper tier usage in fact are *not* synonymous with being rich. While there is a positive correlation between income and usage, that correlation is weak. Consequently, steeply tiered rates harm many lower and moderate income families and, conversely, reward many high income families. Of the 865,000 non-CARE lower income households with annual incomes between $30,000 and $60,000, over one-third have high usage and pay an average annual rate that exceeds the residential class average.[63] Similarly, of the 1 million non-CARE moderate income households in the $60,000 to $100,000 annual income range, over half have high usage and pay an average annual rate that exceeds the residential class average.[64] In contrast, over 40 percent of the nearly 1.1 million higher income households with incomes exceeding $100,000 per year have low usage and pay an annual average rate below the residential class average.[65]

PG&E understands that the theory behind tiered rates has included the concept that lower rates for lower usage customers will provide necessary financial assistance to low-income customers while encouraging high income, high users to conserve. However well-intentioned this theory, it is not supported by the facts, and the current tiered rate structure actually penalizes many of the same moderate and low income customers that policymakers intend to help. Furthermore, direct, transparent discounts provided by CARE rates to income-eligible customers are a more effective means of targeting rate discounts for low income customers than reduced rates for a defined level of usage available without regard to need.

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[63] Based on RASS 2009 sample and 2009 usage for PG&E customers only. High usage is counted as 1/12 for each month with tier 3 or above usage for each customer.

[64] *Id.*

[65] *Id.*

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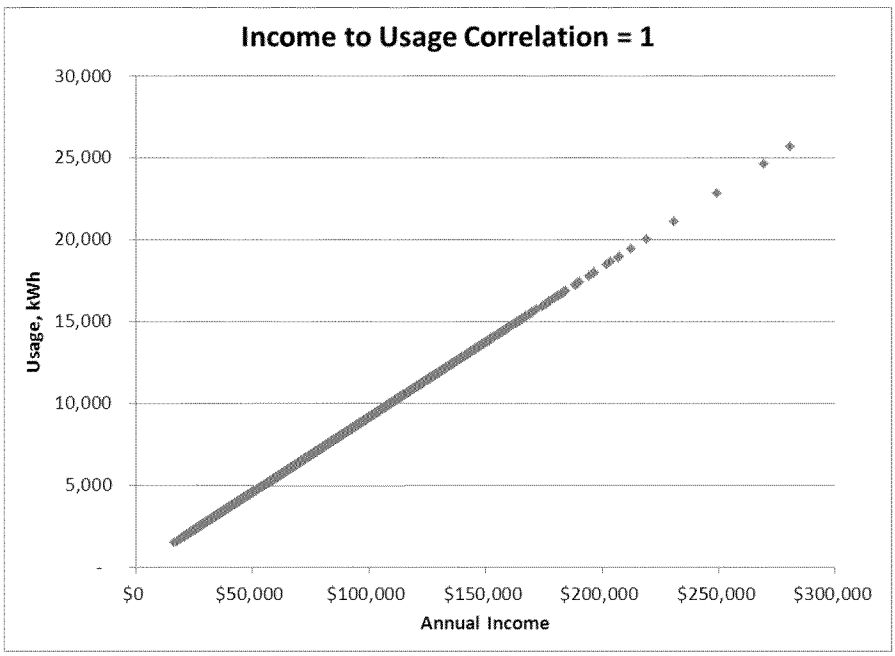
Figure 2-2, below, illustrates what a perfect positive correlation between income and residential electric usage would look like in PG&E's service territory. At the other end of the spectrum, Figure 2-3 shows an example of zero correlation between income and usage. Figure 2-4 shows the actual correlation between income and usage from PG&E's 2009 Residential Appliance Survey Saturation (RASS) data.[66] The estimated correlation is relatively weak, at just 0.33. As the scatter plots show, Figure 2-4 looks similar to Figure 2-3.

FIGURE 2-2
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATION OF PERFECT POSITIVE CORRELATION BETWEEN INCOME AND USAGE



[66] *See* A.13-04-012 (PG&E's 2014 GRC Phase II), Quadrini, Exhibit PG&E-1, p. 3-113 line 26 to p. 3-15.

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FIGURE 2-3
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATION OF ZERO CORRELATION BETWEEN INCOME AND USAGE

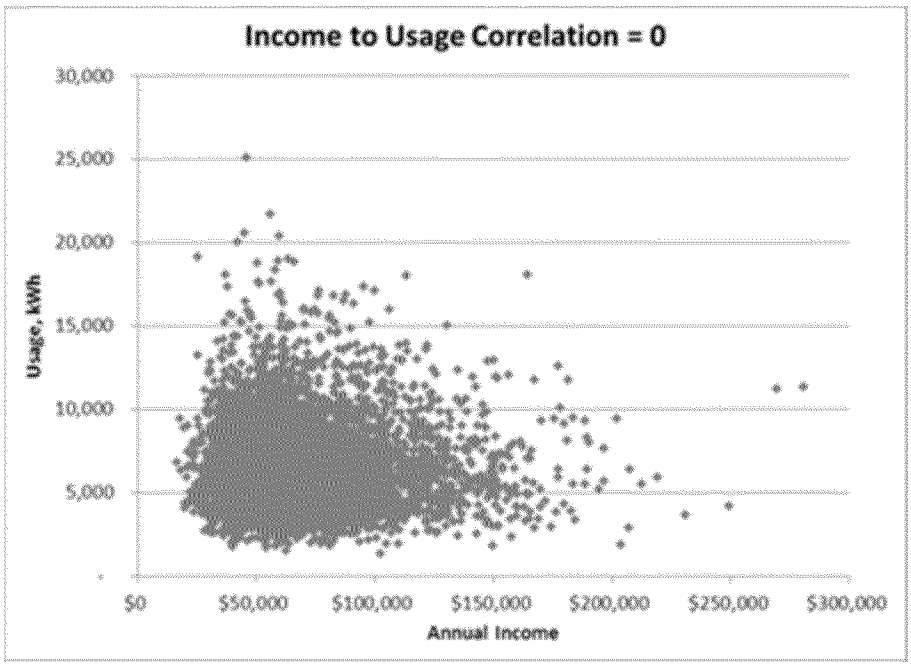

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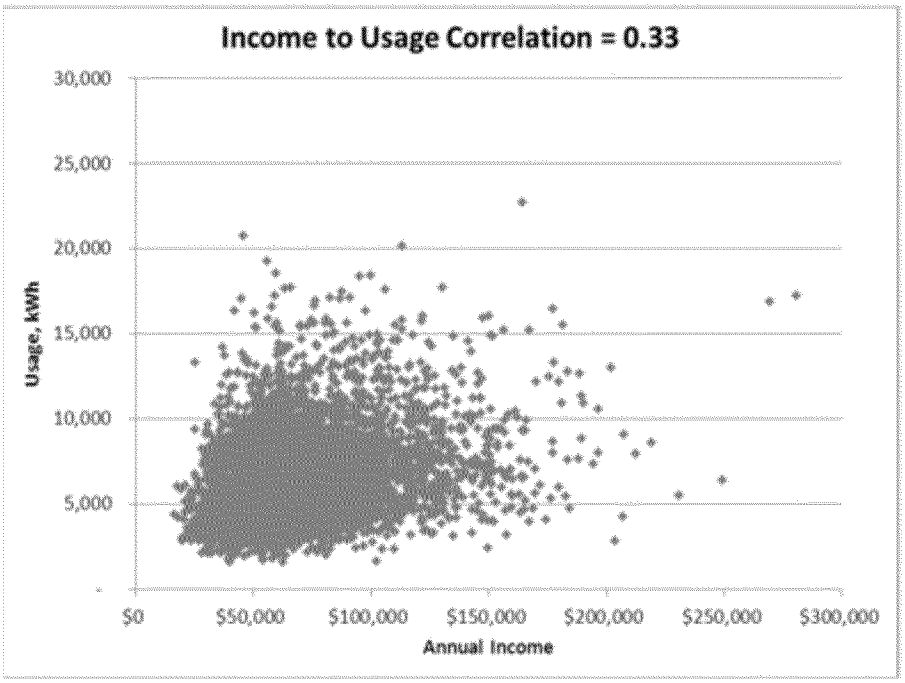
FIGURE 2-4
PACIFIC GAS AND ELECTRIC COMPANY
ACTUAL INCOME TO USAGE CORRELATION
2009 RASS DATA[67]



Taking into account these demographic differences, PG&E Rate Design Reform Proposal is structured so that any bill increases for non-CARE customers are modest in dollar terms in order to achieve meaningful decreases in upper tier rates. On a percentage of bill basis, the bill increases also are more modest when compared to the nominal percentage rate changes. Such modest bill increases are a reasonable tradeoff for making additional, though slight, progress on reining in exorbitantly high upper tier rates. These modest bill increases for the lower tier non-CARE users who largely have been protected from any significant rate increases for the last twenty years, are necessary to lift the burden on upper tier users, thousands of whom are located in inland parts of PG&E's service area where air conditioning is essential for low or moderate income working families. Moreover, because sales are distributed more

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67 The 0.33 correlation was estimated from the RASS 2009 sample. The scatter plot shown is based on that estimated correlation for illustrative purpose; the actual data is not shown in this plot.

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heavily in the lower two tiers than the upper tiers, *it is possible to decrease the upper tier rates* (and, consequently, the bills of upper tier users) *significantly with only modest bill increases for those consuming in the lower tiers at this time*.

PG&E is cognizant that disabled and low-income customers in its service area are struggling economically. But the problem of income insufficiency cannot be addressed in any meaningful way by freezing electric rates for nearly two decades at below-cost levels. Needy families do merit greater assistance, but electric rates are not a good tool for doing so. More direct, targeted assistance is a more appropriate and efficient way to deal with the societal and humanitarian issue of poverty. PG&E's Rate Design Reform Proposal is intended to phase-in changes in CARE rates that do not significantly increase the energy burden of needy customers, while improving the efficiency of the program itself.

Against this backdrop on energy burden, PG&E's Rate Design Reform Proposal is structured to allow the CPUC to continue to make progress toward relieving current rate inequities that built up over many years, especially since doing so is likely to result in a reasonably affordable average bill increase for a typical usage CARE customer. Still another way to assess affordability is on a statewide basis, and indisputably both SCE and SDG&E have higher CARE rates paid by these same income groups. For example, Table 2-7 shows that PG&E's CARE Tier 3 rate of 14.0¢/kWh is significantly lower than SDG&E's current rate of 17.0¢/kWh, and even farther below SCE's rate of 20.7¢/kWh. Even though the Southern California utilities' CARE Tier 3 rates are well above PG&E's, there is no evidence that their rates have created any huge affordability problem.

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PG&E's Rate Design Reform Proposal maintains both the CARE rate discount and baseline rates, while moving both rates over time back to the levels intended by the Legislature and CPUC prior to the 2000-2001 energy crisis. In so doing, PG&E will take into account both the CPUC's ongoing reforms to the CARE program and its historical determination of basic electricity needs under the baseline statute. For example, while SMUD recently proposed a 38 percent discount for its version of CARE customers in 2014, the maximum dollar discount allowed is capped at $52 per month. The utilization of such a maximum dollar per month cap (albeit not necessarily set at $52 per month) may represent a reasoned trade-off between providing relief to those requiring financial assistance, and avoiding an excessive impact on non-CARE customers who must fund those discounts.

This coordinated consideration of both the CARE and baseline rate assistance programs is essential, because the definition of "affordability" of electricity in California applies to both. As the baseline statute and the history of its implementation demonstrates, "affordability" is defined as assuring a discounted electricity rate for a *limited* quantity of electricity to serve basic needs (not *all* electricity usage), while at the same time assuring that the difference between the discounted rate and higher usage electric rates is maintained at a *gradual* differentiation.[68] Likewise, the CARE statute makes clear that CARE assistance can be provided as a rate discount or through other forms of assistance such as energy efficiency measures, and that the level of CARE assistance should assist eligible low income customers to pay their energy bills, but that the particular level of assistance is left to the determination of the CPUC as long as it

[68] Public Utilities Code Section 739(b),(d).

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provides an equivalent discount of at least 20 percent compared to non-CARE electricity bills.[69]

PG&E's Rate Design Reform Proposal is structured to make steady progress toward addressing the gross inequities in the residential rate structure, while still providing very substantial assistance to mitigate the energy burden of disabled and low-income customers on the CARE rate schedule.

2.1.4. PG&E's Rate Design Reform Proposal Fairly Allocates Fixed Costs of Residential Electricity Service to Customers Through a Monthly Fixed Fee

A monthly fixed fee to recover fixed costs of utility service is a key tool for fulfilling the very important ratemaking principle of cost causation. In the context of residential rate design, there are a number of categories of costs that do not vary with the volumes of kWh consumed by customers. First, there are customer access and revenue cycle service costs that, for non-residential customers, are generally collected via monthly customer charges. These include the costs of connecting a customer to the grid and maintaining that connection and service to the account—including metering, preparing and sending bills, processing payments, providing service center resources, and other grid-related costs. Second, there are capacity-related costs associated with generation, transmission, and distribution assets. These generation and grid costs are driven by customers' coincident and non-coincident demands on the PG&E system and for non-residential customers are generally collected via demand charges. Finally, PG&E's revenue requirements include the costs of various programs such as those that support

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[69] Public Utilities Code Sections 382(b) ("Energy expenditure may be reduced through the establishment of different rates for low-income ratepayers, different levels of rate assistance, and energy efficiency programs"), 382(c) ("Nothing in this section shall be construed to prohibit electric and gas providers from offering any special rate or program for low-income ratepayers that is not specifically required in this section"), 739.1(b)(1).

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incentives for energy efficiency or rate reductions for low-income customers under CARE. These program costs do not change according to changes in consumption by non-CARE customers. For a customer class like residential, though, where demand charges are not currently employed, it may be more appropriate to collect these types of costs through a fixed monthly charge rather than through volumetric charges, since the costs are incurred by the utility on behalf of each individual customer and do not change based on the volume of electricity that the customer consumes.

In situations where certain costs are fixed and cannot be avoided, setting a rate to recover these costs through monthly fixed fees, rather than through volumetric rates, appropriately reflects cost causation, and supports more equitable recovery of PG&E's fixed costs among customers. These fixed costs should be paid by all customers, rather than shifted unfairly from some onto others.

Consistent with this fair and efficient cost-causation principle, the CPUC has approved fixed fees for every one of PG&E's *nonresidential* rate schedules—in recognition that this is an appropriate way to collect fixed costs.[70] Because PG&E incurs these same fixed costs to serve residential customers, a monthly fixed fee that similarly does not vary with consumption would be appropriate for these customers as well.

In addition, a monthly fixed fee allows for a reduction in higher tiered volumetric rates, providing further movement of overall residential electric rates towards cost. It will help minimize the inequity in the current inclining block rate design and the associated rate disparities between the lower and higher tier non-CARE rates and between CARE and non-CARE rates. Adoption of a monthly fixed fee will contribute to

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[70] *See* A.10-03-014, PG&E's 2011 GRC Phase 2, Keane, Exhibit PG&E-2, p. 1-11 to 1-12.

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reversing these disparities. A modest monthly fixed fee would allow a significant reduction in PG&E's Tier 3 and 4 rates. In that respect, it is a key component of PG&E's total Residential Rate Design Proposal.

A monthly fixed fee also is more cost-based than alternatives such as the existing minimum bill amount. Fixed costs are incurred to serve all customers. Consistent with this cost-causation, the monthly fixed fee applies to all customers. In contrast, a minimum bill amount is applied only to a very small percentage of customers with little or no usage in a given month. For example, for the current minimum bill on PG&E residential rate Schedule E-1 to apply, a customer would have to use just 34 kWh or less in a month (since 34 kWh times 13.2 cents equals $4.50). Only about 3 percent of PG&E's total E-1 customers have usage this low in any given month.

The monthly fixed fee also is more equitable because it charges all customers on a rate schedule the same amount to cover a portion of PG&E's fixed costs. For example, a $3.00 customer charge on PG&E's rate schedule E-1 would apply to each and every customer's monthly bill, regardless of the customer's usage. This is appropriate since the fee is collecting a portion of the fixed costs that do not vary with usage. In contrast, the minimum bill amount artificially "bumps up" different low usage customers' bills by different amounts. In the example above, a customer with zero usage has its bill increased by $4.50 for a total bill of $4.50, while a customer using 10 kWh would have its bill increased by just $3.18 (to get to the same $4.50 total bill). Put another way, both customers pay the same total bill of $4.50 even though the second one (under the minimum bill) should pay more since it is getting the benefit of 10 additional kWh.

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Finally, it should be noted that one of the fundamental principles of cost accounting and rate design, generally, is to recover fixed costs through a fixed charge, and variable costs through a variable charge. Even if a high minimum bill were established, it would follow that in the absence of a fixed customer charge, the regular variable charge per kWh would inappropriately have to "roll in" recovery of fixed costs, as occurs today. In effect, this establishes a portion of the total variable charge per kWh that on a class average basis must be set to recover those fixed costs. As a consequence, customers with usage higher than the class average will "overpay" for those fixed costs, and customers with usage below the class average will "underpay" for those fixed costs.

Surveys of other utilities establish that including fixed charges such as monthly fixed fees in residential rates are a wide-spread, well-accepted practice. Although PG&E's Rate Design Reform Proposal begins with a modest monthly service fee at a fraction of the actual fixed costs of service, implementation of the monthly service fee over time will make PG&E's residential rates more consistent with those of other utilities. Of 22 top utilities nationwide, 21 have monthly charges that exceed $3.00 a month. Among California utilities, SCE has a monthly service fee, as do eight out of 16 municipal utilities operating in northern and central California.[71] For example,

[71] Sacramento Municipal Utility District (SMUD), Silicon Valley Power, and Redding Electric Utility all have customer service fees, ranging from $2.50 per month to $12.50 per month. At the CPUC's November 14, 2012 Energy Policy Conference on Energy Rate Design, Scott Martin of SMUD publicly stated that SMUD has been collapsing tiers since the year 2000 and recently eliminated its third tier, and that it is implementing increases to its fixed monthly customer charge by $2 a year over the next five years, ramping up from its current $12 monthly service fee to a $20 monthly service fee, with corresponding decreases in energy costs. In addition, SMUD's more recent plan includes moving to non-tiered residential flat rates during the 2014 to 2017 period.

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SMUD charges $12.00 per month for non-CARE customers and $3.50 per month for CARE customers.[72]

Setting a monthly service fee to recover at least a portion of the fixed costs of serving residential customers (which costs do not vary with usage) on a fixed basis appropriately reflects cost causation, and supports more equitable recovery of PG&E's fixed costs among customers. These costs should be paid by all customers, as opposed to avoided by some and thus shifted to and paid by others.

2.1.5. PG&E's Rate Design Reform Proposal Provides Customers with Simpler, More Understandable Rate Options

PG&E's Rate Design Reform Proposal leverages customer research conducted over the past several years that has helped define what residential customers believe would be understandable and simple in regard to electric rate plan options. Customer input has made it clear that "understandable" and "simple" are two closely related characteristics of a rate plan. One focus group participant summed it up very well:

> *"It is obviously important that I can understand how my rate plan and my energy use behavior translates to my bill, however, I don't want to have to spend much time or effort figuring it out or have to work too hard to make the changes."*[73]

At first, it may seem that it is only important that a customer is capable of understanding their rate structure and how that structure affects their bill. However, from a customer engagement perspective, rate plan options need to be easy to understand as well as to act upon. Residential rate design in California has strived for

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[72] In addition to monthly fixed charge that is lower than on its standard rate, SMUD's low-income rate also features a 35 percent discount on Tier 1 usage and a smaller, 30 percent, discount on Tier 2 usage. However, once a customer's monthly usage reaches 600 kWh, there is no discount on additional kWh consumed. *See* SMUD's Residential and General Service Energy Assistance Program tariff (https://www.smud.org/en/business/customer-service/rates-requirements-interconnection/documents/1-EAPR.pdf).

[73] PG&E Residential Rates Language Focus Groups, King Brown Partners, January, 2013.

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years to encourage energy conservation and peak load shifting. However, in order for customers to demonstrate these behaviors, their rate plan options have to not only be understandable, but be easy to understand and allow bill savings from easy changes in behavior.

Simplifying the standard rate from four tiers to two tiers and completely eliminating tiers in optional TOU rates will increase customer ability to understand how energy use behavior affects bills. The recently completed April, 2013, joint utility customer survey showed that customers on the current four-tiered rate have a very poor understanding of how their energy use behavior impacts their bills.[74] Results also show that customers prefer simpler rate structures, such as flat, two-tier and two-period TOU rather than structures with more tiers, more TOU periods and worse, more periods combined with more tiers.

PG&E's Proposal incorporates these customer perspectives by simplifying the standard rate from four tiers to two, and introducing a meaningful opt-in TOU rate without tiers. These new rate plans will eventually completely replace the current four-tier standard rate and the optional four-tiered TOU rate.

2.2. PG&E's Electric Rate Design Reform Proposal is Based on Marginal Cost and Cost-Causation Principles

The CPUC has long stated that a fundamental principle of electric rate design is to charge customers rates that reflect utilities' cost of service.[75] More recently, the CPUC reaffirmed this principle in this proceeding:

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[74] "RROIR Customer Survey Findings," Hiner and Partners Inc., April 16, 2013.

[75] *See, e.g.*, D.92549, 5 CPUC 2d 39, 108; D.93-06-087, 50 CPUC 2d 1; D.96-04-050, 65 CPUC 2d 362, 383-385.

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Importantly, D.08-07-045 adopted a set of guiding principles for the Commission and utilities to utilize in designing dynamic rates. These principles are:

1. Rates should be based on marginal cost;

2. Rates should be based on cost-causation principles;

3. Rates should encourage conservation and reduce peak demand;

4. Rates should provide stability, simplicity and customer choice; and

5. Rates should encourage economically efficient decision-making.

Even though the decision did not explicitly state that equity is a guiding principle, the decision did note "that rates based on marginal cost will simultaneously achieve economic efficiency and equity by ensuring that customers' rates are commensurate with the costs they cause. Marginal cost-based rates should effectively eliminate cross subsidies between customers since a customer who is less expensive to serve would pay less, and vice-versa for a customer who is expensive to serve.[76]

As the consumer group TURN also has stated, the policy underpinnings for these principles are that an "additional amount of economic efficiency arises" from a cost-based revenue allocation and rate design.[77] Not only is it fair and equitable for customers' rates to align as closely as possible with the cost to provide them with electric service, but doing so sends customers a price signal that helps them make more efficient choices regarding their energy usage. Note, however, that having more "cost-based" rates does not preclude the limited use of subsidies to internalize "social" or other "external" costs in rates, as long as those "social" costs are clearly and transparently communicated to customers, so that customers know precisely what they are paying for.

By transitioning residential electric rates closer to average and marginal cost of service over time, PG&E's Rate Design Reform Proposal complies with the CPUC principle that rates should be based on marginal cost and cost-causation principles.

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[76] R.12-06-013, pp. 10-11.

[77] *See* A.12-02-020 (PG&E's 2012 RDW), TURN, Marcus, Record Transcript, p. 318, lines 8-17.

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Although the calculation of marginal costs will vary from rate case to rate case, no longer will PG&E's Residential Rate Design include rates for moderate- and higher-usage that exceed those actual costs by 100 to 200 percent, as they have for most of the last decade. Nor will rates for low usage and CARE customers fall significantly below their actual costs. Instead, CARE and baseline rates will be returned to their original objectives of helping low income customers pay their energy bills, and ensuring that all residential customers regardless of income pay a reasonable rate for basic electricity needs.

None of this will happen overnight, and PG&E intends to propose transitions for both CARE and non-CARE baseline rates that fully take into account that affordability of a basic quantity of electricity for essential residential customer needs is a fundamental element of California ratemaking. But "affordability" itself must take into account the fundamental fairness and equity of cost-of-service ratemaking. Under cost-of-service ratemaking, it is not fundamentally fair for one set of residential ratepayers to pay a rate that is higher than their cost of service in order to subsidize the electricity consumption of other ratepayers at below their cost of service – that is more generally the function of the elected Legislature through the broader based, more transparent system of taxation for the public good. Residential rate design is just not a good policy tool for addressing income-based affordability issues. In more colloquial terms, "fairness" and "equity" in public utility ratemaking mean that customers "pay only for what they get" and "get only what they pay for." Certainly, neither the CPUC nor public utilities under its jurisdiction have designed electric rates to business, agricultural and governmental customers on an "inclining block" tiered structure that punishes them with above-cost rates at higher

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usage levels. The same cost of service principle applies to residential electric rates as well.

At a time when California's energy and environmental policies are requiring that all public utility customers pay their fair share of the costs of environmental externalities, such as reducing greenhouse gas emissions through AB 32's "cap and trade" program and reducing overall environmental emissions through the Renewable Portfolio Standard, PG&E's Rate Design Reform Proposal will fairly and equitably spread these costs based on the rate design principle of cost causation and marginal cost.

2.3. PG&E's Electric Rate Design Reform Proposal Encourages Conservation, Energy Efficiency, and Reduction of Both Coincident and Non-Coincident Peak Demand

PG&E's Rate Design Reform Proposal will encourage greater energy conservation and energy efficiency, as well as reductions in both coincident and non-coincident peak demand, contrary to the "conventional wisdom" about the effects of inclining block rates and customer charges.[78]

Proponents of steeply inclining tiered rates often tout their ability to encourage conservation by providing very high price signals in the upper tiers. While this may be the conventional wisdom, one cannot just focus on the rates in the upper tiers. The fact is that tiered rates also provide very *low* price signals in the lower tiers where the vast majority of the usage occurs (slightly more than two-thirds, for PG&E). So, compared to a flat rate structure, inclining block rates reduce usage in the upper tiers but increase usage in the lower tiers. It is an empirical question which of these two effects dominates the other, and thus whether inclining block rates really reduce overall usage.

[78] In other customer sectors, these concerns do not seem to be apparent. None of PG&E's non-residential rates are tiered, and all of them have monthly fixed fees.

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So PG&E's Proposal here to move to a flatter residential rate structure – one with just two tiers instead of four, and with a relatively modest differential between the two rates – is not necessarily "anti-conservation" as the conventional wisdom might suggest and may, in fact, do more to encourage *overall* conservation in the residential class.

There is a similar misconception about the effects of a monthly fixed fee / customer charge. Since the introduction of a customer charge will reduce the level of volumetric rates (since the overall revenue to be collected is unchanged), the conventional wisdom suggests that this will reduce customers' incentives to conserve. But this theory assumes that residential customers respond to marginal prices (i.e., the price in the tier in which they are currently consuming) when making decisions about whether to consume an additional kWh. Recent research by Ito and Borenstein at the University of California, though, has shown this assumption does not seem to hold true in practice.[79] Rather, the research strongly suggests that customers respond to average rates rather than marginal rates. The addition of a customer charge will increase the average rate paid by customers in the lower tiers and decrease the average rates in the upper tiers.[80] So, once again, while upper tier consuming households will have a reduced incentive to conserve, lower tier consuming households

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[79] Koichiro Ito, "Do Consumers Respond to Marginal or Average Price? Evidence from Nonlinear Electricity Pricing" (Revised October 2012), Energy Institute at Haas, http://ei.haas.berkeley.edu/pdf/working_papers/WP210.pdf.

[80] The reduction in the average rate is due to PG&E's proposal to use the additional revenues from the customer charge primarily to reduce upper-tier rates. For households consuming in the upper tiers, the bill-reducing effect of these rate reductions will more than offset the bill-increasing effect of the customer charge. For households consuming in the lower tiers, though, the bill-increasing effect of the customer charge will dominate, resulting in higher bills and average rates.

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will have an increased incentive, and it is an empirical issue which of these effects dominates the other.[81]

There are two other aspects of PG&E's Proposal besides flattening the tier structure and introducing a customer charge. First, PG&E is proposing a reduction in the CARE discount over time. Since CARE rates have declined in real terms over the last two decades, there has been a reduction in the incentive for CARE households to conserve. PG&E's Proposal will begin to provide a conservation signal that has long been absent for these households. Second, PG&E is proposing to transition to an optional non-tiered TOU rate option. TOU rates are generally focused on providing an incentive for customers to shift their loads from higher-priced on-peak periods to lower-priced off-peak periods, and not necessarily on reducing overall usage. But even if usage does not increase overall, an environmental benefit is obtained from being able to reduce power production and purchases in the on-peak periods where less efficient generators are being used and increase production and purchases in the off-peak periods where generation is more efficient.

Given the preponderance of sales in the lower tiers (and to CARE households) compared to the upper tiers, the pro-conservation effects of PG&E's Proposal to raise average rates in the lower tiers (and to CARE households) and to lower them in the upper tiers might well be expected to reduce overall residential usage, or at least leave it at about the same level. In Chapter 4, PG&E describes its work estimating the effect of its rate proposals in their entirety on overall residential usage. As described there,

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[81] With tiered rate structures, average rates vary with a customer's usage, rising slowly with each additional kWh assumed (and approaching the upper tier rate asymptotically as usage goes to infinity). In contrast, with a flat rate design the average rate is the same regardless of the amount of kWh consumed. So the same effect is seen when evaluating PG&E's Proposal to flattening the tiered rate structure – lower tier consuming households will have a greater incentive to conserve, while higher tier consuming ones will have a smaller incentive to do so.

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these empirical results show that PG&E's Proposal will result in modest reductions in overall residential usage, assuming reasonable estimates of customers' price elasticities of demand.

In addition, PG&E's simpler, more understandable non-tiered TOU rate design will open up new opportunities and new incentives for all of PG&E's residential customers to choose new electric rate plans that encourage them to shift their energy use to non-peak periods and save money doing so. These new TOU and demand response rate schedules and programs will directly encourage customers to reduce their coincident demand for energy on PG&E's system when resources are most scarce and costs are the highest.

For several years, PG&E has repeatedly emphasized that the current tiered residential electric rate structure is the primary obstacle to successful implementation of "customer-friendly" TOU residential electric rates for PG&E's customers that directly incent load shifting from higher cost to lower cost periods. If PG&E's Rate Design Reform Proposal is approved, this major barrier to successful TOU rates will be removed.

2.4. PG&E's Electric Rate Design Reform Proposal Enhances Customer Choice

As discussed above, an important objective of PG&E's Rate Design Reform Proposal is to *enhance customer choice* through new, *simple, easy to understand* customer rate and billing options. PG&E's Rate Design Reform Proposal applies extensive "lessons learned" including those from SmartMeter™ roll-out and PG&E's highly-subscribed SmartRate program (with over 100,000 customers currently enrolled). Based on those lessons-learned, PG&E is proposing a simple set of electric rate options for residential customers that are easier to understand, transparent in design, and

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simple to compare regarding current impacts on bills and time of use. In addition, PG&E's Proposal includes robust customer outreach and education as part of the transition from the existing, complex rates to the new, simpler rate structure. PG&E's Proposal is based on extensive customer research and direct solicitation of our customers' views conducted over the last five years, including the specific customer research conducted for this proceeding.

In addition, given the simplicity of PG&E's new rate design, it is a stable framework for the future and can take into account changes and increased customer sophistication and use of customer-directed energy management tools, such as Green Button Connect, two-way demand response communications tools, and Home Area Network devices. This is because PG&E will be offering customers a clear and stable choice between simple two-tiered and non-tiered TOU rates, while preserving a limited number of additional residential rate options that meet specific customer needs, such as electric vehicle, "Green Option" and CARE rates.

2.5. PG&E's Electric Rate Design Reform Proposal Provides Explicit and Transparent Incentives and Encourages Economically Efficient Decision-Making. In So Doing, PG&E's Electric Rate Design Reform Proposal Avoids Unnecessary Cross-Subsidies

Simply stated, economically efficient decision-making requires that prices be based on marginal costs, and that subsidies be minimized. PG&E's Rate Design Reform Proposal supports these principles by returning residential electricity prices to cost-based rates after over a decade of distorted, inefficient below-cost and above-cost pricing to millions of PG&E customers. PG&E does not propose to return electricity prices immediately to more cost-based rates, because an adequate and reasonable transition period is needed in order to help customers adjust to these more cost-based

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rates. However, PG&E intends that the transition period be short enough to avoid unnecessarily extending the period of large cross-subsidies that now has lasted more than a decade. At the same time, PG&E's Rate Design Reform Proposal will maintain a "social safety net" in electric rates through continuation of the CARE program and a baseline rate for a baseline quantity of electricity for residential customers.

2.6. PG&E's Electric Rate Design Reform Proposal Helps Achieve California's High Priority Energy and Environmental Goals

As discussed in the sections above, PG&E's Rate Design Reform Proposal returns residential electric rates to cost-based rates over a reasonable transition period, thus providing economically efficient price signals to customers while maintaining a necessary "social safety net" for low income and baseline customers. In so doing, PG&E's Electric Rate Design Reform Proposal substantially enhances the achievement of California's energy and environmental goals. This is because, over a gradual transition period, millions of PG&E's customers whose electricity rates have excluded the real costs of energy for over a decade, will now see the accurate price signals and costs of California's energy resources, including both the internal and external costs of carbon-based resources. In turn, these more accurate price signals will for the first time in over a decade provide millions of PG&E's residential customers with actionable incentives to install energy efficiency measures and customer-owned generation facilities that reflect California's energy and environmental policies.

PG&E's review of recent research on economically efficient energy pricing indicates that PG&E's Rate Design Reform Proposal is likely to result in greater energy

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savings on a net basis compared to the status quo of tiered electric rates.[82] These net savings will be in addition to the additional benefits PG&E expects from simplifying the residential rate structure so that customers and third-party energy conservation application developers can better understand and offer cost-saving technologies and measures.

2.7. PG&E's Electric Rate Design Reform Proposal Makes Appropriate Trade-Offs Among Rate Design Principles

If based solely on the core rate design principles of cost-based and equitable rates, PG&E's residential rates should be transitioned immediately to cost-of-service rates, because electricity prices based on cost are the optimum means of ensuring that all customers pay non-discriminatory and economically efficient prices for energy . However, PG&E's Rate Design Reform Proposal takes into account that social costs and benefits also need to be considered in designing utility rates. Accordingly, PG&E's Rate Design Reform Proposal includes certain trade-offs from cost of service ratemaking. These trade-offs include:

- PG&E's Rate Design Reform Proposal retains rate assistance under the CARE program in order to provide income assistance to help low income customers pay their energy bills.
- PG&E's Rate Design Reform Proposal retains a "baseline quantity" of electricity that is priced below cost, in recognition that sufficient quantity of

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[82] In Application 10-03-014 (PG&E's 2011 GRC Phase 2), the CPUC received into evidence testimony that included an analysis by Dr. Ahmad Faruqui, who concluded that, taken as a whole, PG&E's proposals in that proceeding would provide a pro-conservation signal, and should be expected to produce a net decrease in energy sales of nearly 166,000 MWh per year. (PG&E, Faruqui, Exhibit PG&E-1, p. 11-9, lines 11-14.) This occurs largely because CARE customers will have stronger incentives to use less energy under the proposed rate design, while the use by non-CARE Tier 4 customers increases only marginally. (*Id*. lines 15 – 20.)

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electricity at a lower price is a basic necessity for all of PG&E's residential electricity customers.

- PG&E's Rate Design Reform Proposal retains a two-tier residential electric rate structure in which the upper tier price is somewhat higher than the cost of service.
- PG&E's Rate Design Reform Proposal includes a reasonable transition period, in recognition that customers need time and adequate information and education to understand and then make informed decisions on the new residential rate choices that are made available to them.

PG&E supports these trade-offs as a reasonable departure from cost-of-service ratemaking, because the trade-offs are consistent with California's energy, environmental and social policies that our customers and California's policymakers generally support and expect.

2.8. PG&E's Electric Rate Design Reform Proposal Takes Into Account Uncertainties in Customer Preferences, Wholesale Electric Prices, and Economic Conditions

PG&E's Electric Rate Design Reform Proposal explicitly takes into account uncertainties in customer preferences and energy markets generally. PG&E's extensive customer research indicates that customers support the "simple is better" approach in PG&E's Proposal. However, PG&E intends to conduct additional customer research periodically, in order to assess and update our understanding of customer preferences and needs. In addition, PG&E's TOU and two-tiered residential rate offerings are consistent with wholesale electricity market price behavior. As discussed above, PG&E also has taken into account the evolving reforms and improvements in the CARE low income assistance program, particularly the growing recognition that a "one-size-fits-all"

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CARE rate discount is not an efficient means of targeting assistance to low income customers.

The key public policy lesson of over a decade of tiered and frozen residential electric rates is that *electric utilities must continuously reassess and understand the changing preferences and needs of their residential customers*, and quickly adapt their electric rates and services to those changes. PG&E's Rate Design Reform Proposal includes this "lesson-learned" as a core principle.

2.9. PG&E's Electric Rate Design Reform Proposal Enables Time-of-Use Pricing and Other New Customer-Facing Technologies, Tools, Products and Services for Managing Energy Use

PG&E's Electric Rate Design Reform Proposal fully integrates and enables customer-facing technologies and tools that are being developed and offered by third parties "beyond the meter." These technologies and tools are particularly effective if rates are simple, easy to understand, and vary by time of use. PG&E's customer research indicates that its residential electricity customers spend very little time on their bills or in actively managing their energy use, but do respond to new tools, devices and technologies that reduce their energy bills through "set it and forget it" applications. PG&E's Rate Design Reform Proposal is intended to enable greater customer control of their own energy usage, through simpler rate designs and greater access to customer energy usage data through PG&E's Green Button, HAN and Customer Data Access programs.

2.10. PG&E's Electric Rate Design Reform Proposal Requires Legislative Changes to Fully Implement

Current laws, particularly SB 695, prevent the CPUC from adopting changes to residential electric rate designs in order to address the grossly unfair and inequitable

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disparities in current electric rates. Changes in these restrictive laws, such as by adoption of the rate reforms in AB 327 (Perea), are essential in order for PG&E to implement its Rate Design Reform Proposal.

As PG&E noted in its recent 2014 Phase II General Rate Case application, although it is important to do what is possible now to mitigate the high upper-tier non-CARE rate problem, approval by the Commission of all of PG&E's 2014 Phase II proposals would still leave PG&E's top tier rate at 28.9 cents per kWh – far above PG&E's average residential rate of 16.8 cents per kWh.[83] While an improvement, this top tier rate is still too high, and the gap between the Tier 2 and the proposed merged Tier 3/Tier 4 rate is still too large and inconsistent with Public Utilities Code Section 739(d)(1)'s requirement of an appropriate, "gradual [tier] differential." Steep upper tier rates that are far above the average cost to serve are inequitable and cause high bills and unnecessary bill volatility for those whose usage moves into the higher tiers.

Legislation adopting structural reform is needed to remove the constraints that currently limit the Commission from making further progress toward a simpler tier structure with a more appropriate gradual rate differential. In particular, at a minimum the constraints on rate design reform in Public Utilities Code Sections 739.1 and 739.9 need to be removed, as proposed by AB 327 (Perea). In addition, the application of the baseline statute (Public Utilities Code Section 739) and the low income rate assistance statute (Public Utilities Code Section 382) need to be harmonized and, if necessary, revised to ensure clear, transparent, efficient assistance to low income ratepayers to help them pay for basic electricity needs. If and when such structural reforms are

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[83] Pacific Gas and Electric Company's 2014 General Rate Case Phase II Prepared Testimony (A.13-04-012), Exhibit (PG&E-1), Volume 1, Revenue Allocation and Rate Design, Table 3-6 (at p. 3-11).

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enacted, the Commission will once again have the flexibility to make more substantial progress toward solving the high upper tier rate problem and more fairly distribute costs of service among residential customers as proposed by PG&E's Rate Design Reform Proposal. Only then would it be possible, over a reasonable period as proposed by PG&E, to return residential rates to the two tier structure with close to the 15 percent differential that existed before the energy crisis.

2.11. PG&E's Electric Rate Design Reform Proposal Will Adapt Over Time to Changing Load Shapes, Changing Marginal Electricity Costs, and Changing Customer Preferences

PG&E's Rate Design Reform Proposal will adapt to changes in load shapes and marginal costs, because PG&E is not proposing changes to the CPUC's traditional methods for calculating and allocating marginal costs and for designing TOU rates that provide understandable, actionable incentives for customers to reduce their electricity demands coincident with peak demands on PG&E's system. As part of the design and adaptation of PG&E's residential rate design, PG&E will take into account the increasingly sophisticated tools for forecasting short-term electricity demands by its residential customers, using interval SmartMeter™ consumption data and Smart Grid tools such as those being tested and demonstrated under PG&E's Smart Grid Pilot Deployment Project, EPIC demonstration projects, and the California Energy Systems for the 21st Century project.[84]

2.12. PG&E's Electric Rate Design Reform Proposal Will Promote the Safety of Electric Customers, Employees and the Public

PG&E and other California electric utilities need to make extensive investments over the next decade to improve the reliability and safety of their electric distribution and

[84] *See, e.g.*, D.13-03-032, D.12-12-031, D.12-05-037.

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transmission systems.[85] In addition, extensive investments are needed to enhance security of the Information Technology (IT) and other communications systems that ensure safe and reliable operation and maintenance of the electric grid.[86]

PG&E's Electric Rate Design Reform Proposal will promote these overarching safety and reliability goals, because it enhances the trust and confidence of customers that they are paying a fair and accurate price for these infrastructure investments. In addition, PG&E's Rate Design Reform Proposal provides customers with easier to understand choices. By including a rate design that fairly allocates the fixed and accurate costs of supporting customer-owned generation, PG&E's rate design ensures that both PG&E and customers see economically efficient price signals to support the safe and reliable operation of the grid as a "backup" to customer-owned generation.

2.13. Conclusion – PG&E's Rate Design Reform Proposal Complies with the Commission's Optimal Rate Design Principles and Addresses the Commission's Questions

As described above, PG&E's Rate Design Reform Proposal fully complies with the Commission's principles for optimal residential rate design, including the core principles of cost-based and economically efficient rates and reasonable assistance to help low-income customers manage their energy burdens.

In addition, as discussed in Chapter 3, below, PG&E's Rate Design Reform Proposal is supported by the customer research conducted by PG&E and the other utilities in this proceeding.

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[85] *See, e.g.*, PG&E A.12-11-009, 2014 General Rate Case, Phase 1.

[86] *See, e.g.*, PG&E Smart Grid Deployment Plan, 2011-2020, R.08-12-009, June, 2011.

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3. CHAPTER THREE: Customer Research Regarding PG&E's Electric Rate Design Reform Proposal

3.1. Summary of Customer Research Key Findings for Rate Design

PG&E has considered these findings from the customer research in its electric rate design proposal, in balance with the other key rate design principles:

- Customers should be offered choices:
    - The majority indicate willingness to consider switching
    - Those that have opted-in to TOU rate plans are more satisfied than those who have been defaulted to a TOU rate plan
- Even though some customers may not want to consider new rate options, education and especially bill protection can significantly increase willingness.
- Although the majority of customers may not prefer a TOU rate compared to a simple tiered rate, they are already practicing the concept of shifting usage to off peak times.
    - There remains a significant group of customers that are interested in switching to TOU rates.
- kWh prices will be a more important customer consideration than rate structures themselves.
    - Customers will take tier and period kWh price differentials into consideration when choosing among rates to help them save on their bill.
- Based on rate structure alone:
    - Customers will be attracted to simpler structures, primarily flat rate, two-tier and two-period TOU rate.

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- Three-tier and three-period TOU rates will be least attractive.

- Although customers will tend to avoid monthly service fees in an optional rate, this negative effect may be mitigated by
  - A simple rate structure and attractive kWh pricing, and
  - A similar customer service fee on the standard rate.
- The transition strategy should take into consideration tolerance for bill impacts, especially for low-income customers.

PG&E's bill calculator and some typical illustrative bill-to-income impacts of various Rate Design Reform Proposals are discussed in Chapter 4, below.

3.2. Customer Research Genesis and Scope

PG&E believes that in order to develop appropriate rate design proposals in this proceeding, an understanding of customer perceptions of current and possible future rate structures and potential bill impacts needed to be considered. PG&E included this suggestion in its initial OIR comments, and at subsequent workshops the CPUC agreed that customer research should be pursued. PG&E then led a process in collaboration with the IOUs and other parties in the proceeding to design and launch the survey. The design/collaboration phase consisted of multiple webinars and individual meetings with other interested RROIR parties to collect and work to incorporate varying perspectives.

Hiner & Partners[87] was retained by PG&E, SCE and SDG&E to conduct the survey. The online survey of approximately 5,300 electric customers was fielded in February and March of 2013, through a market research panel company employing quotas to ensure the sample was representative of the IOU customer population.

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[87] Hiner & Partners is an experienced marketing diagnostics firm. *See* http://new.hinerpartners.com/index.php/about-us.

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Please see Appendix A.1 for the key findings that were delivered to all interested RROIR parties by Hiner & Partners in a webinar on April 16, 2013.

3.3. Customer Research Objectives

The principles of understandability, simplicity, stability, and choice are difficult to measure and customers can have very different definitions, so obtaining direct customer input was useful. Understanding customer attitudes and preferences for various rate structures helped to inform the development of PG&E's rate proposals in this document.

Specific survey objectives included:

1. Investigate current customer awareness and understanding of different rate structures and rate terminology.
2. Quantify and further identify how customer attitudes and understanding impact evaluation of rate structures such as flat, tiered and TOU, and components such as monthly service fees, demand charges and different kWh pricing structures.
3. Investigate how concepts such as "understandable," stable," "predictable," "choice," "fair," and "affordable" matter to residential customers to better inform rate transition/implementation strategies.
4. Determine customer preferences for different potential rate plan options across different customer groups. Customer groups included:
    - Core Sample: PG&E, SCE, SDG&E customers who were provided information or "education" about rate plan structures.
    - Regional: e.g., climate zone
    - Demographics: e.g., CARE vs. non-CARE, seniors vs. other age groups
    - Solar and non-solar

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- Spanish-speaking
- "High involvement" customers, who were enrolled in programs requiring behavior change for bill savings (e.g., SmartRate)
- "Unexposed" customers that were not provided some level of education about the rate plan options provided in the survey.

See Appendix 2 for a detailed description of the survey methodology.

3.4. Results

Energy Use Behavior

Customers continue to be confused by the relationship between rate structure, energy use behavior, and bill savings:

- 94 percent of the PG&E respondents have *reduced* usage to try to save money on their bill. However, only 42 percent knew they were on a tiered rate, which indicates a strong belief that there is a positive relationship between usage and bill amount, but not necessarily a good understanding of the compounding effect of increasing tier prices.
- 74 percent of PG&E respondents have *shifted* usage to try to save money on their bill. However, only 22 percent *believed* they were on a TOU rate, and less than 2 percent actually are on a TOU rate. A large group of customers think that shifting usage can save them money on their bill, but few understand that they must make an active choice for a rate plan option that rewards this behavior.

Not surprisingly, despite these widespread efforts aimed at lowering bills through reducing and shifting energy use, few respondents believed that these efforts have paid off:

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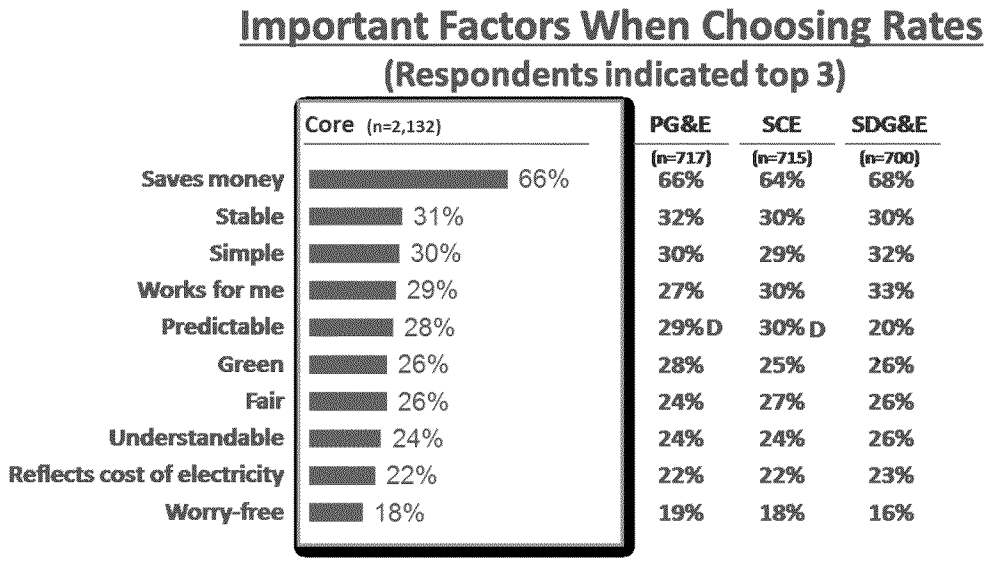
- Only 15 percent believed they saved a lot of money from reducing usage
- Only 9 percent believed they saved a lot of money from shifting usage
- The combination of attempting to save through reducing or shifting with little change in the bill results in frustration and a lack of interest to make any additional efforts to change behavior in the future.

Rate Plan Factor Importance

Respondents were asked to identify the most important factors they would consider when choosing among rate plans. Respondents overwhelmingly and consistently want a rate that will help them save money on their bill. Other important factors included "Stable," "Simple," and "Works for Me." These results were very similar across IOUs. One particularly significant finding for PG&E was that non-CARE customers valued "Green" much more than CARE customers (30 percent vs. 19 percent). Please see Appendix A.3, Customer Survey, Q3.7 for specific language used to describe these different factors considered when choosing rate plans.



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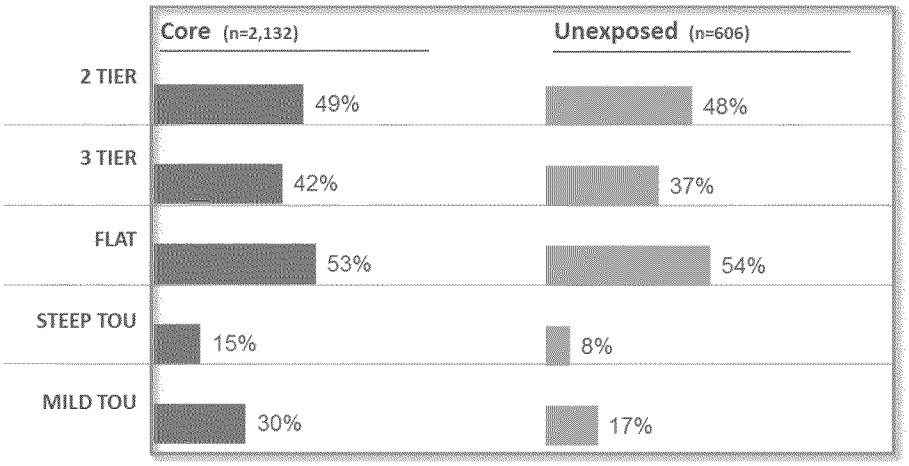
Willingness to Try New Rate Plans and the Effect of Rate Education

About 50 percent of Core respondents said they were willing to try a two tier or flat rate plan. Core respondents were provided "rate education" that included substantial explanation of how alternative rate structures, components (such as monthly service fees, demand charges, and different kWh pricing structures) and energy reducing and shifting behaviors could impact their bill. In order to investigate the importance of rate education, a sub-group of 600 unexposed respondents were not provided rate education before questions about rate preferences. Rate education made little difference in willingness to try two tier, three tier and flat rate plans. However, respondents who were provided rate education were almost twice as willing to try TOU rates. In fact, after rate education, 30 percent of respondents said they would be willing to try a mildly time-differentiated TOU rate.



After respondents indicated their willingness to try different types of new rate plans, they were asked about the amount of bill savings they would expect when faced with the potential for a bill increase as well. Forty percent said they were not willing to risk a higher bill for the opportunity of bill savings. Nonetheless, there was a sizable

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group of respondents (23 percent) that indicated willingness to risk a bill more than 15 percent higher for the potential of a commensurate bill decrease.

Tolerance for Bill Impacts

In order to better understand customer tolerance for bill impacts that might result during the transition to a reformed rate structure, respondents were asked:

> *When your electric bill is more than the average amount or what you were expecting, how much of an increase gets your attention?*

Responses to this question provide insight into bill impact mitigation during the transition period.

For about one-third (36 percent) of Core respondents, a monthly bill increase of less than $20 per month catches their attention. The median bill increase that respondents said they notice was in the $20-$29 range, which, when compared to the median summer electric bill, is in excess of 20 percent of the total bill. CARE customers reacted to smaller bill increases, but their median summer bills are lower, so they also respond to changes in excess of 20 percent of the total bill.

Effect of Bill Protection

Respondents were asked if their willingness to try a new rate plan structure would change if they were provided with twelve months of bill protection ("Try Before You Buy" or "TBYB"), which would credit them for any bill increases during their first year on the new rate plan. TBYB was particularly beneficial in encouraging respondents to try TOU rates. With TBYB, there was a 73 percent increase in Core respondent willingness to try a mild TOU rate (from 30 percent to 52 percent), and a 133 percent increase in willingness to try a steep TOU rate (from 15 percent to 35 percent). This impact was even greater with the unexposed respondents that had not been provided rate education. Unexposed respondents willingness to try a mild

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TOU rate increased 141 percent with TBYB (from 17 percent to 41 percent) and 325 percent for a steep TOU rate (from 8 percent to 34 percent).

Rate Plan Attribute Importance

A choice modeling exercise and conjoint analysis was used to build a model that simulates different rate plan option "baskets." (See Appendix A.2 – Customer Research Methodology, for more explanation of conjoint analysis.) Respondents were shown twelve randomly generated conjoint choice tasks. Each choice task was comprised of three discrete choice options. The conjoint methodology resulted in about 82,000 Core respondent choice tasks that revealed relative preferences for rate plan structures, kWh pricing, and other types of fees. Analysis of these responses showed that three attributes were most important when respondents made choices:

- Monthly service fees and price per kWh levels were the **most** important attributes impacting choice of rate plans.
- Rate structure itself was a bit less important, but still an important factor in the decision. Respondents preferred simpler rate plans:
  - Respondents preferred flat and two tier rate plans the most
  - Respondents preferred three-period TOU rate plans and three-tier rate plans less.

Experience in Other Jurisdictions

Respondents were surveyed in two North American jurisdictions outside California where there are significant numbers of residential customers on TOU rates. In Arizona, Arizona Public Service (APS) and Salt River Project (SRP) have moved 30 percent to 40 percent of their residential customers onto optional TOU rates. This migration has occurred over two decades. SRP, for example, reached about 20 percent

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penetration in the first ten years, and now close to 30 percent of its residential customers are on TOU rates.

In Ontario, Canada, Hydro One has moved almost all of its residential customers onto a mandatory TOU rate over the past several years.

An interesting observation about the two jurisdictions that have a large portion of their residential customers on TOU rates is that their customer satisfaction levels are significantly higher where customers are given an optional TOU rate versus a default or mandatory TOU rate. Hydro One respondent satisfaction levels were very low, while the Arizona respondent satisfaction levels were quite high. While there are many factors that ultimately go into utility satisfaction scores, this data provides credible evidence about how rates and satisfaction can be linked.

	SRP/ APS	Hydro One	CA IOU Core
Satisfaction (Top 3 Box)			
Availability of Meaningful Rate Plan Options	63%	23%	41%
Timely Rate Change Communications	51%	28%	41%
Rate Plan Education	48%	19%	33%
Fair Price	41%	12%	32%
Keeping the Lights On	80%	41%	64%
Highly Satisfied with Utility	76%	37%	59%

APS/SRP respondents were generally the most satisfied with their utility. In addition, Hydro One respondents on mandatory TOU rates were not much more aware or knowledgeable about TOU rates than APS/SRP customers that have opted in to TOU rates over time. This represents little evidence that mandatory TOU rates successfully engage customers.

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3.5. Conclusion

Market research and recent experience have shown that current and future rate designs / options can have significant impacts on many customers. Customers want meaningful rate plan options, and are willing to change their behavior to lower their bills. In follow-up comments, survey participants also overwhelmingly indicated their interest in the topic of electric rates and how energy use translates to their bill. Considering customer preferences and attitudes is critical to the development of rate plan options that engage customers with their energy use while improving customer satisfaction and helping achieve State policy goals. In Chapter 4, "Typical Bill Impacts - PG&E Electric Rate Design Reform Proposal vs. Current Rate Structure," PG&E addresses how the transition to a new set of rate plan options will help customers manage bill impacts and make choices among different rate plans.

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4. CHAPTER FOUR: Typical Bill Impacts PG&E Electric Rate Design Reform Proposal vs. Current Rate Structure

4.1. PG&E's Bill Calculator Model

In late 2012 and early 2013, PG&E developed its Bill Calculator Model to enable the CPUC's Energy Division and various parties to analyze various rate design scenarios and compare those with respect to the rate design principles described in the Residential Rate OIR.[88] The Bill Calculator Model uses the 2009 Residential Appliance Saturation Survey (RASS) data, merged with 2011 customer usage data, to design the rates and calculate the corresponding bill impacts for PG&E's Proposal.[89] The RASS data consist of 7,782 sample points covering all PG&E baseline territories. Using this customer sample, the bill calculator first determines the amount of revenue collected based on present rates. This revenue amount is then adjusted for the CARE subsidy amount to determine the revenue requirement with no CARE subsidy. The resulting revenue requirement is then used to design the rates of various non-TOU and TOU rate structures (referred to as "Proposed Scenarios"), calculate the bill amounts and CARE subsidies, and also estimate whether the particular rate structure results in the total amount of energy consumed decreasing (i.e., energy conservation) or increasing. In addition, the Bill Calculator Model determines cost-based bill amounts using marginal cost information for generation, transmission, distribution, and other charges. The cost-based bill amounts can be used as a benchmark against which to evaluate the cost basis of any proposed rate scenario. The Bill Calculator Model thus allows users to assess the extent to which a rate scenario serves the rate design principles.

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[88] *Administrative Law Judges' Ruling on Workshop*, R.12-06-013, January 31, 2013, pp. 4-5.

[89] The Bill Calculator allows bill impact evaluation of various rate design structures. PG&E's Proposal includes a two tiered non-TOU rate structure and a flat TOU rate structure.

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4.2. Designing Rates With the Bill Calculator Model

The Bill Calculator Model allows the user to develop various combinations of non-TOU and TOU rate designs. For example, non-TOU rate structures can be designed either as a single flat rate, or as a multi-tiered rate structure with up to five tiers. The user can also specify a design with a monthly fixed fee or a minimum bill amount. If a tiered rate structure is chosen, the user can specify the levels of the Tier 1 and Tier 2 rates or the rate differentials between different tiers' rates. The Bill Calculator Model processes these various input assumptions automatically and produces specific rate values as outputs. For TOU rates, the Bill Calculator Model can design rates with either two or three TOU periods. Details of the inputs and functionalities, and instructions for how to run the calculator, are described in the Bill Calculator User Manual.[90]

4.3. Proposed Rate Design

As described in the Executive Summary, PG&E's Rate Design Proposal is for customers to have the choice between two basic rate plans:

1. A standard rate with two tiers and no TOU periods; and
2. An optional TOU rate without tiers.

Both the standard (tiered, non-TOU) and the optional (non-tiered, TOU) rate schedules would have a monthly fixed fee replacing the minimum bill amounts currently applicable to PG&E's residential rate plans. CARE customers would have a similar choice between a standard tiered rate and a non-tiered TOU rate, but with all rate components discounted by an explicit CARE discount percentage.

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[90] A copy of PG&E's Bill Calculator User Manual is attached as Appendix B.

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4.4. Cost Basis of PG&E's End State Rate Design

To illustrate how PG&E's proposed rate design represents an improvement compared to current rates in terms of more closely reflecting cost of service and "rate efficiency," PG&E used the Bill Calculator Model to calculate average rates for each rate option and compared them to average cost. In the figures below, PG&E used its 2014 average rate forecast (based on the marginal cost based calculation included in the Bill Calculator) as a proxy for average cost, to illustrate how the end state rates bear a better resemblance to cost basis as usage increases. As can be seen in Figures 4-1 and 4-2 below, the average cost (cents per kWh) shows an initially declining curve which moves to a finally near-flat shape relationship with the monthly average usage. In contrast, Figure 4-1 shows that, while the existing four-tiered structure has the average rate increasing with average monthly usage, PG&E's illustrative rate structures as shown in Figure 4-2 result in average rates declining with the monthly average usage in a way that is consistent with the average cost behavior. This demonstrates that PG&E's Rate Design Reform Proposal is more cost-based and more economically efficient when compared to the existing rates, as the shapes of those curves resemble the shapes of the cost-based rate curve more closely.

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FIGURE 4-1
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATIVE 2014 RATE EFFICIENCY OF THE CURRENT RATE STRUCTURES USING RASS 2009 SAMPLES[91]

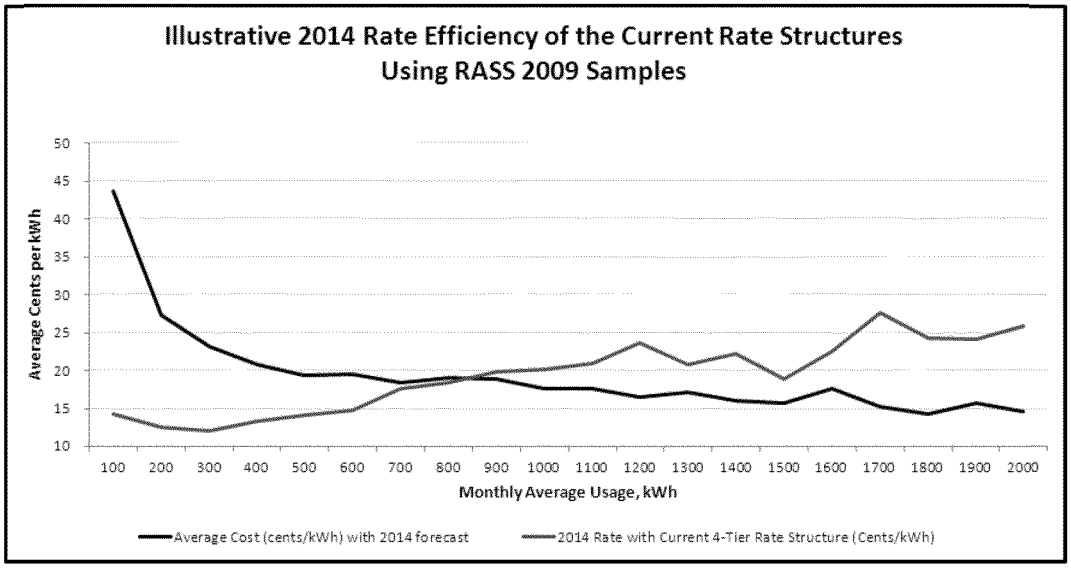
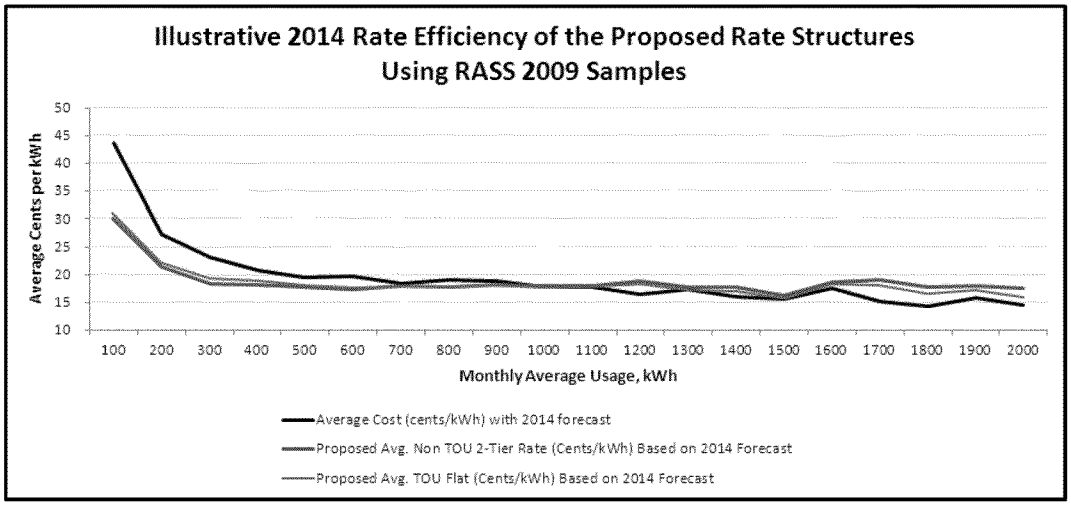


FIGURE 4-2
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATIVE 2014 RATE EFFICIENCY OF THE PROPOSED RATE STRUCTURES USING RASS 2009 SAMPLES



4.5. Energy Conservation

PG&E used the Bill Calculator Model to estimate the effects of its proposed end state rates on overall energy consumption, relative to the total consumption level that

91 PG&E adjusted the Bill Calculator to be able to use 2014 revenue forecast to generate Figure 4-1 and Figure 4-2.

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would occur based on the current rate structure. Specifically, PG&E input a -0.20 price elasticity estimate in its input assumptions for customers switching from current tiered to non-TOU rates, and elasticities of -0.20 (substitution) and -0.04 (daily) for the non-TOU to TOU rate change. The results showed reductions in overall energy usage between approximately 2 percent to 3 percent from customers migrating from today's currently tiered rates to an end state two-tiered standard and non-tiered TOU rate structures over an illustrative four year period. PG&E has not yet determined the most appropriate transition period for its Rate Design Reform Proposal, and thus the transition period for purposes of evaluating energy conservation effects may be shorter or longer than the illustrative period. However, the energy conservation effects of the Rate Design Reform Proposal are positive without regard to the length of the transition period.

4.6. Choice, Simplicity and Stability

PG&E's proposed standard (non-TOU) rate design has only two tiers, which is much simpler than the current four-tier structure. For optional TOU rates, PG&E's proposed rate design has no usage tiers at all, which is *far* simpler than today's four-tiered TOU rate. In addition, PG&E's Proposal that the CARE discount be provided via a flat discount percentage of non-CARE bills (whether standard or TOU) further simplifies the tariffs. Moreover, PG&E's proposed new two-tier rate structure significantly reduces today's high summer bill volatility, by significantly reducing the magnitude of the highest tier rate.

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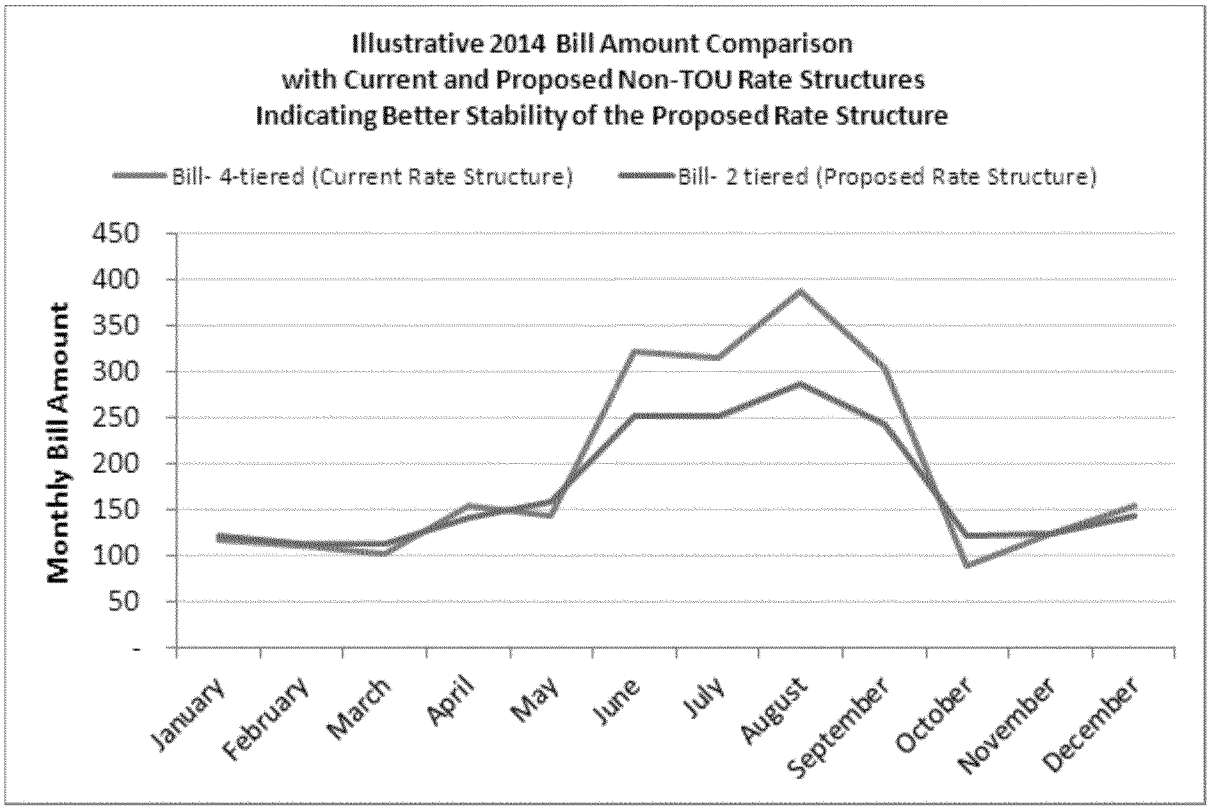
FIGURE 4-3
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATIVE 2014 BILL AMOUNT COMPARISON WITH CURRENT AND PROPOSED NON-TOU RATE STRUCTURES INDICATING BETTER STABILITY OF THE PROPOSED RATE STRUCTURE



4.7. Transition Analysis Methodology

PG&E understands that its Rate Design Reform Proposal cannot be implemented immediately, but rather must be implemented over a reasonable transition period to manage bill impacts on some customers while also providing bill relief to others. While the transition period must be sufficient to keep bill impacts manageable, at the same time those customers who are being harmed by the current rate design (and who have, over the last decade, shouldered a disproportionate share of the cost burden allocated to the residential class) should receive timely rate relief.

Key considerations that drive the pace at which customers should be transitioned include: (a) managing customer bill impacts, (b) evaluating tolerance for bill increases as it relates to customers' energy burdens (affordability or bill-to-income ratios),

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(c) coordinating the pace of the transition in years with future utility revenue requirements changes, (d) managing the amount of revenue loss that can occur with increased TOU rate plan adoption by customers, and (e) determining the appropriate levels each year of particular rate components like the monthly fixed fee and the CARE discount percentage.

As described above, PG&E's Proposal for standard rates involves moving from the current four-tiered structure to the two-tiered structure that existed before the energy crisis, coupled with a monthly fixed fee to more fairly collect a portion of PG&E's fixed costs of service. Similarly, PG&E's Proposal for voluntary TOU rates involves moving from the complicated four-tiered TOU rates that exist today to a much simpler TOU rate schedule without any tiers and with a monthly fixed fee. Different approaches can be employed in order to get from the current to the proposed new designs. One way to do this is to calculate rates each year under both the current and the new proposed rate designs, and take the weighted average of the two (with the weights gradually changing over time to arrive at the new rate design).[92] However the rates are calculated, the important thing is for the rate changes to occur at a pace that provides long needed rate relief for upper tier customers, while at the same time providing lower tier non-CARE and CARE customers with the means to manage their energy bills relative to their energy burdens.

In this proceeding the Commission need not, and in fact should not, adopt any particular transition schedule. That can be done in future rate proceedings based on

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[92] For example, if it is desired to have the transition occur over a four-year period, in the first year the current rates would be given a weight of 0.75 and the new proposed rates a weight of 0.25. Then in the second year, each set of rates would be given a weight of 0.50. In the third year, the current and new rates would receive weights of 0.25 and 0.75, respectively. Finally, in the fourth year the current and new weights would be zero and one, and the transition would be complete.

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then-current information about revenue requirement and sales forecasts. Rather, in this proceeding, the Commission should approve PG&E's Proposal for the optimum features of appropriate, cost-based, rate structures (standard and TOU) toward which rates should change. The details as to the path to the proposed rate design structure, as well as the optimal length of the transition period, can be determined later.

4.8. Customer Affordability

PG&E has analyzed the impact of illustrative rate design proposals on affordability. To do this, PG&E utilized customer-reported income data from the aforementioned 2009 RASS conducted by California Energy Commission combined with bill amounts obtained from the Bill Calculator Model to calculate bill-to-income ratios. Particular focus was paid to the first year of transition, since the analysis suggested that the second year and beyond will have similar or lesser impacts than the first year.

Bill to income ratios were calculated for the following cases:

- Case 1: 2013 bill amounts based on PG&E's May 2013 rates;
- Case 2: 2014 bill amounts based on the 2014 forecasted rates assuming that the rate structures remain the same as of today (i.e., four-tiered rate structure with a minimum bill amount and no customer charge); and
- Case 3: 2014 bill amounts based on the 2014 forecast rates assuming that the proposed new rate structure is in place (including a customer charge replacing the minimum bill amount).

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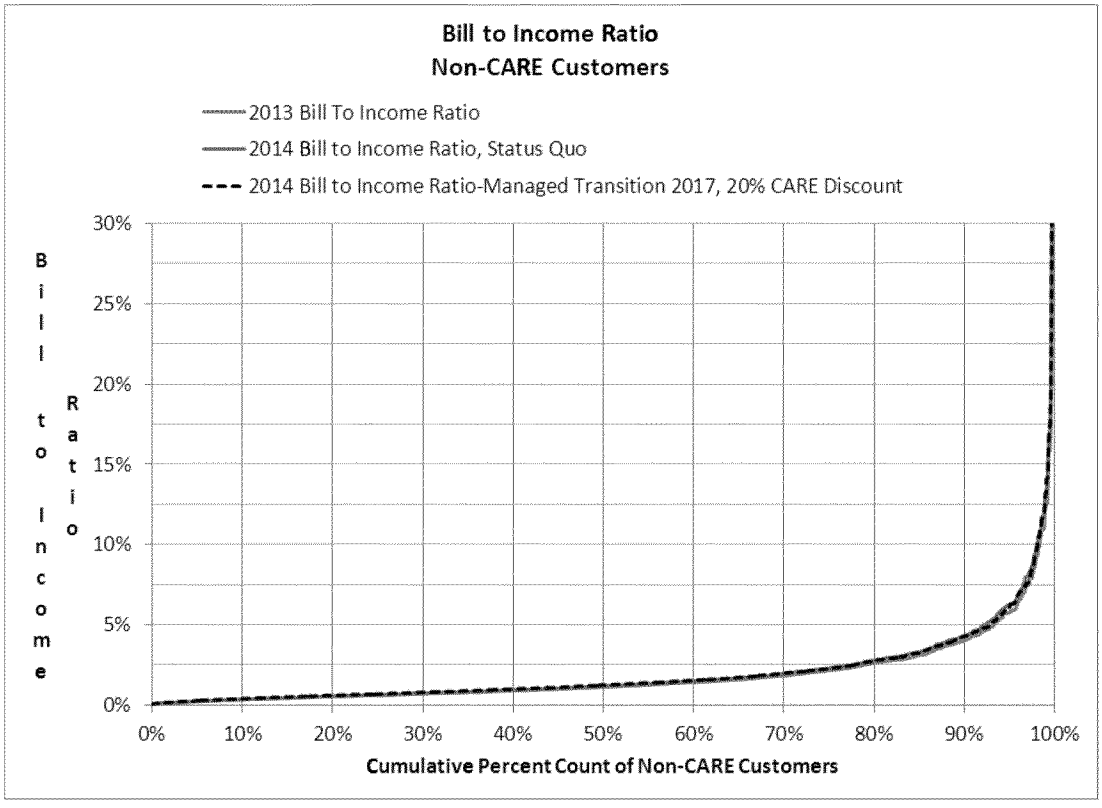
The bill-to-income ratios described above are shown in Figures 4-4 (for non-CARE households) and 4-5 (for CARE households) below.[93] The horizontal axes of these figures show the cumulative percent count of non-CARE and CARE customers respectively (arranged in ascending order of bill-to-income ratio), while the vertical axes show the bill-to-income ratios. Although the figures and length of the transition period are illustrative only, and PG&E's specific rate proposal may differ, the figures show that the impact of an illustrative four year transition period on the bill-to-income ratios of non-CARE customers is insignificant, while the similar impact on CARE customers' ratios is slightly larger but still very modest and manageable.

FIGURE 4-4
PACIFIC GAS AND ELECTRIC COMPANY
BILL TO INCOME RATIOS FOR NON-CARE CUSTOMERS



[93] These charts include the effect of customers choosing between non-TOU and TOU rates based on assumptions regarding what a tolerable bill impact would be.

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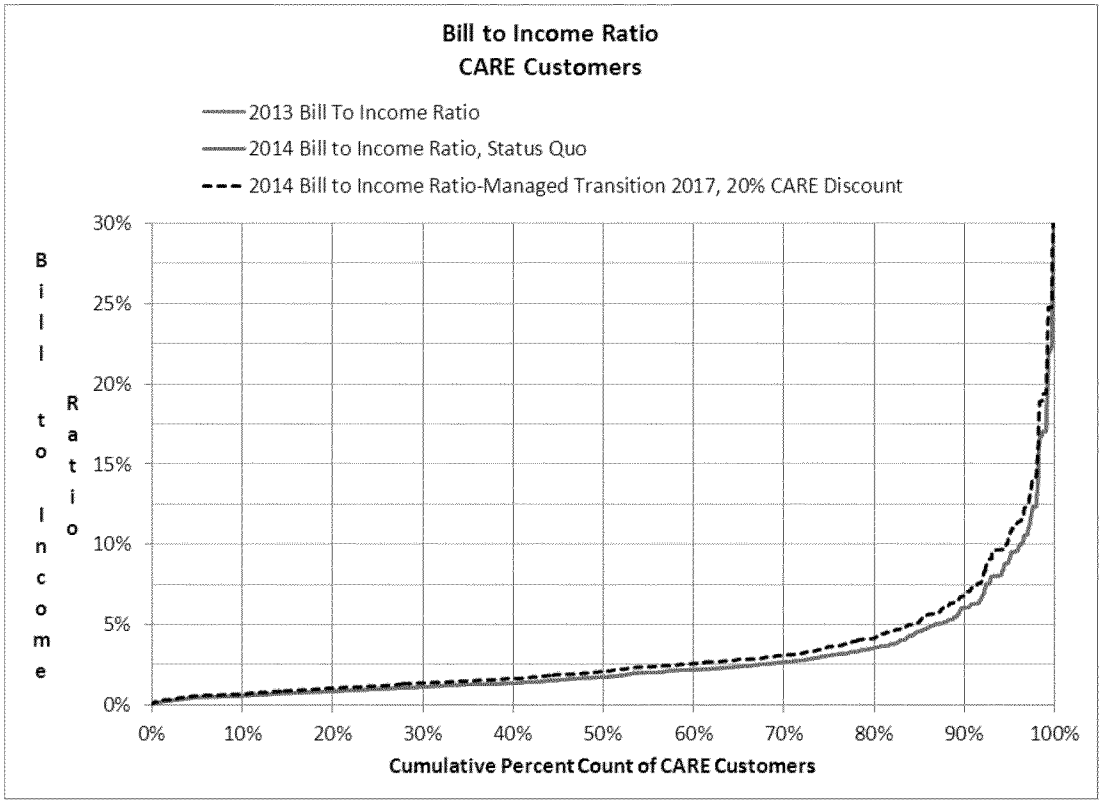
FIGURE 4-5
PACIFIC GAS AND ELECTRIC COMPANY
BILL TO INCOME RATIOS FOR CARE CUSTOMERS



4.9. Conclusion

The Bill Calculator has enabled review of various illustrative rate structures and the relative bill impacts for each structure analyzed. The results suggest that proposed rate structures with fewer or no tiers and with a reasonable monthly fixed fee most appropriately serve the optimum rate design principles, and will result in a significant improvement from the current rate structures. The results of the transition analysis also suggest that the changes proposed to achieve the rate design structure can be accomplished in a reasonable timeframe with manageable changes and impacts on customers.

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5. CHAPTER FIVE: Benchmarking PG&E's Electric Rate Design Reform Proposal With Other Utilities in California and Outside California

5.1. Scope of Benchmarking

PG&E has benchmarked electric rate design structures of other utilities and in other states.[94] As discussed in more detail below, PG&E's benchmarking indicates that California's existing residential electric rate design structure is far out of step with the residential rate design structures of other California energy and non-energy utilities and utilities in other states. In fact, electric utilities in other states with progressive energy and environmental policies, including policies supporting energy conservation, renewable energy and direct assistance to low income utility customers, achieve their energy and environmental goals with electric rate design structures very similar to PG&E's Electric Rate Design Reform Proposal.

5.2. Rate Efficiency

Appropriate cost basis is a cornerstone of rate design. To benchmark the cost basis of the current rate structure, PG&E has studied the relationship of the average rate to the usage (kWh) of a large number of Utilities. The 2012 rate data shows that the average rate declines as the usage increases for most of the utilities (except California's investor owned utilities). This is shown in the figure below. PG&E's proposed new rate structures (two-tiered non-TOU and flat TOU) along with monthly fixed fee will help in achieving a declining average rate with increasing usage which will then better reflect a more appropriate cost basis behavior similar to that demonstrated by the rate structures of most of the utilities in the nation.

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[94] Rates structures of twenty-two utilities from outside California have been surveyed.

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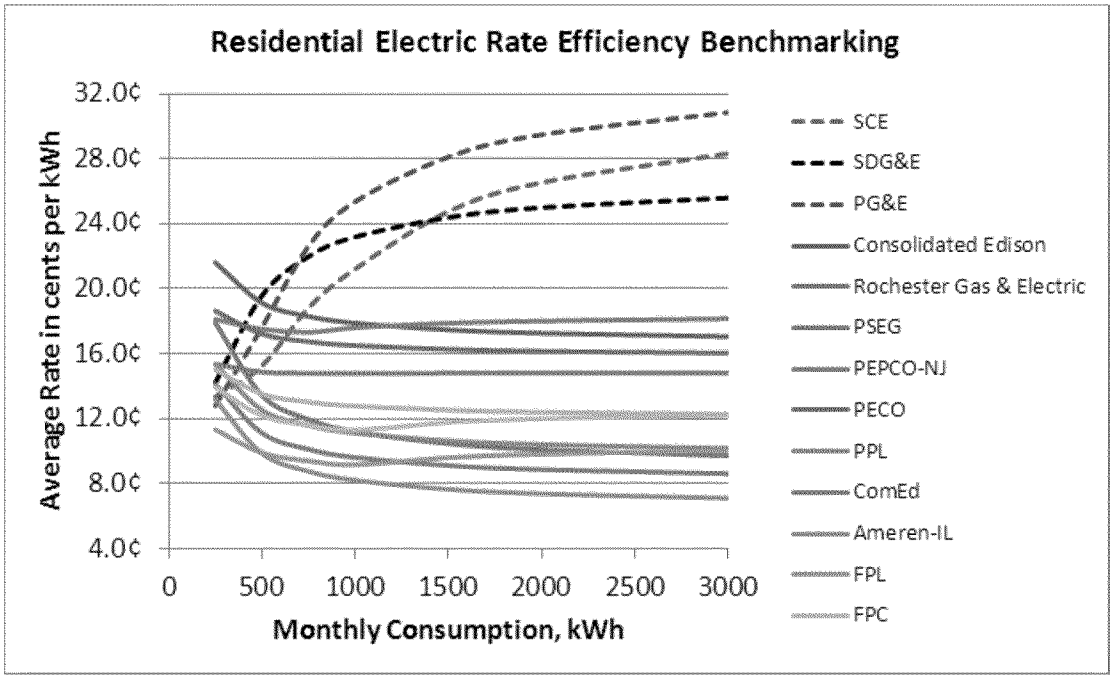
FIGURE 5-1
PACIFIC GAS AND ELECTRIC COMPANY
COMPARISON OF COST BASIS EMBEDDED IN 2012 RATES OF A FEW UTILITIES



5.3. Monthly Fixed Fee

PG&E has reviewed the monthly fixed fees that existed in 2012 across various utilities in the nation. These utilities have monthly fixed fees of varying amounts in their rate structures. Approximately 27 percent of the utilities surveyed have fixed fees above $10/month, while 64 percent of these utilities have fixed fees between $5/month and $10/month. Incorporating a monthly fixed fee in the rate structure helps to improve the cost basis of rates, since a significant portion of the utilities' costs is fixed. For this reason, PG&E's proposed new rate structures will include a suitable monthly fixed fee.

In addition, California publicly-owned utilities such as the Sacramento Municipal Utility District (SMUD), have monthly fixed fees, including in climate zones with above-average usage. For example, SMUD currently charges $12.00 per month for

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non-CARE customers and $3.50 per month for CARE customers, and plans to ramp up its non-CARE fixed fee to $20 over time.[95]

It is important to note that a monthly fixed fee, although fixed in nature, does not negatively impact energy conservation. Research shows that customers respond to the total bill (i.e., average rate) rather than the marginal (per kWh) rate. Hence a suitable monthly service fee will not impact energy conservation negatively, and will improve the cost basis and economic efficiency of rates.

95 *See* discussion in Section 2.1.4, above.

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FIGURE 5-2
PACIFIC GAS AND ELECTRIC COMPANY
MONTHLY FIXED FEE DATA FOR REPRESENTATIVE UTILITIES

Utility	State	Monthly Service Fee
Alabama Power Co	AL	$ 14.50
Arizona Public Service Co	AZ	$ 8.55
Baltimore Gas & Electric Co	MD	$ 7.50
Commonwealth Edison Co	IL	$ 15.06
Connecticut Light & Power Co	CT	$ 16.00
Consolidated Edison Co-NY Inc	NY	$ 15.76
Consumers Energy Co	MI	$ 7.00
Detroit Edison Co	MI	$ 6.00
Duke Energy Carolinas, LLC	NC	$ 9.90
Florida Power & Light Co	FL	$ 7.24
Georgia Power Co	GA	$ 9.00
Massachusetts Electric Co	MA	$ 4.00
Niagara Mohawk Power Corp.	NY	$ 17.00
Northern States Power Co	MN	$ 7.11
PECO Energy Co	PA	$ 7.09
PPL Electric Utilities Corp	PA	$ 14.17
Progress Energy Carolinas Inc	NC	$ 7.17
Progress Energy Florida Inc	FL	$ 8.76
Public Service Co of Colorado	CO	$ 6.75
Public Service Elec & Gas Co	NJ	$ 2.43
Union Electric Co	MO	$ 8.03
Virginia Electric & Power Co	VA	$ 7.00
Pacific Gas & Electric Co	CA	$ -
San Diego Gas & Electric Co	CA	$ -
Southern California Edison Co	CA	$ 0.87

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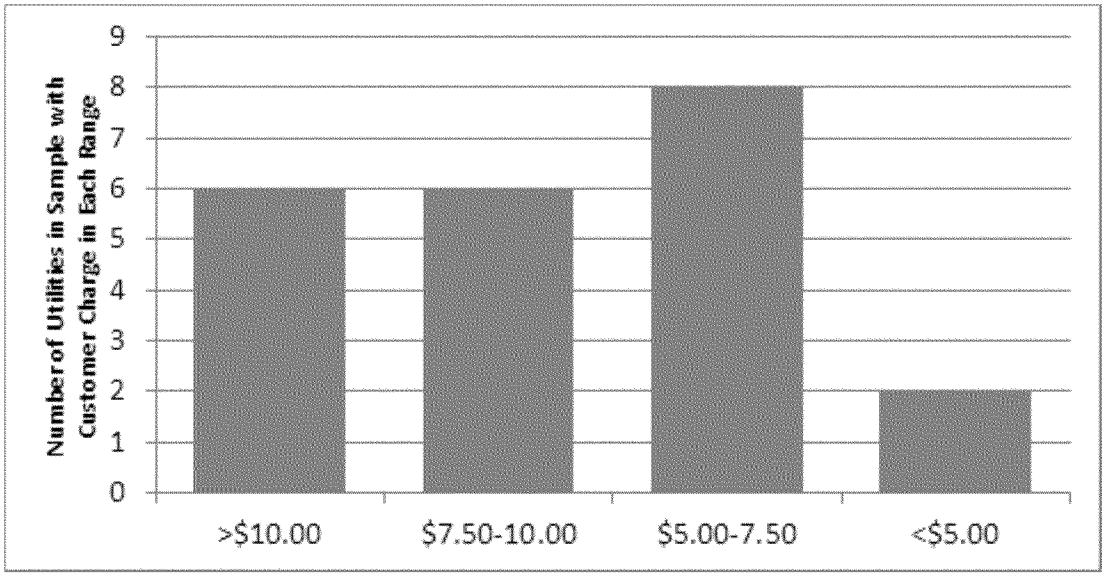
FIGURE 5-3
PACIFIC GAS AND ELECTRIC COMPANY
MONTHLY FIXED FEE DISTRIBUTIONS FOR REPRESENTATIVE UTILITIES



5.4. Number of Rate Tiers

PG&E has reviewed the number of rate tiers that existed in 2012 across various utilities in the nation. Twenty out of the twenty-two utilities surveyed have two tiers or fewer in their residential rate structures. Based on this benchmarking data as well as PG&E's analysis of various rate design structures, PG&E has proposed a two-tiered non-TOU rate structure and a flat TOU rate structure that will serve the CPUC's rate design principles significantly better than the current rate structures.

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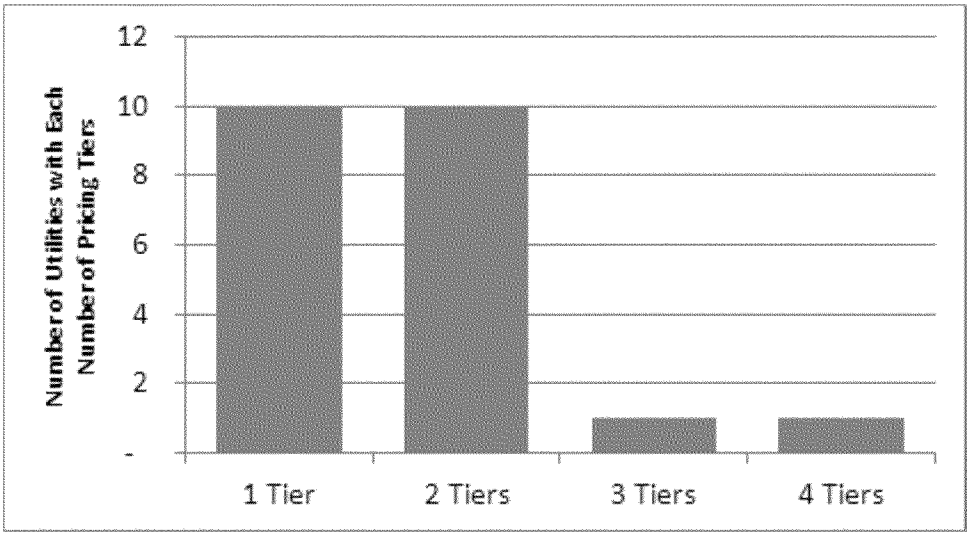
FIGURE 5-4
PACIFIC GAS AND ELECTRIC COMPANY
NUMBER OF RATE TIERS FOR REPRESENTATIVE UTILITIES



5.5. Conclusion

PG&E's benchmarking of other investor-owned and publicly owned electric utilities demonstrates that PG&E's Rate Design Reform Proposal is in line with the vast majority of its peer utilities around the country.

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6. CHAPTER SIX: Policy Recommendations and Next Steps

6.1. The Current Residential Electric Rate Structure Fails to Meet the Commission's Rate Design Principles and Is Unfair and Inequitable to Millions of PG&E's Customers

As demonstrated above, California's current investor-owned utility residential electric rate design structure is neither cost-based nor equitable, and therefore fails to meet the Commission's rate design principles. Millions of PG&E's residential electric customers across all income levels and all parts of PG&E's service territory are paying millions of dollars a year in higher electric bills because of the broken rate design structure. The broken rate structure cannot be fixed by small incremental steps or without changes in law. Nor can it be fixed overnight. But it must be fixed soon, or else the unfair shifting of costs among customers will only get worse and potentially derail California's ambitious energy and environmental agenda. The Legislature should expeditiously adopt AB 327 (Perea) to give the Commission the tools to fix and reform today's broken rate structure, and the Commission should support AB 327.

6.2. PG&E's Proposal to Reform the Residential Electric Rate Design Structure Will Meet All the Commission's Rate Design Principles and Remove the Unfairness and Inequity in the Current Rate Structure

PG&E's Rate Design Reform Proposal will meet the Commission's fundamental goals of returning residential electric rates closer to cost while maintaining and improving the affordability of electricity for those who most need it. Over a reasonable transition period, PG&E's proposal will provide residential customers with simple and understandable rate options for their electricity needs, including a time-of-use rate option that allows them to save energy and money on their monthly bills by shifting their energy use to off-peak periods. The decade-old "temporary" tiered-rate structure will be

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returned toward its historical cost basis, including a differential between baseline rates and other rates that is reasonable, closer to cost, and manages significant bill volatility. Finally, PG&E's proposal opens up residential electricity markets to much broader opportunities for third-party entrepreneurs to provide all residential customers with "beyond the meter" energy solutions that align with the transparent and accurate price signals communicated by the reformed residential rate structure.

6.3. PG&E Will Provide a Reasonable Transition to Protect Customers and Ensure that Customers Are Fully Aware and Educated on the New Rate Structure

PG&E's rate vision is built on a foundation of both customer choice and customer understanding of their choices. An optimal rate design would return PG&E's residential electric rates toward cost and an efficient level of rate assistance to needy customers as soon as possible. However, PG&E's proposal recognizes the essential role that customer education and understanding must play in a successful transition to the new rate structure. Therefore, PG&E's proposal includes a multi-year transition period with an expectation that comprehensive, extensive outreach and education of residential electricity customers is needed before the rate design changes are fully implemented.

6.4. PG&E's Rate Design Reform Proposal Will Protect Low Income Customers and Increase the Tools and Assistance Available to Those Customers to Help Them Pay Their Utility Bills

PG&E's Rate Design Reform Proposal maintains fair and substantial rate assistance to low income customers under the CARE program. It does so in recognition that not only is the current CARE discount too high and unfocused relative to historical levels, but also that the CARE program itself will need to undergo reform and improvements during the same period that PG&E's Rate Design Reform Proposal is

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being implemented. Like the tiered residential rates themselves, the size of the CARE discount and subsidy is unsustainable. But PG&E's proposal does not just rely on a mechanical reduction in the CARE discount itself. Instead, PG&E would improve the tools and assistance available to low income customers to manage and reduce their energy burdens and help pay their monthly energy bills. As a result, PG&E intends that, as the CARE program itself becomes more efficient and targeted, the reduction in the CARE discount will be modest in effect and manageable for customers.

6.5. PG&E's Rate Design Reform Proposal Will Provide More Effective Incentives for Energy Conservation and Greater Reductions in Greenhouse Gas Emissions Than the Current Rate Structure

A primary goal of PG&E's Rate Design Reform Proposal is to ensure that residential electric rates accurately incorporate the price of carbon to all customers at all time periods of the day over a reasonable transition period. In so doing, PG&E's proposal will provide millions of customers with a more appropriate incentive to conserve and manage their energy use as part of their monthly energy bills, thus expanding the opportunity for those customers to directly reduce their "carbon footprints" and address climate change. For the first time in over a decade, most residential electric customers will see the real price of energy, including fully internalizing the costs of carbon and other environmental externalities consistent with California's progressive energy and environmental policies.

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6.6. The Commission Should Adopt PG&E's Electric Rate Design Reform Proposal as the Preferred Rate Design for Residential Electric Rates, and Authorize PG&E to File a Formal Rate Design Application to Implement a New Residential Electric Rate Structure Consistent With the Proposal

As discussed above, PG&E's Rate Design Reform Proposal is fully supported by the facts and demographics of PG&E's customers and costs of service, and is consistent with the Commission's principles for optimal rate design. The Commission should adopt PG&E's Rate Design Reform Proposal as the preferred rate design policy for PG&E's residential electricity customers. The Commission should also authorize PG&E to file a formal rate design application to implement a new residential electric rate design structure consistent with PG&E's proposal. The California Legislature should enact AB 327 (Perea) to provide the Commission, PG&E, and PG&E's electricity customers the tools to put PG&E's Proposal into effect and provide PG&E's customers with the bill relief they need.

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ELECTRIC RATE DESIGN REFORM PROPOSAL OF PACIFIC GAS AND ELECTRIC COMPANY MAY 29, 2013

Rulemaking 12-06-013
California Public Utilities Commission

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Executive Summary

The current residential electric rate structure in California is broken. Since the energy crisis more than a decade ago, standard residential electric rates in California have moved far from basic rate design principles, including the key principles that rates should be based on cost to serve and should be understandable to customers. This is simply unsustainable.

PG&E's Electric Rate Design Reform Proposal, presented below, fixes the broken rate design structure and complies with the Principles of Optimal Residential Rate Design adopted in the Scoping Memo in this proceeding. PG&E's Proposal also responds fully to the questions on rate design proposals included in the Scoping Memo as revised by the March 19, 2013, ALJ Ruling. Coupled with enactment of rate reform legislation such as Assembly Bill (AB) 327 (Perea), PG&E's Proposal will provide residential electric customers in California with significant relief from high and volatile electric bills.

Background

Over a million PG&E residential electric customers are paying electricity bills that are higher than PG&E's average cost of serving them.[1] Unless action is taken soon to fix the way rates are set, many of these customers will pay prices in 2020 that are more than double the average residential cost of service.[2] Figure 1 shows the current problem: an 18.3 cents per kilowatt-hour (kWh) gap between the top tier rate being charged to PG&E's non-CARE customers using more than 130 percent of baseline

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[1] Based on PG&E's Schedule E-1 residential electric rates effective May 1, 2013, and 2012 residential revenues, accounts and sales by rate schedule.

[2] Based on current PG&E's 2013 revenue requirements in PG&E's 2013 Annual Electric True-up consolidated rate change filing, and PG&E's internal illustrative revenue requirement forecast for 2014-2022, as of May 1, 2013.

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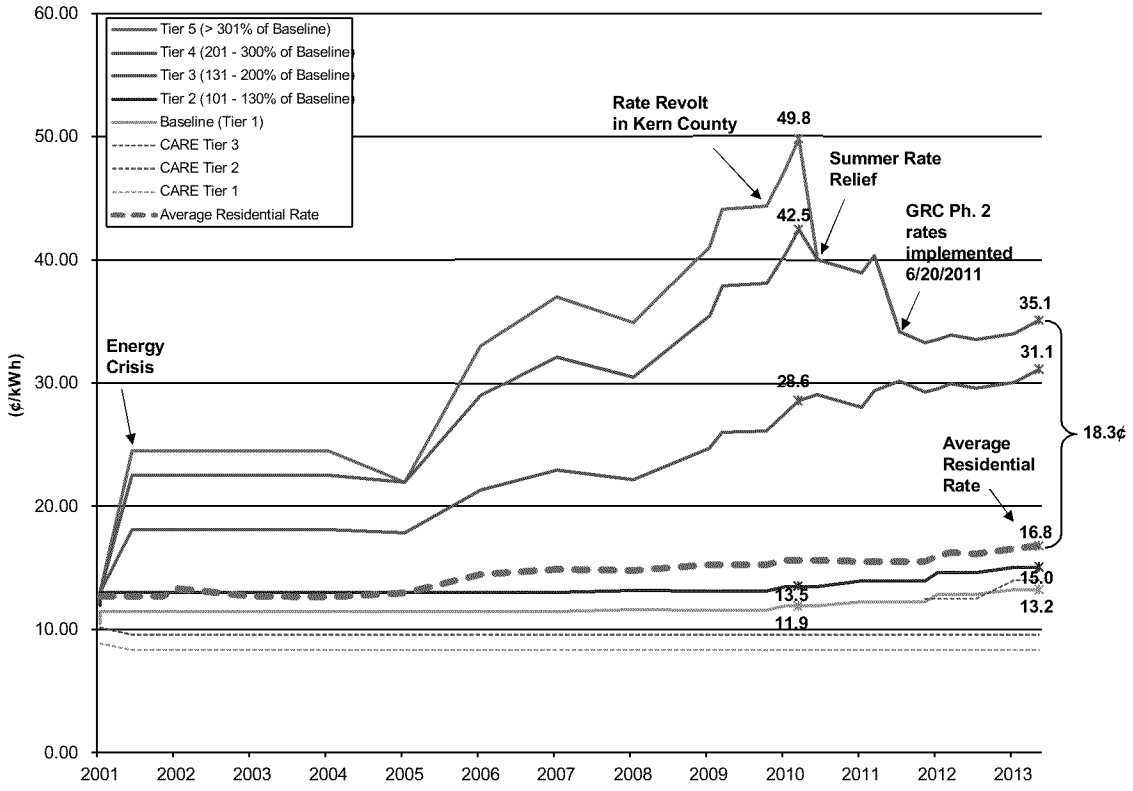
quantity (35.1 cents/kWh) and the average rate paid by all of PG&E's residential customers, represented by the dotted purple line (16.8 cents/kWh). Tier 4 sales are currently being charged more than twice the average residential rate.[3]

FIGURE 1
PACIFIC GAS AND ELECTRIC COMPANY
HISTORICAL PG&E CARE AND NON-CARE RATES
2001-2013



The customers harmed by today's unfair rate structure are not limited to a particular geographic area, such as the Central Valley, but are spread across most of PG&E's service territory.[4] The majority of these customers are not rich, and they are

[3] While not quite as severe of a premium, Tier 3 sales, too, are charged a rate far in excess of the average rate (a 14.3 cents per kWh differential, or 1.86 times as much).

[4] PG&E Rate Data Analysis, 2012 Annual Statistics for Residential Customers by City, April, 2013.

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not eligible for low-income discounts.[5] More than half a million of them are middle class families with household incomes of less than $75,000 per year.[6] Nor are their overpayments trivial. In fact, one-fifth of PG&E's residential electric customers – over 1 million – now pay an average of $574 a year in excess of the average residential rate.[7]

Today's skewed, severely inclining tiered electric rates, and their inequitable impact on customers throughout PG&E's service territory, also are very challenging for customers to understand. Market research has shown that a majority of customers do not understand current "tiered" electric rates and many prefer a simpler rate structure.[8] Over half of PG&E customers do not even know they are on a "tiered" rate,[9] and many do not understand how the tiered rate structure – and their energy consumption – drive their utility bills.

High upper-tier rates also create bill volatility. A typical customer with only modest amounts of usage can experience much higher bills during the hottest summer months, merely by driving their modest usage from Tier 2 up into the sharply higher cost usage rates in Tier 3 and possibly Tier 4. This has led to customer frustration,

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[5] Based on sample of PG&E's residential customers responding to 2009 Residential Appliance Saturation Survey (RASS), PG&E matched reported income levels to 2012 usage data from PG&E billing files.

[6] *Id.* Of the 865,000 non-CARE lower income households with annual incomes between $30,000 and $60,000, over one-third have high usage and pay an average annual rate that exceeds the residential class average. Similarly, of the 1 million non-CARE moderate income households in the $60,000 to $100,000 annual income range, over half have high usage and pay an average annual rate that exceeds the residential class average. In contrast, over 40 percent of the nearly 1.1 million higher income households with incomes exceeding $100,000 per year have low usage and pay an annual average rate below the residential class average.

[7] PG&E Rate Data Analysis, 2012 Annual Statistics for Residential Customers by City, April, 2013.

[8] "Residential Rate Tiers Survey," King Brown Partners, June, 2012, p. 16.

[9] "RROIR Customer Survey Findings," Hiner and Partners Inc., April 16, 2013.

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confusion and dissatisfaction because bill increases are disproportionate compared to the customers' actual changes in usage.

Upper tier rates also distort the impacts of changed revenue requirements on customer bills. Over the next several years, in keeping with California's energy and environmental policy goals and requirements, PG&E needs to make significant investments in infrastructure to improve system reliability and safety, as well as to increase our clean energy resources. PG&E's customers support these utility system investments needed to maintain and improve service, but if the costs are not shared more evenly among all customers who benefit, PG&E and other California investor-owned utilities and policymakers risk a significant consumer backlash.

Fortunately, a balanced solution is within reach. In June, 2012, the California Public Utilities Commission initiated this public rulemaking to consider the problems with the broken rate structure, and the structural reforms needed to fix them.[10] In addition, the California Legislature is currently considering a bill, AB 327 (Perea), that would restore the Commission's traditional authority and obligation to design a fair and equitable rate structure for residential electric customers in open and public proceedings.[11]

The Commission's rulemaking recognizes and reaffirms a cornerstone of public utility regulation in California: that the price of electricity should reflect its cost.[12] The

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[10] *Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations*, R.12-06-013, June 21, 2012.

[11] AB 327 (Perea), http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_0301-0350/ab_327_bill_20130423_amended_asm_v98.pdf. AB 327 was approved by the California Assembly Utilities and Commerce Committee by a 15-0 vote on April 15, 2013, and by the California Assembly by a 66- 4 vote on May 23, 2013. The Committee analysis of the bill is available at http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB327&search_keywords=.

[12] R.12-06-013, pp. 10-11, June 21, 2012.

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Commission has long held that "just and reasonable rates" must be cost-based, ensuring that all customers in all customer classes receive clear and appropriate price signals, fairly based on the cost of serving them.[13] Cost-based rates encourage efficient use of electricity and discourage uneconomic decision-making by consumers. The Commission's rulemaking also recognizes that the Legislature has authorized limited exceptions to cost-based electricity pricing, in order to ensure that an affordable, basic amount of electricity is provided regardless of climate, heating fuel or medical needs,[14] and that low-income ratepayers are not over-burdened by monthly energy expenditures.[15] Accordingly, after extensive public comment, the Assigned Commissioner and Administrative Law Judges have adopted a list of principles for optimal rate design that are intended to be applied to rate design proposals filed in this proceeding.[16]

Summary of PG&E's Rate Design Reform Proposal

PG&E supports the rate design principles issued by the Assigned Commissioner and ALJs, and has developed a balanced proposal for structural reform consistent with these principles. PG&E's Proposal also provides customers with meaningful choices and more control over their electric bills. To that end, PG&E's Rate Design Reform Proposal:

- Offers **two basic electric rate plan options** that enable customers to choose a plan that works best for them. These include:

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[13] R.12-06-013, pp. 9-11, June 21, 2012.

[14] R.12-06-013, pp. 6-7, 10-11, June 21, 2012.

[15] R.12-06-013, pp. 8-9, June 21, 2012.

[16] *Administrative Law Judge's Ruling Requesting Residential Rate Design Proposals*, R.12-06-013, p. A1, March 19, 2013.

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- A **two-tiered standard residential electric rate,** with baseline allowances that allow for continued relief in the warmer climates across PG&E's service territory where summer usage tends to be higher;[17] and
- **A Time-of-Use (TOU) electric rate** with no tiers to engage those customers who are able to shift their load during the day.[18]

A "standard" electric rate plan is one on which customers who express no preference are placed, while retaining the option to choose another non-"standard" rate plan at a future time.

- Offers all other residential electric rate structures as optional riders to the basic rate plans:
  - **CARE program - a flat percentage discount off the total bill to simplify and improve transparency to customers;**
  - **Critical Peak Pricing (CPP) – higher rates during critical peak periods and credits during other periods,** in order to encourage efficient energy use during the most costly hours of the year; and
  - **Green Option - a premium charge to customers who choose more renewable energy than provided with basic rates**.
- **Captures a reasonable portion of fixed customer service costs through a monthly fixed fee,** while lowering volumetric charges commensurately.

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[17] PG&E is not proposing flat, non-tiered rates at this time, but supports the public policy goal of moving toward flat rates over time, for the same reasons as endorsed by other utilities and policymakers, such as SMUD ("SMUD Set to Lead on Electricity Pricing," Sacramento Bee, May 16, 2013, http://www.sacbee.com/2013/05/08/5402834/smud-set-to-lead-on-electricity.html).

[18] PG&E's new Electric Vehicle rate (Schedule EV) that will go into effect later this year is an example of a TOU rate option with no tiers.

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- **Rather than immediately implementing the new standard rate plans, gradually transitions customers** by changing rate values over time to manage bill impacts and allow time for effective customer outreach to educate customers on standard and optional rate plans.

By offering residential electric customers a portfolio of meaningful rate plan options, rather than a "one-size-fits-all" rate design, PG&E stands a much better chance of achieving the majority of its and the Commission's key principles and policies.

Customer understanding and acceptance of new rates will be a key indicator of the success of residential rate reform. PG&E's proposed rate design will be phased in over time to allow for enough outreach and education to minimize customer confusion and avoid bill shock. To accomplish this, PG&E proposes several transition principles:

1. **Customers will not be moved to a rate plan** they do not choose. New rates will be offered as options, and as noted above, the rates will be changed slowly over time to manage bill impacts.
2. **Customers will be able to choose and prepare for change** through meaningful outreach and education.
3. **Changes to rate structures, charges and discounts will be introduced gradually** to avoid bill shocks. For example, a monthly fixed fee could start at a low level and slowly be increased over time toward cost. The cost of the CARE discount could be slowly adjusted from the current average of 47 percent discount to an appropriate level, including through better targeting and program efficiency.
4. **The transition will take time** and require different phases of activity. For example, initial changes would be introduced after the CPUC decision in this

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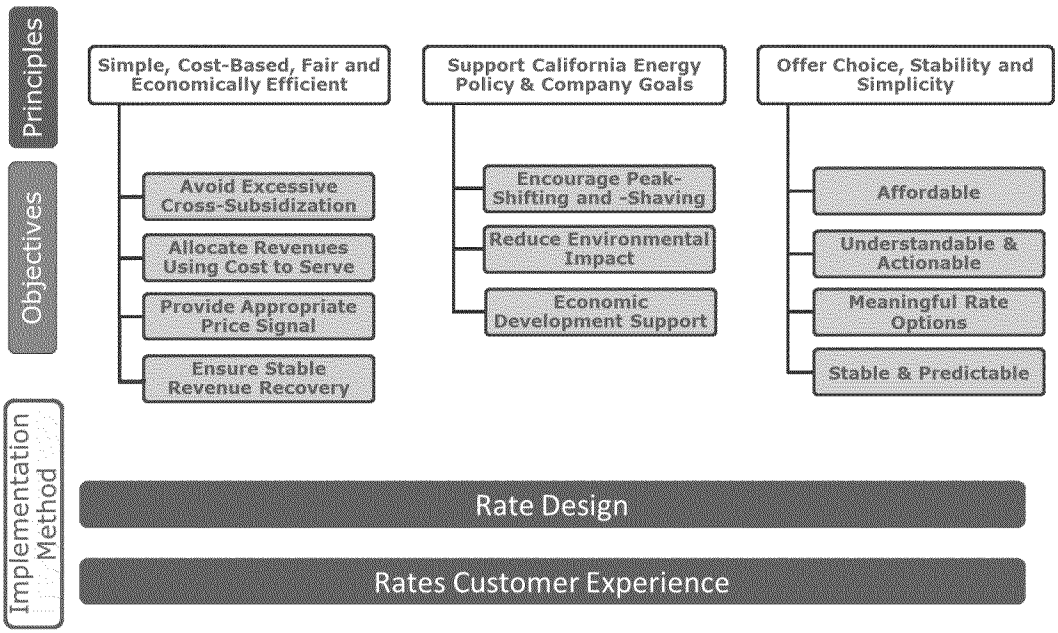
proceeding, consistent with legislative authority. Targeted outreach and education to customers with assurance of adequate funding and cost recovery will precede the implementation of new rate options. Over time, the transition to different rate options will correct the unfair rate structure that has been embedded in rates over the past decade.

PG&E's Rate Design Reform Proposal embodies PG&E's long-term customer "vision" and priorities, consistent with its overall goal of ensuring that PG&E's utility services are safe, reliable, and affordable. Figure 2 summarizes PG&E's residential electric rate design "vision":

FIGURE 2
PACIFIC GAS AND ELECTRIC COMPANY
PG&E RATE DESIGN VISION



Upon enactment of legislation that returns authority to the CPUC to review and approve changes in the residential electric rate structure, PG&E intends to implement its Electric Rate Design Reform Proposal by filing a formal ratesetting application at the CPUC requesting specific changes to residential electric rates, including details of a

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reasonable transition period to ensure that customers fully understand the new rate options available to them and that the changes to annual electric bills are reasonable, fair and manageable.

Accordingly, PG&E requests that the CPUC in this rulemaking proceeding approve the policies and goals of PG&E's Rate Design Reform Proposal, subject to the opportunity for the CPUC, stakeholders and customers to review the specific details in PG&E's subsequent ratesetting application.

In the chapters below, PG&E shows in more detail how its Rate Design Reform Proposal will fix the broken electric rate structure in California, and provide greater fairness, equity, efficiency, and simplicity for residential electricity customers.

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1. CHAPTER ONE: PG&E's Electric Rate Design Reform Proposal

The foundation of PG&E's residential Electric Rate Design Reform Proposal is that customers should be engaged to make well-informed choices from a menu of understandable rate options that fairly reflect the cost of serving those customers and provide incentives for demand response, peak shaving, peak shifting, and/or conservation. To engage customers, residential rate design must balance simplicity, efficiency, and stability. PG&E's pro-active customer choice approach will result in more engaged customers who are more satisfied and therefore more likely to provide peak load reduction and other more efficient uses of energy.

PG&E's Rate Design Reform Proposal will offer customers a variety of rate options, including rates with reasonable, equitable tier structures. Rate choices for residential electric customers will include two basic rate options: a standard tiered rate, and an optional, non-tiered time-of-use (TOU) rate plan, with additional rate riders such as an option for critical peak pricing (CPP) as an overlay available on either the standard tiered or optional TOU rate.

PG&E's Rate Design Reform Proposal provides the following changes to residential electric rates over a reasonable transition period:

- Restores gradual tiered rate differentials to bring rates closer to cost-of-service, with two tiers for rates that need a tiered structure while continuing to provide a basic amount of electricity at an affordable price.
- Offers TOU electric rate options with no tiers for those customers who are able to shift their load during the day.

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- Includes reasonable monthly fixed fees (also called customer charges) in all residential rates, with a goal of setting these monthly fixed fees over time to recover a reasonable and equitable portion of the fixed costs PG&E incurs to provide and maintain services that do not vary with the customer's actual usage.
- Provides CPP as an option that customers can choose in combination with either TOU or non-TOU rates.
- Makes California Alternate Rates for Energy (CARE) discounts a simple percentage of the non-CARE rates. The objective is to set CARE discounts over time at levels sufficient to ensure affordability for basic needs, while taking into account that historical CARE discounts have been set at 20 percent of non-CARE rates, and make other changes in the CARE program to more effectively target and deliver energy assistance to help low-income customers pay their electricity bills based on updated needs assessments.

By adopting PG&E's Rate Design Reform Proposal, the CPUC will make residential electric rates more equitable, understandable, and stable. However, PG&E's Rate Design Reform Proposal requires that the California Legislature adopt needed changes in law, such as passage of AB 327, to return to the Commission its traditional authority to design reasonable and equitable rates.[19] The rate restrictions maintained in 2009 by Senate Bill (SB) 695 have not permitted the unfair rate structure to be fixed.[20] These restrictions must be eliminated and the authority to adjust all residential

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[19] Assembly Bill 327 (Perea), http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB327&search_keywords=.

[20] Stats. 2009, Ch. 337, Secs. 4 and 5, enacting Public Utilities Code Sections 739.1 and 739.9.

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rates, including non-CARE and CARE Tier 1 and 2 rates and the ability to set monthly fixed fees, must now be returned to the Commission.

PG&E's Rate Design Reform Proposal recognizes that a reasonable transition period will be necessary in order to allow customers adequate time to understand, choose and adapt to the new rate design structure. PG&E's approach to implementing its Rate Design Reform Proposal would be to engage customers to make well-informed choices from a menu of understandable rates that provide incentives for demand response, peak shaving, peak shifting, and/or conservation. PG&E's plan will:

- Provide customers with a set of relevant and appealing rate options described above, all of which are simple enough to be effectively explained.
- Educate and provide customers a variety of tools to help them understand their energy use, how it impacts their bills, and then how they can choose the best rates for their circumstances.
- Provide a continuing focus on customer tolerance for change at any given time.

To the extent rates are understandable, fair, and stable, PG&E will be better able to recommend and encourage customers to participate in rates that both achieve the Commission's demand response goals and provide opportunities for customers to better control their energy bills.

1.1. Technology Advancements Will Support Customer Engagement in Choosing Among Rate Plans

PG&E's long-term strategy for residential customers choosing TOU rates includes not only installing SmartMeter™ technology (a process that is now almost complete), but also providing customers with tools to help them understand their rate plan options and make choices that are best for them. PG&E customers whom social

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scientists categorize as "Innovators" and "Early Adopters" are already savvy energy users who understand how their behaviors impact their bills.[21] However, the majority of PG&E's residential customers find current tiered rates confusing,[22] and require help to understand how their bills are calculated, as well as how their behavior impacts their bills.

PG&E already has implemented an online rate analysis tool that customers can access in their online "My Energy" account.[23] The rate analysis tool allows customers with SmartMeters™ to see which rate choice would result in the lowest bill under varying "energy saving behavior" scenarios, if their usage were the same as the previous 12 months. Additionally, the rate analysis tool enables customers to perform simple "what if" scenarios to help them understand how their bill might change under different rates if they can reduce or shift their usage. Another tool allows customers with SmartMeters™ to observe their historical monthly, daily, and hourly energy usage.[24] Part of encouraging customer adoption of TOU rates is education about the availability and benefits of this tool, which has already begun. These tools will help customers obtain near-real-time individualized advice on rate options, as well as education on energy use behaviors that can help them control their energy usage and save money on their bills.

In 2011, PG&E also launched the Green Button in response to the White House's challenge to design a standard format by which customers could access their

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[21] "Diffusion of Innovations," Everett M. Rogers, FREE PRESS, 2003, Chapter 7.

[22] "Residential Rate Tiers Survey," King Brown Partners, June, 2012, p. 16.

[23] PG&E's "My Usage>My Rates" web page, within the "My Energy" Portal at www.pge.com compares bill amounts for available rate plans based on nine to 12 months historical data.

[24] PG&E's "My Usage" web page, within the "My Energy" Portal at www.pge.com provides various electricity and gas usage measurements.

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energy-usage data on-line and download the data in a standard format.[25] PG&E was among the first utilities in the country to empower customers with their own data in this previously-unavailable portable format. Making detailed energy usage information available in a standardized file format encourages development of third-party applications that can increase awareness of energy consumption and enables customer engagement in energy conservation, peak-shifting, and peak-reduction behaviors.

1.2. Customer Engagement Is Tailored to the Needs of Different Segments of Customers

The customer outreach and marketing strategy PG&E envisions for its Rate Design Reform Proposal, including non-tiered optional TOU rates, will take into account the hard reality that up to half of all residential customers currently do little or no conservation or peak load shifting and are most likely to resist any attempts at influencing their energy use behavior absent more aggressive outreach and education.[26]

PG&E believes that its Rate Design Reform Proposal, with appropriate and robust customer outreach, can overcome these hurdles within a reasonable time horizon, and that load reduction benefits can be achieved through the gradual, voluntary migration of customers choosing new, more customer-friendly rate options including TOU rates. Under this approach, problems with backlash from highly resistant customers can be avoided.

PG&E's Rate Design Reform Proposal has been developed with consideration for the attitudes and preferences of PG&E's residential customers. Qualitative and

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[25] A "Green Button – Download My Data" link is provided on PG&E's "My Usage" web page within the "My Energy" Portal at www.pge.com.

[26] "Diffusion of Innovations," Everett M. Rogers, FREE PRESS, 2003, Chapter 7.

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quantitative research over the past several years has provided the following key insights for residential rate design:

- **Customers want to choose rather than be defaulted to different rate plan options**
    - The majority of customers want rate plan options that work with their lifestyle, instead of a single "one-size fits all" standard rate plan and limited alternatives
    - Those customers that have opted into alternative rate plans are more satisfied
    - There is no compelling evidence from other electric utility jurisdictions that defaulting customers to a TOU rate plan is a successful approach to engaging customers in the behaviors a TOU rate is designed to encourage
    - There is a significant, identifiable and targetable group of customers that could be transitioned to an opt-in TOU rate over time with an appropriate amount of outreach
- **Customers want a simple way to be able to save money on their electric bills**
    - Customers currently have a very poor understanding about how their energy use behavior impacts their bills
        - Those who opt in to a rate plan believe they have more control over their bills

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- Customers prefer more simple rate structures that accurately reflect costs, such as flat, two-tier and two-period TOU rates that don't require much effort to understand
  - Customers do not believe a four-tiered rate is simple or fair
- Customers believe TOU rates would encourage them to conserve energy better than a four-tiered rate.

Evidence from focus groups also has shown that, despite being confused by the current tiered rates, customers are very enthusiastic about the idea of choosing a rate that is adapted to their needs – provided they get help and "actionable" information to choose the plan that best maps to their usage. For example, given time to understand SmartMeter™ functionality, many PG&E customers have stated in focus groups that they can envision using their SmartMeters™ as a tool to help them better understand their usage and allow them to choose a rate plan that helps them reduce their bills.

Although PG&E's optimal rate design cannot be achieved immediately or without trade-offs, the primary goals remain a standard electricity rate structure that is more fair and affordable for all customers by moving rates closer toward the cost of service. In many ways, PG&E's Proposal represents a return to the key principles for cost-based residential electric rates that guided California rate policy before the energy crisis of 2000-2001. These same basic principles have continued to apply to residential gas rates, which have never been subject to the same legislative constraints as the electric rates.

PG&E's Rate Design Reform Proposal substantially mitigates the massive cost-shift problem in the current residential rate structure over a reasonable time frame, and retains the CARE program and the baseline rate structure. This ensures that every

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PG&E residential customer has access to an affordable amount of electricity to meet their basic necessities and to help low income customers pay their electric bills.[27] PG&E's Proposal reforms the CARE and non-CARE rates over a reasonable transition period, in order to better target electric bill subsidies to the neediest customers and return the overall level of the subsidies toward pre-energy crisis levels. The resulting level of assistance will be determined in the appropriate Commission proceedings and take into account updated needs assessments.

PG&E's Rate Design Reform Proposal also is informed by extensive benchmarking PG&E has conducted regarding rate design practices followed in other states and by other public utilities in California.[28] The benchmarking data demonstrate that the vast majority of California publicly-owned electric utilities and many large electric utilities outside California routinely include a monthly fixed fee on residential customers' electric bills as a means of recovering a portion of the fixed costs of their electric facilities. Similarly, many other public utilities, such as water utilities, also routinely include a monthly fixed fee to more fairly recover fixed costs.[29] PG&E's benchmarking also revealed that the overwhelming majority of large electric utilities surveyed outside California – 22 of 25 – have two or fewer tiers for their residential electric rates. PG&E's Rate Design Reform Proposal will not only bring PG&E in synch with other electric utilities in California, it will also align with the consensus rate design principles adopted by major electric utilities outside California.

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[27] Public Utilities Code Sections 382 and 739.

[28] PG&E Survey of California Public Utilities Rates, April, 2013; PG&E Survey of 25 Large Electric Utilities Outside California, 2012.

[29] See, e.g., remarks of CPUC President Peevey, CPUC Business Meeting, May 26, 2011, transcribed by PG&E from a recording.

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In Chapter 2, below, PG&E demonstrates that its Rate Design Reform Proposal complies with the CPUC's rate design principles and responds to the questions posed by the CPUC in this proceeding.

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2. CHAPTER TWO: PG&E's Electric Rate Design Reform Proposal Achieves the Goals of the CPUC's Rate Design Principles

2.1. PG&E's Electric Rate Design Reform Proposal Fixes the Failures of the Existing Residential Electric Rate Design Structure

PG&E's Rate Design Reform Proposal will fix four gross inequities in the current structure:

1) ***Over a million moderate and high usage PG&E customers are charged above-cost rates that are unfair and contrary to cost-of-service ratemaking;***
2) ***Far below-cost CARE rates to 1.2 million PG&E customers provide inaccurate price signals and fail to effectively target appropriate benefits to the most needy customers;***
3) ***Lack of monthly fixed fees unfairly allocates the fixed costs of PG&E's electric service to higher usage PG&E residential customers while other customers avoid paying for PG&E services that also benefit them; and***
4) ***A multitude of different residential tiers and rate schedules confuse customers and discourage them from choosing more efficient rate options such as TOU rates that can help them conserve and save on their electric bills.***

As described below, PG&E's Rate Design Reform Proposal fixes each of these problems over a reasonable transition period.

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2.1.1. Background – Causes of Current Broken Residential Electric Rate Structure

To fix the current broken rate structure, it is necessary to understand how it became broken in the first place. For decades preceding the 2000-2001 energy crisis, California had a relatively simple two-tiered inclining block system for electric rates, with the first block moderately discounted and the upper tier slightly higher than the average residential rate as an offset. This structure was first authorized by the Warren-Miller Lifeline Act in 1976.[30] The goals of this Act were two-fold: (1) ensuring affordable rates for essential energy needs, and (2) encouraging electricity conservation.

The original Warren-Miller Lifeline approach was refined through the Baseline Act of 1982, but because it put restrictions on the lower tier price, upper tier prices mushroomed to a Tier 2-to-Tier 1 ratio of 1.74-to-1 by 1987, causing customer backlash. In response, the Legislature passed Senate Bill (SB) 987 in 1989, requiring the CPUC to rapidly phase-in a return to a more "appropriately gradual [tier] differential," and granting the CPUC the flexibility to do so.[31]

During the 1990s, the CPUC returned rates to a gradual differential between the two rate tiers, resulting in a Tier 1-to-Tier 2 ratio of 1.15-to-1 (a 15 percent differential) in

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[30] Pub. Util. Code Section 739, referenced in R.12-06-13, p. 3.

[31] The Baseline Act, which was passed in 1982 (Ch. 1541, Stats. 1982), was a revision to the Warren-Miller Energy Lifeline Act of 1975 (Ch. 1010, Stats. 1975). The original Act required baseline quantities to be priced at 75 percent – 85 percent of the system average rate (SAR). In 1988, when tier differentials had climbed to a peak of 75 percent, customer complaints about high bills caused the legislature to pass Senate Bill (SB) 987, (Ch. 212, Stats. 1988). That bill included a legislative finding that rates in excess of the baseline quantity were too high and were causing inordinately high residential bills during extreme weather. SB 987 deleted the requirement that baseline rates be established at a discount of between 15 percent – 25 percent less than the SAR, and instead directed the CPUC to increase baseline rates and use the increased revenues exclusively to reduce rates for residential service above baseline. (D.88-10-062; 29 CPUC2d 448 at p. 450.) The 1988 legislative changes also required an "appropriate gradual differential."

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the years prior to the California energy crisis.[32] In addition, SB 987 introduced a program of assistance to low-income ratepayers, with the CPUC implementing a 15 percent discount for eligible customers.[33]

However, during the California energy crisis of 2000-2001, the California Legislature temporarily capped rates in the two lowest tiers in order to protect low-usage customers from soaring prices.[34] It also provided for a significant increase in low-income ratepayer assistance in order to mitigate the impacts of the crisis on customers with fewer financial resources.[35] Unfortunately, the rate caps are still largely in place more than a decade later, long after the energy crisis ended. The discount under the

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[32] To implement SB 987 for PG&E, the CPUC brought PG&E's 1988 electric rate tier differential of 5.1¢/kWh down to 1.9¢/kWh in 1992 and finally all the way to 1.6¢/kWh in 1998. (*See e.g.*, D.89-12-057, 34 CPUC 2d 199, 443 C.O.L. 94, reducing the differential for PG&E's Tier 1 and 2 by 25 percent; D.91-04-063, 39 CPUC 2d 553, 557; D.92-04-063, 44 CPUC 2d 153, 157 – 158; D.93-06-087, 50 CPUC 2d 1, 30 – 34.). (*See also* D.92-06-020 noting that SCE's residential rate tier differential ratio of 1.39-to-1 had been reduced to a ratio of 1.33-to-1 in 1991 and was on track to reach the CPUC's stated goal of a non-baseline-to-baseline rate ratio of 1.15-to-1 by the 1995 GRC, pursuant to SB 987.) The CPUC phased-in SCE's tier reduction more quickly than for PG&E, over a 3-year period, and reviewed the reductions each year in the ECAC proceeding. (D.92-06-020, 1992 Cal. PUC LEXIS 472, *87-*91; 77 CPUC 2d 471; 135 P.U.R. 4th 17.) Similarly, the CPUC established a 3-year phase-in to bring SoCalGas' baseline allowances into compliance with the statutory percentage ranges. (*See* D.90-01-015, deciding A.89-04-021, SoCalGas' annual cost allocation proceeding; 1992 Cal. PUC LEXIS 33, *146-*149; 25 CPUC 2d 3, 109 P.U.R.4th 1.)

[33] SB 987 further required that the CPUC establish a program of low income rate assistance ("LIRA", the predecessor to today's CARE program), which then had a flat 15% discount. SB 987's baseline reductions were "inextricably linked" with this program, to "protect low income ratepayers from the rate increases that accompany baseline reform." (D.89-09-044, 32 CPUC 2d 406, 409, 412.)

[34] The initial energy crisis legislation was AB 1X, which created a new residential tier for all usage between 100 percent and 130 percent of baseline, allowing no increases on usage below 130 percent of baseline. Later, SB 695, enacting Public Utilities Code Sections 739.1 and 739.9 in 2009, rescinded AB 1X, but replaced it with numerous other restrictions, such as non-CARE Tier 1 and 2 increases limited to CPI plus 1 percent, but no less than 3 percent and no more than 5 percent, and CARE increases limited to 0 percent to 3 percent tied to the CalWORKS index. In addition, the Tier 1 rate for non-CARE customers was restricted to be no more than 90 percent of the system average electric rate.

[35] Senate Bill 5 from the First Extraordinary Session (SB X1, Stats. 2001, Ch. 7), augmented funding for the CARE program by a one-time amount of $100 million. Decision 01-03-082 and Decision 01-06-010 then increased the eligibility for CARE assistance from 150 percent of federal poverty guidelines to 175 percent of federal poverty guidelines, and the level of the discount from 15 percent to 20 percent. In addition, Decision 01-01-018 exempted CARE customers from the emergency 1 cent surcharge, and Decision 01-05-064 exempted CARE customers from the Tier 3, 4, and 5 surcharges, effectively increasing the CARE discount well above the 20 percent putative level adopted in Decision 01-06-010. Later, CARE eligibility was extended to 200 percent of federal poverty guidelines.

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California Alternate Rates for Energy (CARE) program has steadily increased so that it now averages 47 percent for PG&E's participating customers, compared to the pre-energy crisis level of 15 percent.[36] Because CARE rates have been frozen for much of the last two decades, CARE rates today effectively are 41 percent lower in real terms than they were in the early 1990s.[37]

As a result of these two "temporary" measures capping baseline rates and expanding the CARE program, the costs of the baseline and CARE subsidies have grown by hundreds of millions of dollars, with a significant amount of the costs subsidized by a minority of higher usage non-CARE customers. The CARE participation level and amount of CARE subsidies are shown in Tables 2-1 and 2-2, below.

TABLE 2-1
PACIFIC GAS AND ELECTRIC COMPANY
2012 CARE HOUSEHOLDS AND DISCOUNTS

Line No.	Highest Tier over 12 Months	CARE Households	Total CARE Discounts	% of CARE Households	% of CARE Discounts
1	Tier 1	240,000	$29,000,000	19%	4%
2	Tier 2	160,000	30,000,000	12%	4%
3	Tier 3	355,000	108,000,000	28%	15%
4	Tier 4	315,000	203,000,000	25%	27%
5	Tier 5	210,000	370,000,000	16%	50%
6	CARE	1,280,000	$740,000,000	100%	100%

[36] Compare Decision 00-07-020, approving CARE program funding at a 15 percent discount, with Decision 12-08-044, approving CARE program funding with an effective discount off the total bill of 47 percent, after taking into account CARE customer exemptions from costs borne by non-CARE customers.

[37] CARE rates under 130 percent of baseline were frozen by AB 1X. Subsequently, through GRC Phase II settlements, a CARE Tier 3 rate was not initiated for PG&E until authorized by SB 695, and adopted by the Commission, effective November 1, 2011. For the decrease in CARE rates in real terms, *see* Application 13-04-012, PG&E's 2014 GRC Phase II, Exhibit PG&E-1, pp. 3-21 line 11 to 3-22 line 1; *see also* Application 12-02-020 (2012 RDW) PG&E, Quadrini, Exhibit PG&E-4, p. 2-6, lines 8 – 9, and TURN, Record Transcript of William Marcus, p. 304 lines 13 – 28 and PG&E, Quadrini, Exhibit PG&E-5, p. WP 2-10.

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TABLE 2-2
PACIFIC GAS AND ELECTRIC COMPANY
CARE PARTICIPANTS AND DISCOUNTS SINCE 2000

Line No.	Year	CARE Households	Total CARE Discounts
1	2000	200,000	$30,000,000
2	2001	400,000	$80,000,000
3	2002	560,000	$130,000,000
4	2003	650,000	$150,000,000
5	2004	730,000	$190,000,000
6	2005	800,000	$220,000,000
7	2006	940,000	$380,000,000
8	2007	970,000	$390,000,000
9	2008	950,000	$390,000,000
10	2009	1,020,000	$520,000,000
11	2010	1,230,000	$720,000,000
12	2011	1,300,000	$790,000,000
13	2012	1,280,000	$740,000,000

Table 2-2 illustrates how dramatically the CARE program and CARE discounts have grown over the past 13 years. The landmark development giving rise to this rapid increase in CARE discounts was the energy crisis of 2000-2001. Since the energy crisis, for over 12 years, nearly all of the rising costs have fallen on non-CARE customers in the highest residential electric rate tiers, causing upper tier rates to skyrocket and penalizing those who need to use higher-than-average amounts of energy. As a result, as Table 2-3 below shows, the rates in the highest two tiers are 186 and 210 percent, respectively, of the average price of residential service.

TABLE 2-3
PACIFIC GAS AND ELECTRIC COMPANY
COMPARISON OF CURRENT (E-1) ELECTRIC RATES TO THE RESIDENTIAL AVERAGE RATE

Line No.	Tier	5/1/2013 Rates	Percent of Average
1	Tier 1	$0.13230	79%
2	Tier 2	$0.15040	90%
3	Residential Average	$0.16772	100%
4	Tier 3	$0.31114	186%
5	Tier 4	$0.35114	210%

The important “takeaway” from these causes of the problems with the current residential electric rate structure is that no one single decision or law is responsible for

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the "broken" structure. Instead, multiple laws and decisions over more than a decade have cumulatively and often unintentionally shifted hundreds of millions of dollars of the cost of electricity service among different segments of residential electric customers for reasons largely unrelated to cost or equity. At its core, it is the legislative restrictions found in AB 1X and SB 695 that have caused and perpetuated the current broken residential rates, and tied the CPUC's hands in its ability to fix the inequities.

In this rulemaking proceeding, the CPUC has an opportunity to adopt coordinated public policies to begin to fix the broken structure and return residential electric rates to fair and cost-based levels on a consistent basis among all three investor-owned electric utilities in California. Even so, however, such policies cannot be implemented unless and until legislative reform are adopted that return full residential ratemaking flexibility and jurisdiction to the CPUC.

2.1.2. PG&E's Rate Design Reform Proposal Moves Residential Electric Rates Closer to Cost-of-Service Over a Transition Period by Streamlining the Rate Tiers and Narrowing the Differential Between the Lower Tier "Baseline Rate" and Upper Tier

PG&E's current non-CARE Tier 4 rate is 35.1 cents per kilowatt-hour (¢/kWh) and its Tier 3 non-CARE rate is now 31.1¢/kWh – both far above PG&E's average non-CARE Schedule E-1 residential rate of 19.4¢/kWh. On the other hand, PG&E's current subsidized lower-tier rates are well below the system average, with non-CARE households in Tier 1 at 13.2¢/kWh, and Tier 2 at 15.0¢/kWh. The baseline statute in the Public Utilities Code requires that there be an "appropriate gradual differential" in the residential rate tiers. The statute provides:

> *In establishing these [tiered] rates, the commission **shall avoid** excessive rate increases for residential customers and **shall establish** an*

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appropriate gradual differential between the rates for the respective blocks of usage. (PUC §739(d)(1), emphasis added.)

Today, contrary to the baseline statute, there is an 18.3¢/kWh gap between the top tier rate and the average rate paid by PG&E's residential customers. But under the two-tier structure in place during the decade prior to the energy crisis, the CPUC brought what it thought at the time was a too-high ratio of 1.39-to-1 down to its goal of 1.15-to-1.[38] Not only do today's disparate rates already run afoul of the baseline statute's requirement of an "appropriate gradual differential,"[39] but the imbalance is expected to continue and only get worse in future years unless the CPUC acts now.

These rate disparities bear no relation to PG&E's marginal costs or any other measure of cost of service. Rather they are the direct result of post-energy crisis legislative constraints on non-CARE and CARE Tier 1 and 2 rates that continue to force PG&E's upper tier non-CARE residential customers (currently 22 percent of residential sales) to bear most residential cost increases.

For the greater part of almost two decades, from the time it was adopted in 1982 until 2001, the baseline statute formed the basis for a two-tier residential rate structure, with a modest tier differential. During that period, the highest differential between PG&E's two electric rates tiers was just 5.1¢/kWh in 1988, dropping to 1.9¢/kWh in 1992, with further decreases until upper tier rates were set just 1.6¢/kWh above the lower tier baseline rate (for a 15 percent tier differential) from 1998 until the California

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[38] PG&E 1993 GRC Phase II D.93-06-087, 50 CPUC 2d 1, 30-34.

[39] Public Utilities Code Section 739(d)(1).

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Energy Crisis in 2001.[40] In the 12 years since then, PG&E has had as many as five tiers, and currently has the following four-tier structure:

Tier 1: usage between zero and 100 percent of Baseline;

Tier 2: usage between 100 and 130 of Baseline;

Tier 3: usage between 130 and 200 percent of Baseline; and

Tier 4: usage above 200 percent of Baseline.

Thus, as a result of legislative restrictions that largely tie the Commission's hands, PG&E's non-CARE residential rates since the energy crisis have gone from a two-tiered structure with just a 1.6 cents per kWh rate differential to a four-tier rate structure with a 21.9 cent difference between PG&E's highest and lowest rates. This steeply inclining structure has no basis in cost, is grossly inequitable to upper-tier users throughout PG&E's service area, and is the direct result of the post-energy crisis legislative constraints on lower-tier rates that continue to force PG&E non-CARE upper-tier sales to bear a disproportionate share of residential cost increases. This inequity is compounded by the fact that Tier 3 usage is considered a normal level of usage for many families, especially during the summer months with air conditioning needs, which means that average, moderate-income families are being charged more than 30 cents per kWh for electricity.

As shown in Figure 1 above, PG&E's non-CARE upper-tier rates today continue to be far above the average residential rate (shown as the dotted purple line in Figure 1). Consequently, upper-tier usage continues to subsidize lower-tier and CARE usage, where the rates are all below the class average rate. Table 2-4, below, shows how rates have changed in percentage terms since the energy crisis. Since 2001,

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[40] *See* Section 2.1.1, above.

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Tier 3 and 4 rates have increased by 240 and 270 percent, respectively, causing a huge gap between the Tier 2 and 3 rates. While the differences between the current Tier 1 and 2 rates, and the even larger differences between the non-CARE Tier 3 and 4 rates, might be fairly characterized as an "appropriate gradual differential," by no stretch of the imagination can the 16.1 cent per kWh chasm between PG&E's current Tier 2 and 3 rates be considered anything close to "gradual."

TABLE 2-4
PACIFIC GAS AND ELECTRIC COMPANY
2001 PRE-ENERGY CRISIS NON-CARE E-1 RATES VS. CURRENT E-1 RATES PER KWH

Line No.	Tier	January 2001 E-1 Rates(a)	May 2013 E-1 Rates	Percent Change 2001-2013
1	Tier 1	$0.11430	$0.13230	16%
2	Tier 2	0.12989	0.15040	16%
3	Tier 3	0.12989	0.31114	240%
4	Tier 4	0.12989	0.35114	270%

(a) Rates effective January 4, 2001.

In a similar fashion, Table 2-5 shows how the rates by tier have changed in real terms since the energy crisis. The second column shows January 2001 rates by tier in nominal terms, and the third column escalates those 2001 rates by inflation to show what they would be in 2013 dollars. In comparison, the fourth column shows the actual rates in 2013. As the fifth column shows, the Tier 1 and 2 rates have declined in real terms since the energy crisis – the result of years of being frozen, followed by just modest increases since the enactment of SB 695. But the Tier 3 and 4 rates have increased in real terms by very large amounts – 80 and 103 percent, respectively. Today, customers whose usage is in the upper tiers are clearly providing a considerable subsidy to those whose usage remains in the lower tiers.

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TABLE 2-5
PACIFIC GAS AND ELECTRIC COMPANY
JANUARY 2001 AND 2013 NON-CARE E-1 RATES: NOMINAL VS. REAL

Line No.	Tier	January 2001 Rates	2001 Rates in 2013 Dollars	May 2013 Rates	Percentage Real Rate Change
1	Tier 1	$0.11430	$0.15197	$0.13230	-13%
2	Tier 2	0.12983	0.17261	0.15040	-13%
3	Tier 3	0.12983	0.17261	0.31114	80%
4	Tier 4	0.12983	0.17261	0.35114	103%

Although the baseline statute does not specify what the minimum percentage differential should be, there is strong evidence from CPUC decisions between 1988 and 2001 that the CPUC viewed an "appropriate gradual differential" as being 15 percent, or a ratio of 1.15-to-1. The CPUC reduced the high tier differentials for the various utilities on an annual, phased basis between 1989 and 1995, to ameliorate bill volatility.[41] In keeping with this 15 percent differential, PG&E's immediate pre-energy crisis baseline (Tier 1) rate was set at the very modest discount of **just 5 percent below the average rate**, and its over-baseline rate (Tier 2, in a two-tier structure) was set at a modest premium of **just 9 percent above the average rate**, with the CPUC concluding that this total differential of about 15 percent sent an adequate conservation price signal.[42]

But, fast forwarding to May 1, 2013, the ratio of today's average Tier 3 over Tier 2 rate, is 2.07-to-1 – well over 1990 electric rate tier ratios that the CPUC found needed to be reduced (e.g., the CPUC declared in 1992 that SCE's tier ratio of 1.39-to-1 needed to be gradually reduced each year until it reached a 1.15-to-1 ratio by 1995.)[43]

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[41] *See* D.89-09-044, and D.90-06-020, 1992 Cal PUC LEXIS 472, *87-*91; 44 CPUC 2d 471; 135 P.U.R. 4th 17.

[42] *See* A.12-02-020 (PG&E's 2012 RDW), Quadrini, Exhibit (PG&E-2, p. 2-9, lines 9 – 11).

[43] D.92-06-020, 44 CPUC 2d 471, 506.

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Today, PG&E's current upper tier rates are higher in absolute terms than those in place for both SCE and SDG&E:

TABLE 2-6
PACIFIC GAS AND ELECTRIC COMPANY
COMPARISON OF STANDARD 2013 NON-CARE RATES BY TIER AND UTILITY(a)

Line No.	Tier	PG&E ($/kWh)	SC&E ($/kWh)	SDG&E ($/kWh)(b)
1	Tier 1	$0.132	$0.128	$0.148
2	Tier 2	0.150	0.160	0.171
3	Tier 3	0.311	0.271	0.265
4	Tier 4	0.351	0.311	0.285
5	Monthly fixed fee ($/month)	N/A	$0.91	N/A

(a) SCE's rates are based on 53 percent baseline quantities for basic customers, and 60 percent in the summer and 70 percent in the winter for all-electric customers. PG&E's and SDG&E's rates are based on 55 percent baseline quantities, except for 65 percent baseline quantities in the winter for all-electric customers.

(b) SDG&E's rates are a simple average of summer and winter rates.

To fix this serious problem, PG&E's Rate Design Reform Proposal reduces the number of residential rate tiers to two on its standard E-1 rate plan – the baseline rate and a single additional tier.[44] In addition, PG&E's Rate Design Reform Proposal returns PG&E's current upper tiered rates over a reasonable transition period closer to the historical 1.15-to-1 average differential previously approved by the CPUC. The fundamental driver of PG&E's Rate Design Reform Proposal is one of fairness: to make progress in reversing the inequity in the current above-cost, steeply inclining block rate design and the associated rate disparities between the lower and upper tier non-CARE rates. PG&E's Rate Design Reform Proposal will achieve this goal by moving rates closer to cost of service.

[44] Under PG&E's proposal, the Tier 1 rate would apply to usage between zero and the customer's baseline amount, and the Tier 2 rate would apply to all usage above the baseline amount. This represents a return to the tier definitions that were in effect prior to the Energy Crisis.

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2.1.3. PG&E's Rate Design Reform Proposal Provides Affordable Rates to CARE and Non-CARE Customers

PG&E's rate design reform proposal keeps the CARE rate discount by reforming the overall CARE program over time to set the level of the CARE rate discount more in line with levels that would be affordable to support basic electricity needs and taking into account the 20 percent level set just after the 2000-2001 energy crisis, versus today's actual 47 percent level.[45] At the same time, PG&E's Proposal aligns and targets the CARE discount to updated needs assessments of different segments of CARE eligible customers, including considering adjusting the level of the discount to different usage levels and other objective criteria.

SB 695 established that CARE rates can have no more than three tiers and that CARE rates may not exceed 80 percent of the corresponding non-CARE rates, excluding other costs from which CARE customers are exempt, such as the cost of the Department of Water Resources (DWR) Bond charge, the CARE surcharge and the cost of the California Solar Initiative.[46] SB 695 also purported to permit limited increases to CARE Tier 1 and Tier 2 rates under certain circumstances for the first time in nearly twenty years; however, since passage of SB 695, there have been no increases to Tier 1 and 2 CARE rates in 2010, 2011, 2012 or 2013 due to the lack of change in the index adopted in SB 695 governing increases to CARE rates.[47]

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[45] Prior to the energy crisis and for 11 years before, the low income rate discount had been 15 percent. By late 2001, following CPUC adoption of a 20 percent discount during the energy crisis, the provisions of Pub. Utils. Code Section 739.1(b)(5) established a target for the CARE discount of 20 percent.

[46] Pub. Utils. Code Section 739.1(b)(4), Stats 2009, Chapter 337, Section 4, Effective October 11, 2009.

[47] Pub. Utils. Code Section 739.1(b)(2) indexed the CARE Tier 1 and 2 increases to the annual percentage increase in benefits under the CalWORKS program as authorized by the Legislature each year. However, since SB 695 was passed in 2009, the CalWORKs index has been suspended. Thus, there has been no increase in CARE Tier 1 and 2 rates under Pub. Utils. Code Section 739.1(b)(2). *See* Application 12-02-020 (PG&E's 2012 RDW), TURN, Marcus, Record Transcript (RT). p. 309, lines 6 – 11) and DRA, Khourry, RT. p. 376, lines 5 – 26.

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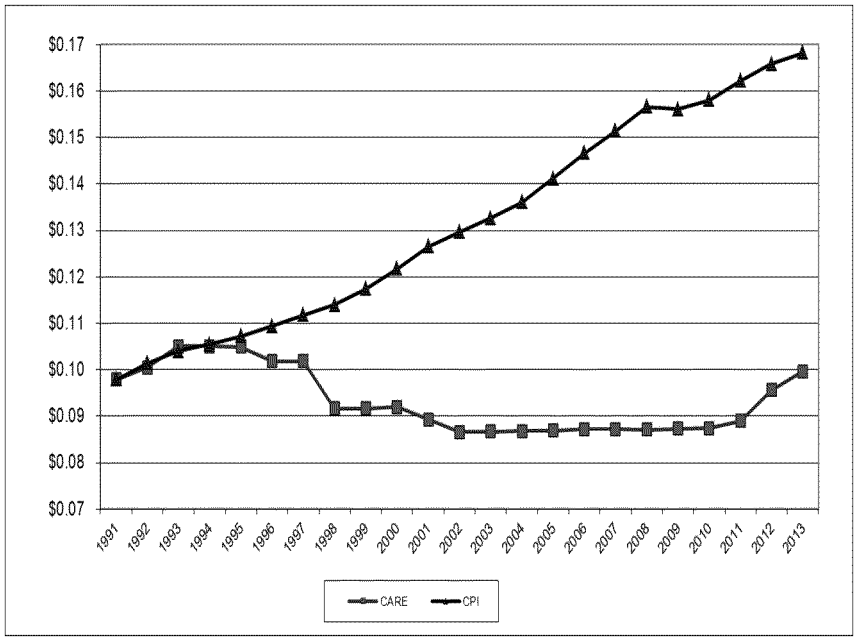
The inability to increase CARE Tier 1 and 2 rates has driven a widening gap between CARE and non-CARE rates – thus increasing the CARE discount well beyond the 20 percent level intended to the current level of 47 percent for PG&E customers. Even though a CARE Tier 3 rate was added in November, 2011, and was increased 1.5 cents/kWh in January, 2013, the disparity between lower tier rates already had increased substantially when compared to the CARE discount that was in place in 2001. As a result, as Figure 2-1 indicates below, the average CARE rate (including Tier 3) is now 41 percent lower than it was in 1991 after adjusting for inflation. This widening gap between CARE and non-CARE rates has put further unsustainable pressure on upper tier non-CARE rates to support the increasing discount.

FIGURE 2-1
PACIFIC GAS AND ELECTRIC COMPANY
AVERAGE CARE (EL-1) RATE VS. CPI
1991-2013



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Statewide, nearly 5 million customers of PG&E, SCE, SDG&E, and SoCal Gas are receiving CARE assistance,[48] and the combined overall costs of the CARE program have ballooned to nearly ten times pre-energy crisis levels, from $140 million in 2000 to approximately $1.3 billion annually for the 2012-2013 program period.[49] The growth in the CARE program combined with the current tiered structure of residential electric rates has caused the actual level of the CARE rate discount to significantly exceed the intended 20 percent discount. For PG&E, the current average CARE rate discount is 47 percent.

Moreover, for most of the post-energy crisis period PG&E – unlike the other two California investor-owned utilities – did not have a CARE Tier 3 rate. PG&E was only able to implement a CARE Tier 3 rate for the first time in November 2011, and the level of PG&E's current CARE Tier 3 rate is significantly below the similar rates of SCE and SDG&E.[50] Table 2-7 compares PG&E's CARE rates to those of the other two IOUs. All of PG&E's CARE rates remain substantially below those of the other two IOUs.

TABLE 2-7
PACIFIC GAS AND ELECTRIC COMPANY
COMPARISON OF STANDARD CARE RATES BY TIER AND UTILITY(a)

Line No.	Tier	PG&E 2013 ($/kWh)	SCE 2013 ($/kWh)	SDG&E 2013 ($/kWh)
1	Tier 1	$0.083	$0.085	$0.099
2	Tier 2	0.096	0.107	0.116
3	Tier 3	0.140	0.207	0.170
4	Monthly fixed fee ($/month)	N/A	0.70	N/A

[48] D.12-08-044, p. 22 (as of December, 2011).

[49] Compare, D.12-08-044, Ordering Paragraph 1, p. 369, to D.00-02-026, Attachment 4, July 6, 2000.

[50] PG&E recently has presented a proposal in its 2014 GRC Phase 2 case to fix this CARE Tier 3 rate disparity. No legislative changes are needed to make this change, and it can and should be addressed in that proceeding.

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PG&E's Rate Design Reform Proposal is consistent with various reforms to CARE customer eligibility, enrollments, and income verification processes begun by the CPUC in 2012.[51] Assigned Commissioner Ferron recognized the need for evaluation of the CARE program in his concurring opinion to the CPUC's 2012 CARE decision:

> *Based on my further review of the CARE subsidy, I seriously question whether we are targeting the right overall objective. … We need to balance the societal benefits of maximizing the number of eligible participants against the excessive costs of having too many ineligible participants. I think that we need to more closely examine this going forward.* ***The truth is, we just do not know if the benefits of pushing for wider enrollment justify the growing costs associated with this subsidy. And we should know this.***
>
> *I am particularly concerned that we monitor and effectively use the data that we are ordering the IOUs to track in this Decision. The Decision provides three opportunities for us to ensure that we are being good stewards of the public dollar: 1) the Initial Enrollment Stage, which requires limited documentation of the customer's eligibility, or in the case of so-called self-certified participants, no documentation at all; 2) the Re-Certification Stage, which requires the customer to document - or in the case of self-certified customers, to attest to - their continued eligibility; and 3) the Post-Enrollment Verification process, by which the IOUs monitor changes in eligibility between verification cycles and obtain data for use in improving the accuracy of customer enrollments.*
>
> ***
>
> *It is my hope that we will have a better understanding of the statistical profile of both eligible and non-eligible customers relative to the entire population, which will inform future decisions in time for the next application cycle. I am particularly concerned that we understand the impact of allowing customers to enroll and to continue to participate by means of self-certification alone. I am hopeful that through a robust and scientific verification process, we will have high confidence that our programs are readily accessible to those who are truly eligible for assistance, and yet have adequate safeguards against ineligible participation.*[52]

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[51] *Decision on Large Investor-Owned Utilities' 2012- 2014 Energy Savings Assistance (ESA)(Formerly Referred to as Low Income Energy Efficiency or LIEE) and California Alternate Rates for Energy (CARE) Applications*, Decision 12-08-044, August 23, 2012.

[52] D.12-08-044, *Concurrence of Commissioner Mark J. Ferron*, pp. 1-2.

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In addition, the CPUC noted reports from PG&E that when it performs post-enrollment verification of CARE customer eligibility, including income verification, approximately 61 percent of its CARE customers are de-enrolled for a variety of reasons, including income ineligibility.[53] As a result, the CPUC's 2012 decision approving CARE and ESAP budgets for the 2012-2014 program period adopted changes that restrict high usage customers' ability to remain on CARE assistance without undertaking energy efficiency measures.[54] In addition, the CPUC began some limited studies of methodologies to tighten the post-enrollment income verification processes used by the utilities.[55]

PG&E's proposed changes to the CARE discount would be coordinated with the CPUC's overall CARE reforms, in order to ensure that CARE rate discounts are targeted more effectively to help low income customers pay their bills and manage their energy use. The CPUC is updating data from 2007 on energy burden (the percentage of household income needed to cover electric and natural gas bills) by income strata and geographic area in California.[56] The last such study (by KEMA) found that PG&E's low income customers on average pay 4% of their income for their total energy bill (electric plus gas).[57] This breaks down as 2.5 percent for electric and 1.4 percent for natural gas. However, as discussed above, CARE customers have long benefitted from CARE rates frozen at extremely low levels, so that the inflation-adjusted level of CARE assistance to low income customers is actually 32 percent higher than the level adopted

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[53] D.12-08-044, p. 203.

[54] D.12-08-044, Ordering Paragraph 101, pp. 400-402.

[55] D.12-08-044, Ordering Paragraphs 89-97, pp. 395-399.

[56] D.12-08-044, Ordering Paragraphs 107-109, pp. 404-406.

[57] *See* "Final Report on Phase 2 Low Income Needs Assessment" prepared for the CPUC by KEMA, Inc., September 7, 2007, page 5-9 and page 5-11 showing that for customers who take both gas and electric service from PG&E, on average, their natural gas-only energy burden was 1.4 percent.

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following the KEMA study in 2007, having increased from about $400 per customer in 2007 to about $580 in 2012.[58]

Accordingly, PG&E proposes to make downward adjustments to the level of the CARE discount over a reasonable period of time. PG&E also is open to considering adjusting the actual discount to different segments of eligible customers based on various levels of usage and other objective criteria as well as incorporating the results of updated needs assessments. Coupled with anticipated reforms of the CARE program itself, the level of CARE assistance to PG&E low income customers should be sufficient to ensure that PG&E electric bills are reasonably affordable to needy customers. PG&E's Rate Design Reform Proposal is intended to ensure CARE bill impacts that are modest in dollar terms, and reasonable given the need to address high upper tier bills.

When Lifeline and Baseline rates were first implemented, there was no separate CARE program. That is, the generally available lower Tier 1 or baseline rate was intended to ensure that electric service was affordable for low-income customers. Today, with the longstanding implementation of a special program for CARE customers, combined with the relatively low level on non-CARE Tier 1 and Tier 2 rates, this brings into question the need to even have an inverted tier structure for non-low-income customers for affordability purposes. A substantial proportion – approximately 57 percent – of PG&E's non-CARE upper tier customers, who have for so long been affected by higher tier rates, are indeed moderate or even lower income customers.[59] Affordability is a significant issue for these customers as well.

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[58] The average assistance per customer is calculated from Table 2-2.

[59] Based on 2009 RASS sample data. High tier customers are those that have tier-3 or above usage. An annual income in the range of $60K to $100K is defined as moderate income, and income below $60K is defined as low income.

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PG&E's demographic analyses indicate that there is not a strong correlation between income and usage, and that thousands of PG&E's higher-use customers are moderate or lower income.[60] This is intuitively true based on the living characteristics of PG&E's large service territory in northern and central California, with a variety of electricity consumption levels based on differences in family size, including families with children and elderly members and differences in housing vintage.

On the one hand, there are thousands of low and moderate income families living in the Central Valley and outer suburbs of the San Francisco Bay area whose need for air conditioning in the summer months pushes their electricity demand into the above-cost, higher tiers. On the other hand, there are higher income single people who are earning over $100,000 a year in places like San Francisco and the coastal areas where cooler weather allows them to keep their electricity usage in the lower tiers, substantially below the cost of service.

As TURN has pointed out, under these demographic characteristics, "you end up getting into issues of correlation of high usage with housing stock of larger square feet and larger family size."[61] There is "somewhat more dispersion" of incomes among those with upper tier usage, with TURN's data showing a group of 18 percent to 32 percent of customers with usage in Tier 4 having moderate incomes, depending on climate zone.[62]

Demographic data on PG&E's customers demonstrate that steeply inclining upper tier rates hurt many moderate income families. Contrary to some previous

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60 *See* Figure 2-5, **b**elow.

61 TURN, Marcus, TR. p. 326, line 25, p. 327, line 19 and p. 329, lines 13-14, in PG&E's 2012 Rate Design Window Application 12-02-020 (February 29, 2012).

62 *Id.*

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assumptions, customers with upper tier usage in fact are *not* synonymous with being rich. While there is a positive correlation between income and usage, that correlation is weak. Consequently, steeply tiered rates harm many lower and moderate income families and, conversely, reward many high income families. Of the 865,000 non-CARE lower income households with annual incomes between $30,000 and $60,000, over one-third have high usage and pay an average annual rate that exceeds the residential class average.[63] Similarly, of the 1 million non-CARE moderate income households in the $60,000 to $100,000 annual income range, over half have high usage and pay an average annual rate that exceeds the residential class average.[64] In contrast, over 40 percent of the nearly 1.1 million higher income households with incomes exceeding $100,000 per year have low usage and pay an annual average rate below the residential class average.[65]

PG&E understands that the theory behind tiered rates has included the concept that lower rates for lower usage customers will provide necessary financial assistance to low-income customers while encouraging high income, high users to conserve. However well-intentioned this theory, it is not supported by the facts, and the current tiered rate structure actually penalizes many of the same moderate and low income customers that policymakers intend to help. Furthermore, direct, transparent discounts provided by CARE rates to income-eligible customers are a more effective means of targeting rate discounts for low income customers than reduced rates for a defined level of usage available without regard to need.

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[63] Based on RASS 2009 sample and 2009 usage for PG&E customers only. High usage is counted as 1/12 for each month with tier 3 or above usage for each customer.

[64] *Id.*

[65] *Id.*

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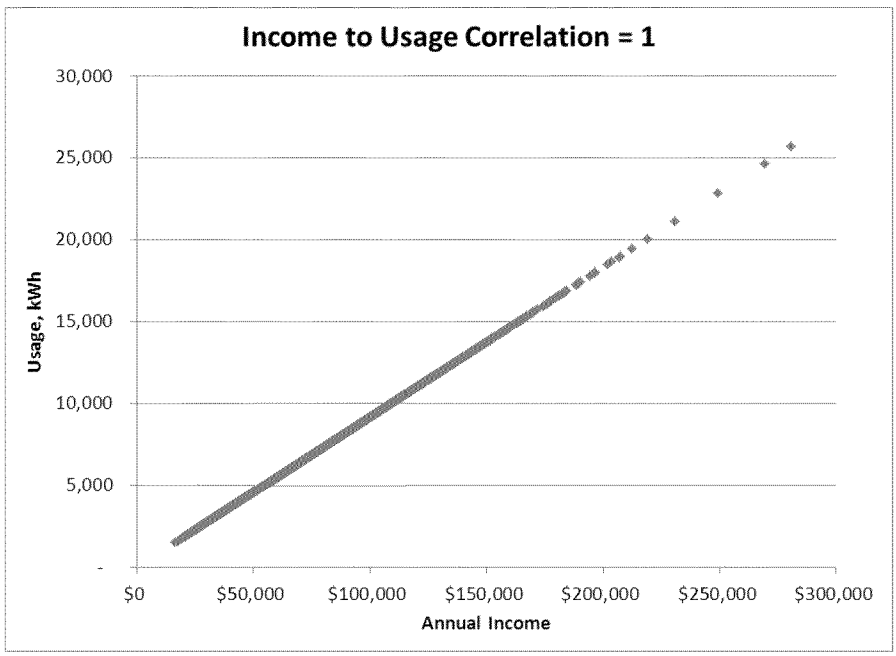
Figure 2-2, below, illustrates what a perfect positive correlation between income and residential electric usage would look like in PG&E's service territory. At the other end of the spectrum, Figure 2-3 shows an example of zero correlation between income and usage. Figure 2-4 shows the actual correlation between income and usage from PG&E's 2009 Residential Appliance Survey Saturation (RASS) data.[66] The estimated correlation is relatively weak, at just 0.33. As the scatter plots show, Figure 2-4 looks similar to Figure 2-3.

FIGURE 2-2
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATION OF PERFECT POSITIVE CORRELATION BETWEEN INCOME AND USAGE



[66] *See* A.13-04-012 (PG&E's 2014 GRC Phase II), Quadrini, Exhibit PG&E-1, p. 3-113 line 26 to p. 3-15.

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FIGURE 2-3
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATION OF ZERO CORRELATION BETWEEN INCOME AND USAGE

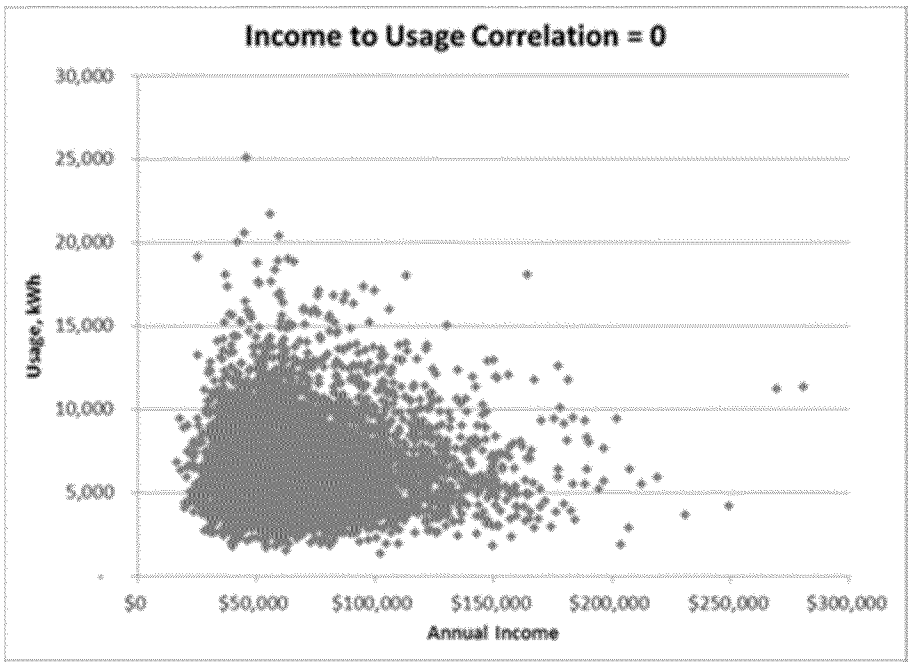

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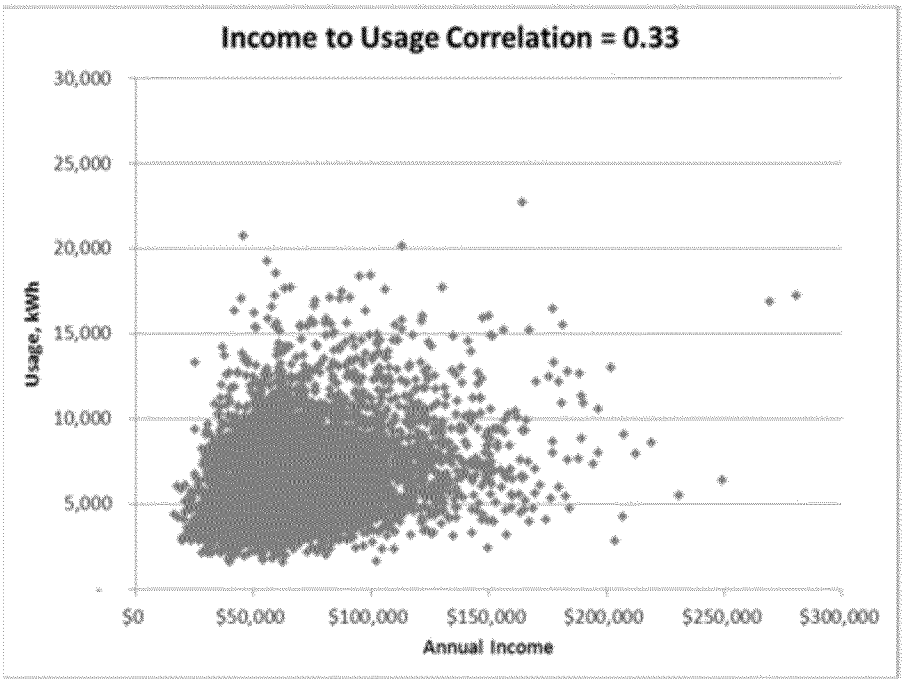
FIGURE 2-4
PACIFIC GAS AND ELECTRIC COMPANY
ACTUAL INCOME TO USAGE CORRELATION
2009 RASS DATA[67]



Taking into account these demographic differences, PG&E Rate Design Reform Proposal is structured so that any bill increases for non-CARE customers are modest in dollar terms in order to achieve meaningful decreases in upper tier rates. On a percentage of bill basis, the bill increases also are more modest when compared to the nominal percentage rate changes. Such modest bill increases are a reasonable tradeoff for making additional, though slight, progress on reining in exorbitantly high upper tier rates. These modest bill increases for the lower tier non-CARE users who largely have been protected from any significant rate increases for the last twenty years, are necessary to lift the burden on upper tier users, thousands of whom are located in inland parts of PG&E's service area where air conditioning is essential for low or moderate income working families. Moreover, because sales are distributed more

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67 The 0.33 correlation was estimated from the RASS 2009 sample. The scatter plot shown is based on that estimated correlation for illustrative purpose; the actual data is not shown in this plot.

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heavily in the lower two tiers than the upper tiers, *it is possible to decrease the upper tier rates* (and, consequently, the bills of upper tier users) *significantly with only modest bill increases for those consuming in the lower tiers at this time*.

PG&E is cognizant that disabled and low-income customers in its service area are struggling economically. But the problem of income insufficiency cannot be addressed in any meaningful way by freezing electric rates for nearly two decades at below-cost levels. Needy families do merit greater assistance, but electric rates are not a good tool for doing so. More direct, targeted assistance is a more appropriate and efficient way to deal with the societal and humanitarian issue of poverty. PG&E's Rate Design Reform Proposal is intended to phase-in changes in CARE rates that do not significantly increase the energy burden of needy customers, while improving the efficiency of the program itself.

Against this backdrop on energy burden, PG&E's Rate Design Reform Proposal is structured to allow the CPUC to continue to make progress toward relieving current rate inequities that built up over many years, especially since doing so is likely to result in a reasonably affordable average bill increase for a typical usage CARE customer. Still another way to assess affordability is on a statewide basis, and indisputably both SCE and SDG&E have higher CARE rates paid by these same income groups. For example, Table 2-7 shows that PG&E's CARE Tier 3 rate of 14.0¢/kWh is significantly lower than SDG&E's current rate of 17.0¢/kWh, and even farther below SCE's rate of 20.7¢/kWh. Even though the Southern California utilities' CARE Tier 3 rates are well above PG&E's, there is no evidence that their rates have created any huge affordability problem.

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PG&E's Rate Design Reform Proposal maintains both the CARE rate discount and baseline rates, while moving both rates over time back to the levels intended by the Legislature and CPUC prior to the 2000-2001 energy crisis. In so doing, PG&E will take into account both the CPUC's ongoing reforms to the CARE program and its historical determination of basic electricity needs under the baseline statute. For example, while SMUD recently proposed a 38 percent discount for its version of CARE customers in 2014, the maximum dollar discount allowed is capped at $52 per month. The utilization of such a maximum dollar per month cap (albeit not necessarily set at $52 per month) may represent a reasoned trade-off between providing relief to those requiring financial assistance, and avoiding an excessive impact on non-CARE customers who must fund those discounts.

This coordinated consideration of both the CARE and baseline rate assistance programs is essential, because the definition of "affordability" of electricity in California applies to both. As the baseline statute and the history of its implementation demonstrates, "affordability" is defined as assuring a discounted electricity rate for a *limited* quantity of electricity to serve basic needs (not *all* electricity usage), while at the same time assuring that the difference between the discounted rate and higher usage electric rates is maintained at a *gradual* differentiation.[68] Likewise, the CARE statute makes clear that CARE assistance can be provided as a rate discount or through other forms of assistance such as energy efficiency measures, and that the level of CARE assistance should assist eligible low income customers to pay their energy bills, but that the particular level of assistance is left to the determination of the CPUC as long as it

[68] Public Utilities Code Section 739(b),(d).

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provides an equivalent discount of at least 20 percent compared to non-CARE electricity bills.[69]

PG&E's Rate Design Reform Proposal is structured to make steady progress toward addressing the gross inequities in the residential rate structure, while still providing very substantial assistance to mitigate the energy burden of disabled and low-income customers on the CARE rate schedule.

2.1.4. PG&E's Rate Design Reform Proposal Fairly Allocates Fixed Costs of Residential Electricity Service to Customers Through a Monthly Fixed Fee

A monthly fixed fee to recover fixed costs of utility service is a key tool for fulfilling the very important ratemaking principle of cost causation. In the context of residential rate design, there are a number of categories of costs that do not vary with the volumes of kWh consumed by customers. First, there are customer access and revenue cycle service costs that, for non-residential customers, are generally collected via monthly customer charges. These include the costs of connecting a customer to the grid and maintaining that connection and service to the account—including metering, preparing and sending bills, processing payments, providing service center resources, and other grid-related costs. Second, there are capacity-related costs associated with generation, transmission, and distribution assets. These generation and grid costs are driven by customers' coincident and non-coincident demands on the PG&E system and for non-residential customers are generally collected via demand charges. Finally, PG&E's revenue requirements include the costs of various programs such as those that support

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[69] Public Utilities Code Sections 382(b) ("Energy expenditure may be reduced through the establishment of different rates for low-income ratepayers, different levels of rate assistance, and energy efficiency programs"), 382(c) ("Nothing in this section shall be construed to prohibit electric and gas providers from offering any special rate or program for low-income ratepayers that is not specifically required in this section"), 739.1(b)(1).

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incentives for energy efficiency or rate reductions for low-income customers under CARE. These program costs do not change according to changes in consumption by non-CARE customers. For a customer class like residential, though, where demand charges are not currently employed, it may be more appropriate to collect these types of costs through a fixed monthly charge rather than through volumetric charges, since the costs are incurred by the utility on behalf of each individual customer and do not change based on the volume of electricity that the customer consumes.

In situations where certain costs are fixed and cannot be avoided, setting a rate to recover these costs through monthly fixed fees, rather than through volumetric rates, appropriately reflects cost causation, and supports more equitable recovery of PG&E's fixed costs among customers. These fixed costs should be paid by all customers, rather than shifted unfairly from some onto others.

Consistent with this fair and efficient cost-causation principle, the CPUC has approved fixed fees for every one of PG&E's *nonresidential* rate schedules—in recognition that this is an appropriate way to collect fixed costs.[70] Because PG&E incurs these same fixed costs to serve residential customers, a monthly fixed fee that similarly does not vary with consumption would be appropriate for these customers as well.

In addition, a monthly fixed fee allows for a reduction in higher tiered volumetric rates, providing further movement of overall residential electric rates towards cost. It will help minimize the inequity in the current inclining block rate design and the associated rate disparities between the lower and higher tier non-CARE rates and between CARE and non-CARE rates. Adoption of a monthly fixed fee will contribute to

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[70] *See* A.10-03-014, PG&E's 2011 GRC Phase 2, Keane, Exhibit PG&E-2, p. 1-11 to 1-12.

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reversing these disparities. A modest monthly fixed fee would allow a significant reduction in PG&E's Tier 3 and 4 rates. In that respect, it is a key component of PG&E's total Residential Rate Design Proposal.

A monthly fixed fee also is more cost-based than alternatives such as the existing minimum bill amount. Fixed costs are incurred to serve all customers. Consistent with this cost-causation, the monthly fixed fee applies to all customers. In contrast, a minimum bill amount is applied only to a very small percentage of customers with little or no usage in a given month. For example, for the current minimum bill on PG&E residential rate Schedule E-1 to apply, a customer would have to use just 34 kWh or less in a month (since 34 kWh times 13.2 cents equals $4.50). Only about 3 percent of PG&E's total E-1 customers have usage this low in any given month.

The monthly fixed fee also is more equitable because it charges all customers on a rate schedule the same amount to cover a portion of PG&E's fixed costs. For example, a $3.00 customer charge on PG&E's rate schedule E-1 would apply to each and every customer's monthly bill, regardless of the customer's usage. This is appropriate since the fee is collecting a portion of the fixed costs that do not vary with usage. In contrast, the minimum bill amount artificially "bumps up" different low usage customers' bills by different amounts. In the example above, a customer with zero usage has its bill increased by $4.50 for a total bill of $4.50, while a customer using 10 kWh would have its bill increased by just $3.18 (to get to the same $4.50 total bill). Put another way, both customers pay the same total bill of $4.50 even though the second one (under the minimum bill) should pay more since it is getting the benefit of 10 additional kWh.

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Finally, it should be noted that one of the fundamental principles of cost accounting and rate design, generally, is to recover fixed costs through a fixed charge, and variable costs through a variable charge. Even if a high minimum bill were established, it would follow that in the absence of a fixed customer charge, the regular variable charge per kWh would inappropriately have to "roll in" recovery of fixed costs, as occurs today. In effect, this establishes a portion of the total variable charge per kWh that on a class average basis must be set to recover those fixed costs. As a consequence, customers with usage higher than the class average will "overpay" for those fixed costs, and customers with usage below the class average will "underpay" for those fixed costs.

Surveys of other utilities establish that including fixed charges such as monthly fixed fees in residential rates are a wide-spread, well-accepted practice. Although PG&E's Rate Design Reform Proposal begins with a modest monthly service fee at a fraction of the actual fixed costs of service, implementation of the monthly service fee over time will make PG&E's residential rates more consistent with those of other utilities. Of 22 top utilities nationwide, 21 have monthly charges that exceed $3.00 a month. Among California utilities, SCE has a monthly service fee, as do eight out of 16 municipal utilities operating in northern and central California.[71] For example,

[71] Sacramento Municipal Utility District (SMUD), Silicon Valley Power, and Redding Electric Utility all have customer service fees, ranging from $2.50 per month to $12.50 per month. At the CPUC's November 14, 2012 Energy Policy Conference on Energy Rate Design, Scott Martin of SMUD publicly stated that SMUD has been collapsing tiers since the year 2000 and recently eliminated its third tier, and that it is implementing increases to its fixed monthly customer charge by $2 a year over the next five years, ramping up from its current $12 monthly service fee to a $20 monthly service fee, with corresponding decreases in energy costs. In addition, SMUD's more recent plan includes moving to non-tiered residential flat rates during the 2014 to 2017 period.

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SMUD charges $12.00 per month for non-CARE customers and $3.50 per month for CARE customers.[72]

Setting a monthly service fee to recover at least a portion of the fixed costs of serving residential customers (which costs do not vary with usage) on a fixed basis appropriately reflects cost causation, and supports more equitable recovery of PG&E's fixed costs among customers. These costs should be paid by all customers, as opposed to avoided by some and thus shifted to and paid by others.

2.1.5. PG&E's Rate Design Reform Proposal Provides Customers with Simpler, More Understandable Rate Options

PG&E's Rate Design Reform Proposal leverages customer research conducted over the past several years that has helped define what residential customers believe would be understandable and simple in regard to electric rate plan options. Customer input has made it clear that "understandable" and "simple" are two closely related characteristics of a rate plan. One focus group participant summed it up very well:

> *"It is obviously important that I can understand how my rate plan and my energy use behavior translates to my bill, however, I don't want to have to spend much time or effort figuring it out or have to work too hard to make the changes."*[73]

At first, it may seem that it is only important that a customer is capable of understanding their rate structure and how that structure affects their bill. However, from a customer engagement perspective, rate plan options need to be easy to understand as well as to act upon. Residential rate design in California has strived for

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[72] In addition to monthly fixed charge that is lower than on its standard rate, SMUD's low-income rate also features a 35 percent discount on Tier 1 usage and a smaller, 30 percent, discount on Tier 2 usage. However, once a customer's monthly usage reaches 600 kWh, there is no discount on additional kWh consumed. *See* SMUD's Residential and General Service Energy Assistance Program tariff (https://www.smud.org/en/business/customer-service/rates-requirements-interconnection/documents/1-EAPR.pdf).

[73] PG&E Residential Rates Language Focus Groups, King Brown Partners, January, 2013.

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years to encourage energy conservation and peak load shifting. However, in order for customers to demonstrate these behaviors, their rate plan options have to not only be understandable, but be easy to understand and allow bill savings from easy changes in behavior.

Simplifying the standard rate from four tiers to two tiers and completely eliminating tiers in optional TOU rates will increase customer ability to understand how energy use behavior affects bills. The recently completed April, 2013, joint utility customer survey showed that customers on the current four-tiered rate have a very poor understanding of how their energy use behavior impacts their bills.[74] Results also show that customers prefer simpler rate structures, such as flat, two-tier and two-period TOU rather than structures with more tiers, more TOU periods and worse, more periods combined with more tiers.

PG&E's Proposal incorporates these customer perspectives by simplifying the standard rate from four tiers to two, and introducing a meaningful opt-in TOU rate without tiers. These new rate plans will eventually completely replace the current four-tier standard rate and the optional four-tiered TOU rate.

2.2. PG&E's Electric Rate Design Reform Proposal is Based on Marginal Cost and Cost-Causation Principles

The CPUC has long stated that a fundamental principle of electric rate design is to charge customers rates that reflect utilities' cost of service.[75] More recently, the CPUC reaffirmed this principle in this proceeding:

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[74] "RROIR Customer Survey Findings," Hiner and Partners Inc., April 16, 2013.

[75] *See, e.g.*, D.92549, 5 CPUC 2d 39, 108; D.93-06-087, 50 CPUC 2d 1; D.96-04-050, 65 CPUC 2d 362, 383-385.

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Importantly, D.08-07-045 adopted a set of guiding principles for the Commission and utilities to utilize in designing dynamic rates. These principles are:

1. Rates should be based on marginal cost;

2. Rates should be based on cost-causation principles;

3. Rates should encourage conservation and reduce peak demand;

4. Rates should provide stability, simplicity and customer choice; and

5. Rates should encourage economically efficient decision-making.

Even though the decision did not explicitly state that equity is a guiding principle, the decision did note "that rates based on marginal cost will simultaneously achieve economic efficiency and equity by ensuring that customers' rates are commensurate with the costs they cause. Marginal cost-based rates should effectively eliminate cross subsidies between customers since a customer who is less expensive to serve would pay less, and vice-versa for a customer who is expensive to serve.[76]

As the consumer group TURN also has stated, the policy underpinnings for these principles are that an "additional amount of economic efficiency arises" from a cost-based revenue allocation and rate design.[77] Not only is it fair and equitable for customers' rates to align as closely as possible with the cost to provide them with electric service, but doing so sends customers a price signal that helps them make more efficient choices regarding their energy usage. Note, however, that having more "cost-based" rates does not preclude the limited use of subsidies to internalize "social" or other "external" costs in rates, as long as those "social" costs are clearly and transparently communicated to customers, so that customers know precisely what they are paying for.

By transitioning residential electric rates closer to average and marginal cost of service over time, PG&E's Rate Design Reform Proposal complies with the CPUC principle that rates should be based on marginal cost and cost-causation principles.

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[76] R.12-06-013, pp. 10-11.

[77] *See* A.12-02-020 (PG&E's 2012 RDW), TURN, Marcus, Record Transcript, p. 318, lines 8-17.

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Although the calculation of marginal costs will vary from rate case to rate case, no longer will PG&E's Residential Rate Design include rates for moderate- and higher-usage that exceed those actual costs by 100 to 200 percent, as they have for most of the last decade. Nor will rates for low usage and CARE customers fall significantly below their actual costs. Instead, CARE and baseline rates will be returned to their original objectives of helping low income customers pay their energy bills, and ensuring that all residential customers regardless of income pay a reasonable rate for basic electricity needs.

None of this will happen overnight, and PG&E intends to propose transitions for both CARE and non-CARE baseline rates that fully take into account that affordability of a basic quantity of electricity for essential residential customer needs is a fundamental element of California ratemaking. But "affordability" itself must take into account the fundamental fairness and equity of cost-of-service ratemaking. Under cost-of-service ratemaking, it is not fundamentally fair for one set of residential ratepayers to pay a rate that is higher than their cost of service in order to subsidize the electricity consumption of other ratepayers at below their cost of service – that is more generally the function of the elected Legislature through the broader based, more transparent system of taxation for the public good. Residential rate design is just not a good policy tool for addressing income-based affordability issues. In more colloquial terms, "fairness" and "equity" in public utility ratemaking mean that customers "pay only for what they get" and "get only what they pay for." Certainly, neither the CPUC nor public utilities under its jurisdiction have designed electric rates to business, agricultural and governmental customers on an "inclining block" tiered structure that punishes them with above-cost rates at higher

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usage levels. The same cost of service principle applies to residential electric rates as well.

At a time when California's energy and environmental policies are requiring that all public utility customers pay their fair share of the costs of environmental externalities, such as reducing greenhouse gas emissions through AB 32's "cap and trade" program and reducing overall environmental emissions through the Renewable Portfolio Standard, PG&E's Rate Design Reform Proposal will fairly and equitably spread these costs based on the rate design principle of cost causation and marginal cost.

2.3. PG&E's Electric Rate Design Reform Proposal Encourages Conservation, Energy Efficiency, and Reduction of Both Coincident and Non-Coincident Peak Demand

PG&E's Rate Design Reform Proposal will encourage greater energy conservation and energy efficiency, as well as reductions in both coincident and non-coincident peak demand, contrary to the "conventional wisdom" about the effects of inclining block rates and customer charges.[78]

Proponents of steeply inclining tiered rates often tout their ability to encourage conservation by providing very high price signals in the upper tiers. While this may be the conventional wisdom, one cannot just focus on the rates in the upper tiers. The fact is that tiered rates also provide very *low* price signals in the lower tiers where the vast majority of the usage occurs (slightly more than two-thirds, for PG&E). So, compared to a flat rate structure, inclining block rates reduce usage in the upper tiers but increase usage in the lower tiers. It is an empirical question which of these two effects dominates the other, and thus whether inclining block rates really reduce overall usage.

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[78] In other customer sectors, these concerns do not seem to be apparent. None of PG&E's non-residential rates are tiered, and all of them have monthly fixed fees.

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So PG&E's Proposal here to move to a flatter residential rate structure – one with just two tiers instead of four, and with a relatively modest differential between the two rates – is not necessarily "anti-conservation" as the conventional wisdom might suggest and may, in fact, do more to encourage *overall* conservation in the residential class.

There is a similar misconception about the effects of a monthly fixed fee / customer charge. Since the introduction of a customer charge will reduce the level of volumetric rates (since the overall revenue to be collected is unchanged), the conventional wisdom suggests that this will reduce customers' incentives to conserve. But this theory assumes that residential customers respond to marginal prices (i.e., the price in the tier in which they are currently consuming) when making decisions about whether to consume an additional kWh. Recent research by Ito and Borenstein at the University of California, though, has shown this assumption does not seem to hold true in practice.[79] Rather, the research strongly suggests that customers respond to average rates rather than marginal rates. The addition of a customer charge will increase the average rate paid by customers in the lower tiers and decrease the average rates in the upper tiers.[80] So, once again, while upper tier consuming households will have a reduced incentive to conserve, lower tier consuming households

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[79] Koichiro Ito, "Do Consumers Respond to Marginal or Average Price? Evidence from Nonlinear Electricity Pricing" (Revised October 2012), Energy Institute at Haas, http://ei.haas.berkeley.edu/pdf/working_papers/WP210.pdf.

[80] The reduction in the average rate is due to PG&E's proposal to use the additional revenues from the customer charge primarily to reduce upper-tier rates. For households consuming in the upper tiers, the bill-reducing effect of these rate reductions will more than offset the bill-increasing effect of the customer charge. For households consuming in the lower tiers, though, the bill-increasing effect of the customer charge will dominate, resulting in higher bills and average rates.

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will have an increased incentive, and it is an empirical issue which of these effects dominates the other.[81]

There are two other aspects of PG&E's Proposal besides flattening the tier structure and introducing a customer charge. First, PG&E is proposing a reduction in the CARE discount over time. Since CARE rates have declined in real terms over the last two decades, there has been a reduction in the incentive for CARE households to conserve. PG&E's Proposal will begin to provide a conservation signal that has long been absent for these households. Second, PG&E is proposing to transition to an optional non-tiered TOU rate option. TOU rates are generally focused on providing an incentive for customers to shift their loads from higher-priced on-peak periods to lower-priced off-peak periods, and not necessarily on reducing overall usage. But even if usage does not increase overall, an environmental benefit is obtained from being able to reduce power production and purchases in the on-peak periods where less efficient generators are being used and increase production and purchases in the off-peak periods where generation is more efficient.

Given the preponderance of sales in the lower tiers (and to CARE households) compared to the upper tiers, the pro-conservation effects of PG&E's Proposal to raise average rates in the lower tiers (and to CARE households) and to lower them in the upper tiers might well be expected to reduce overall residential usage, or at least leave it at about the same level. In Chapter 4, PG&E describes its work estimating the effect of its rate proposals in their entirety on overall residential usage. As described there,

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[81] With tiered rate structures, average rates vary with a customer's usage, rising slowly with each additional kWh assumed (and approaching the upper tier rate asymptotically as usage goes to infinity). In contrast, with a flat rate design the average rate is the same regardless of the amount of kWh consumed. So the same effect is seen when evaluating PG&E's Proposal to flattening the tiered rate structure – lower tier consuming households will have a greater incentive to conserve, while higher tier consuming ones will have a smaller incentive to do so.

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these empirical results show that PG&E's Proposal will result in modest reductions in overall residential usage, assuming reasonable estimates of customers' price elasticities of demand.

In addition, PG&E's simpler, more understandable non-tiered TOU rate design will open up new opportunities and new incentives for all of PG&E's residential customers to choose new electric rate plans that encourage them to shift their energy use to non-peak periods and save money doing so. These new TOU and demand response rate schedules and programs will directly encourage customers to reduce their coincident demand for energy on PG&E's system when resources are most scarce and costs are the highest.

For several years, PG&E has repeatedly emphasized that the current tiered residential electric rate structure is the primary obstacle to successful implementation of "customer-friendly" TOU residential electric rates for PG&E's customers that directly incent load shifting from higher cost to lower cost periods. If PG&E's Rate Design Reform Proposal is approved, this major barrier to successful TOU rates will be removed.

2.4. PG&E's Electric Rate Design Reform Proposal Enhances Customer Choice

As discussed above, an important objective of PG&E's Rate Design Reform Proposal is to *enhance customer choice* through new, *simple, easy to understand* customer rate and billing options. PG&E's Rate Design Reform Proposal applies extensive "lessons learned" including those from SmartMeter™ roll-out and PG&E's highly-subscribed SmartRate program (with over 100,000 customers currently enrolled). Based on those lessons-learned, PG&E is proposing a simple set of electric rate options for residential customers that are easier to understand, transparent in design, and

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simple to compare regarding current impacts on bills and time of use. In addition, PG&E's Proposal includes robust customer outreach and education as part of the transition from the existing, complex rates to the new, simpler rate structure. PG&E's Proposal is based on extensive customer research and direct solicitation of our customers' views conducted over the last five years, including the specific customer research conducted for this proceeding.

In addition, given the simplicity of PG&E's new rate design, it is a stable framework for the future and can take into account changes and increased customer sophistication and use of customer-directed energy management tools, such as Green Button Connect, two-way demand response communications tools, and Home Area Network devices. This is because PG&E will be offering customers a clear and stable choice between simple two-tiered and non-tiered TOU rates, while preserving a limited number of additional residential rate options that meet specific customer needs, such as electric vehicle, "Green Option" and CARE rates.

2.5. PG&E's Electric Rate Design Reform Proposal Provides Explicit and Transparent Incentives and Encourages Economically Efficient Decision-Making. In So Doing, PG&E's Electric Rate Design Reform Proposal Avoids Unnecessary Cross-Subsidies

Simply stated, economically efficient decision-making requires that prices be based on marginal costs, and that subsidies be minimized. PG&E's Rate Design Reform Proposal supports these principles by returning residential electricity prices to cost-based rates after over a decade of distorted, inefficient below-cost and above-cost pricing to millions of PG&E customers. PG&E does not propose to return electricity prices immediately to more cost-based rates, because an adequate and reasonable transition period is needed in order to help customers adjust to these more cost-based

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rates. However, PG&E intends that the transition period be short enough to avoid unnecessarily extending the period of large cross-subsidies that now has lasted more than a decade. At the same time, PG&E's Rate Design Reform Proposal will maintain a "social safety net" in electric rates through continuation of the CARE program and a baseline rate for a baseline quantity of electricity for residential customers.

2.6. PG&E's Electric Rate Design Reform Proposal Helps Achieve California's High Priority Energy and Environmental Goals

As discussed in the sections above, PG&E's Rate Design Reform Proposal returns residential electric rates to cost-based rates over a reasonable transition period, thus providing economically efficient price signals to customers while maintaining a necessary "social safety net" for low income and baseline customers. In so doing, PG&E's Electric Rate Design Reform Proposal substantially enhances the achievement of California's energy and environmental goals. This is because, over a gradual transition period, millions of PG&E's customers whose electricity rates have excluded the real costs of energy for over a decade, will now see the accurate price signals and costs of California's energy resources, including both the internal and external costs of carbon-based resources. In turn, these more accurate price signals will for the first time in over a decade provide millions of PG&E's residential customers with actionable incentives to install energy efficiency measures and customer-owned generation facilities that reflect California's energy and environmental policies.

PG&E's review of recent research on economically efficient energy pricing indicates that PG&E's Rate Design Reform Proposal is likely to result in greater energy

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savings on a net basis compared to the status quo of tiered electric rates.[82] These net savings will be in addition to the additional benefits PG&E expects from simplifying the residential rate structure so that customers and third-party energy conservation application developers can better understand and offer cost-saving technologies and measures.

2.7. PG&E's Electric Rate Design Reform Proposal Makes Appropriate Trade-Offs Among Rate Design Principles

If based solely on the core rate design principles of cost-based and equitable rates, PG&E's residential rates should be transitioned immediately to cost-of-service rates, because electricity prices based on cost are the optimum means of ensuring that all customers pay non-discriminatory and economically efficient prices for energy . However, PG&E's Rate Design Reform Proposal takes into account that social costs and benefits also need to be considered in designing utility rates. Accordingly, PG&E's Rate Design Reform Proposal includes certain trade-offs from cost of service ratemaking. These trade-offs include:

- PG&E's Rate Design Reform Proposal retains rate assistance under the CARE program in order to provide income assistance to help low income customers pay their energy bills.
- PG&E's Rate Design Reform Proposal retains a "baseline quantity" of electricity that is priced below cost, in recognition that sufficient quantity of

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[82] In Application 10-03-014 (PG&E's 2011 GRC Phase 2), the CPUC received into evidence testimony that included an analysis by Dr. Ahmad Faruqui, who concluded that, taken as a whole, PG&E's proposals in that proceeding would provide a pro-conservation signal, and should be expected to produce a net decrease in energy sales of nearly 166,000 MWh per year. (PG&E, Faruqui, Exhibit PG&E-1, p. 11-9, lines 11-14.) This occurs largely because CARE customers will have stronger incentives to use less energy under the proposed rate design, while the use by non-CARE Tier 4 customers increases only marginally. (*Id*. lines 15 – 20.)

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electricity at a lower price is a basic necessity for all of PG&E's residential electricity customers.

- PG&E's Rate Design Reform Proposal retains a two-tier residential electric rate structure in which the upper tier price is somewhat higher than the cost of service.
- PG&E's Rate Design Reform Proposal includes a reasonable transition period, in recognition that customers need time and adequate information and education to understand and then make informed decisions on the new residential rate choices that are made available to them.

PG&E supports these trade-offs as a reasonable departure from cost-of-service ratemaking, because the trade-offs are consistent with California's energy, environmental and social policies that our customers and California's policymakers generally support and expect.

2.8. PG&E's Electric Rate Design Reform Proposal Takes Into Account Uncertainties in Customer Preferences, Wholesale Electric Prices, and Economic Conditions

PG&E's Electric Rate Design Reform Proposal explicitly takes into account uncertainties in customer preferences and energy markets generally. PG&E's extensive customer research indicates that customers support the "simple is better" approach in PG&E's Proposal. However, PG&E intends to conduct additional customer research periodically, in order to assess and update our understanding of customer preferences and needs. In addition, PG&E's TOU and two-tiered residential rate offerings are consistent with wholesale electricity market price behavior. As discussed above, PG&E also has taken into account the evolving reforms and improvements in the CARE low income assistance program, particularly the growing recognition that a "one-size-fits-all"

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CARE rate discount is not an efficient means of targeting assistance to low income customers.

The key public policy lesson of over a decade of tiered and frozen residential electric rates is that *electric utilities must continuously reassess and understand the changing preferences and needs of their residential customers*, and quickly adapt their electric rates and services to those changes. PG&E's Rate Design Reform Proposal includes this "lesson-learned" as a core principle.

2.9. PG&E's Electric Rate Design Reform Proposal Enables Time-of-Use Pricing and Other New Customer-Facing Technologies, Tools, Products and Services for Managing Energy Use

PG&E's Electric Rate Design Reform Proposal fully integrates and enables customer-facing technologies and tools that are being developed and offered by third parties "beyond the meter." These technologies and tools are particularly effective if rates are simple, easy to understand, and vary by time of use. PG&E's customer research indicates that its residential electricity customers spend very little time on their bills or in actively managing their energy use, but do respond to new tools, devices and technologies that reduce their energy bills through "set it and forget it" applications. PG&E's Rate Design Reform Proposal is intended to enable greater customer control of their own energy usage, through simpler rate designs and greater access to customer energy usage data through PG&E's Green Button, HAN and Customer Data Access programs.

2.10. PG&E's Electric Rate Design Reform Proposal Requires Legislative Changes to Fully Implement

Current laws, particularly SB 695, prevent the CPUC from adopting changes to residential electric rate designs in order to address the grossly unfair and inequitable

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disparities in current electric rates. Changes in these restrictive laws, such as by adoption of the rate reforms in AB 327 (Perea), are essential in order for PG&E to implement its Rate Design Reform Proposal.

As PG&E noted in its recent 2014 Phase II General Rate Case application, although it is important to do what is possible now to mitigate the high upper-tier non-CARE rate problem, approval by the Commission of all of PG&E's 2014 Phase II proposals would still leave PG&E's top tier rate at 28.9 cents per kWh – far above PG&E's average residential rate of 16.8 cents per kWh.[83] While an improvement, this top tier rate is still too high, and the gap between the Tier 2 and the proposed merged Tier 3/Tier 4 rate is still too large and inconsistent with Public Utilities Code Section 739(d)(1)'s requirement of an appropriate, "gradual [tier] differential." Steep upper tier rates that are far above the average cost to serve are inequitable and cause high bills and unnecessary bill volatility for those whose usage moves into the higher tiers.

Legislation adopting structural reform is needed to remove the constraints that currently limit the Commission from making further progress toward a simpler tier structure with a more appropriate gradual rate differential. In particular, at a minimum the constraints on rate design reform in Public Utilities Code Sections 739.1 and 739.9 need to be removed, as proposed by AB 327 (Perea). In addition, the application of the baseline statute (Public Utilities Code Section 739) and the low income rate assistance statute (Public Utilities Code Section 382) need to be harmonized and, if necessary, revised to ensure clear, transparent, efficient assistance to low income ratepayers to help them pay for basic electricity needs. If and when such structural reforms are

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[83] Pacific Gas and Electric Company's 2014 General Rate Case Phase II Prepared Testimony (A.13-04-012), Exhibit (PG&E-1), Volume 1, Revenue Allocation and Rate Design, Table 3-6 (at p. 3-11).

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enacted, the Commission will once again have the flexibility to make more substantial progress toward solving the high upper tier rate problem and more fairly distribute costs of service among residential customers as proposed by PG&E's Rate Design Reform Proposal. Only then would it be possible, over a reasonable period as proposed by PG&E, to return residential rates to the two tier structure with close to the 15 percent differential that existed before the energy crisis.

2.11. PG&E's Electric Rate Design Reform Proposal Will Adapt Over Time to Changing Load Shapes, Changing Marginal Electricity Costs, and Changing Customer Preferences

PG&E's Rate Design Reform Proposal will adapt to changes in load shapes and marginal costs, because PG&E is not proposing changes to the CPUC's traditional methods for calculating and allocating marginal costs and for designing TOU rates that provide understandable, actionable incentives for customers to reduce their electricity demands coincident with peak demands on PG&E's system. As part of the design and adaptation of PG&E's residential rate design, PG&E will take into account the increasingly sophisticated tools for forecasting short-term electricity demands by its residential customers, using interval SmartMeter™ consumption data and Smart Grid tools such as those being tested and demonstrated under PG&E's Smart Grid Pilot Deployment Project, EPIC demonstration projects, and the California Energy Systems for the 21st Century project.[84]

2.12. PG&E's Electric Rate Design Reform Proposal Will Promote the Safety of Electric Customers, Employees and the Public

PG&E and other California electric utilities need to make extensive investments over the next decade to improve the reliability and safety of their electric distribution and

[84] *See, e.g.*, D.13-03-032, D.12-12-031, D.12-05-037.

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transmission systems.[85] In addition, extensive investments are needed to enhance security of the Information Technology (IT) and other communications systems that ensure safe and reliable operation and maintenance of the electric grid.[86]

PG&E's Electric Rate Design Reform Proposal will promote these overarching safety and reliability goals, because it enhances the trust and confidence of customers that they are paying a fair and accurate price for these infrastructure investments. In addition, PG&E's Rate Design Reform Proposal provides customers with easier to understand choices. By including a rate design that fairly allocates the fixed and accurate costs of supporting customer-owned generation, PG&E's rate design ensures that both PG&E and customers see economically efficient price signals to support the safe and reliable operation of the grid as a "backup" to customer-owned generation.

2.13. Conclusion – PG&E's Rate Design Reform Proposal Complies with the Commission's Optimal Rate Design Principles and Addresses the Commission's Questions

As described above, PG&E's Rate Design Reform Proposal fully complies with the Commission's principles for optimal residential rate design, including the core principles of cost-based and economically efficient rates and reasonable assistance to help low-income customers manage their energy burdens.

In addition, as discussed in Chapter 3, below, PG&E's Rate Design Reform Proposal is supported by the customer research conducted by PG&E and the other utilities in this proceeding.

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[85] *See, e.g.*, PG&E A.12-11-009, 2014 General Rate Case, Phase 1.

[86] *See, e.g.*, PG&E Smart Grid Deployment Plan, 2011-2020, R.08-12-009, June, 2011.

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3. CHAPTER THREE: Customer Research Regarding PG&E's Electric Rate Design Reform Proposal

3.1. Summary of Customer Research Key Findings for Rate Design

PG&E has considered these findings from the customer research in its electric rate design proposal, in balance with the other key rate design principles:

- Customers should be offered choices:
    - The majority indicate willingness to consider switching
    - Those that have opted-in to TOU rate plans are more satisfied than those who have been defaulted to a TOU rate plan
- Even though some customers may not want to consider new rate options, education and especially bill protection can significantly increase willingness.
- Although the majority of customers may not prefer a TOU rate compared to a simple tiered rate, they are already practicing the concept of shifting usage to off peak times.
    - There remains a significant group of customers that are interested in switching to TOU rates.
- kWh prices will be a more important customer consideration than rate structures themselves.
    - Customers will take tier and period kWh price differentials into consideration when choosing among rates to help them save on their bill.
- Based on rate structure alone:
    - Customers will be attracted to simpler structures, primarily flat rate, two-tier and two-period TOU rate.

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- Three-tier and three-period TOU rates will be least attractive.

- Although customers will tend to avoid monthly service fees in an optional rate, this negative effect may be mitigated by
  - A simple rate structure and attractive kWh pricing, and
  - A similar customer service fee on the standard rate.
- The transition strategy should take into consideration tolerance for bill impacts, especially for low-income customers.

PG&E's bill calculator and some typical illustrative bill-to-income impacts of various Rate Design Reform Proposals are discussed in Chapter 4, below.

3.2. Customer Research Genesis and Scope

PG&E believes that in order to develop appropriate rate design proposals in this proceeding, an understanding of customer perceptions of current and possible future rate structures and potential bill impacts needed to be considered. PG&E included this suggestion in its initial OIR comments, and at subsequent workshops the CPUC agreed that customer research should be pursued. PG&E then led a process in collaboration with the IOUs and other parties in the proceeding to design and launch the survey. The design/collaboration phase consisted of multiple webinars and individual meetings with other interested RROIR parties to collect and work to incorporate varying perspectives.

Hiner & Partners[87] was retained by PG&E, SCE and SDG&E to conduct the survey. The online survey of approximately 5,300 electric customers was fielded in February and March of 2013, through a market research panel company employing quotas to ensure the sample was representative of the IOU customer population.

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[87] Hiner & Partners is an experienced marketing diagnostics firm. *See* http://new.hinerpartners.com/index.php/about-us.

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Please see Appendix A.1 for the key findings that were delivered to all interested RROIR parties by Hiner & Partners in a webinar on April 16, 2013.

3.3. Customer Research Objectives

The principles of understandability, simplicity, stability, and choice are difficult to measure and customers can have very different definitions, so obtaining direct customer input was useful. Understanding customer attitudes and preferences for various rate structures helped to inform the development of PG&E's rate proposals in this document.

Specific survey objectives included:

1. Investigate current customer awareness and understanding of different rate structures and rate terminology.
2. Quantify and further identify how customer attitudes and understanding impact evaluation of rate structures such as flat, tiered and TOU, and components such as monthly service fees, demand charges and different kWh pricing structures.
3. Investigate how concepts such as "understandable," stable," "predictable," "choice," "fair," and "affordable" matter to residential customers to better inform rate transition/implementation strategies.
4. Determine customer preferences for different potential rate plan options across different customer groups. Customer groups included:
    - Core Sample: PG&E, SCE, SDG&E customers who were provided information or "education" about rate plan structures.
    - Regional: e.g., climate zone
    - Demographics: e.g., CARE vs. non-CARE, seniors vs. other age groups
    - Solar and non-solar

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- Spanish-speaking
- "High involvement" customers, who were enrolled in programs requiring behavior change for bill savings (e.g., SmartRate)
- "Unexposed" customers that were not provided some level of education about the rate plan options provided in the survey.

See Appendix 2 for a detailed description of the survey methodology.

3.4. Results

Energy Use Behavior

Customers continue to be confused by the relationship between rate structure, energy use behavior, and bill savings:

- 94 percent of the PG&E respondents have *reduced* usage to try to save money on their bill. However, only 42 percent knew they were on a tiered rate, which indicates a strong belief that there is a positive relationship between usage and bill amount, but not necessarily a good understanding of the compounding effect of increasing tier prices.
- 74 percent of PG&E respondents have *shifted* usage to try to save money on their bill. However, only 22 percent *believed* they were on a TOU rate, and less than 2 percent actually are on a TOU rate. A large group of customers think that shifting usage can save them money on their bill, but few understand that they must make an active choice for a rate plan option that rewards this behavior.

Not surprisingly, despite these widespread efforts aimed at lowering bills through reducing and shifting energy use, few respondents believed that these efforts have paid off:

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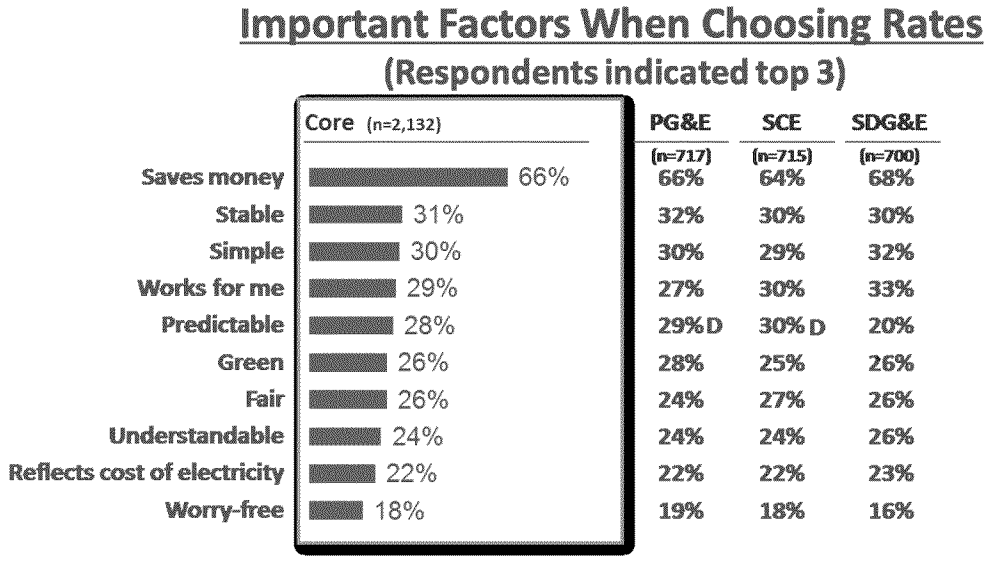
- Only 15 percent believed they saved a lot of money from reducing usage
- Only 9 percent believed they saved a lot of money from shifting usage
- The combination of attempting to save through reducing or shifting with little change in the bill results in frustration and a lack of interest to make any additional efforts to change behavior in the future.

Rate Plan Factor Importance

Respondents were asked to identify the most important factors they would consider when choosing among rate plans. Respondents overwhelmingly and consistently want a rate that will help them save money on their bill. Other important factors included "Stable," "Simple," and "Works for Me." These results were very similar across IOUs. One particularly significant finding for PG&E was that non-CARE customers valued "Green" much more than CARE customers (30 percent vs. 19 percent). Please see Appendix A.3, Customer Survey, Q3.7 for specific language used to describe these different factors considered when choosing rate plans.



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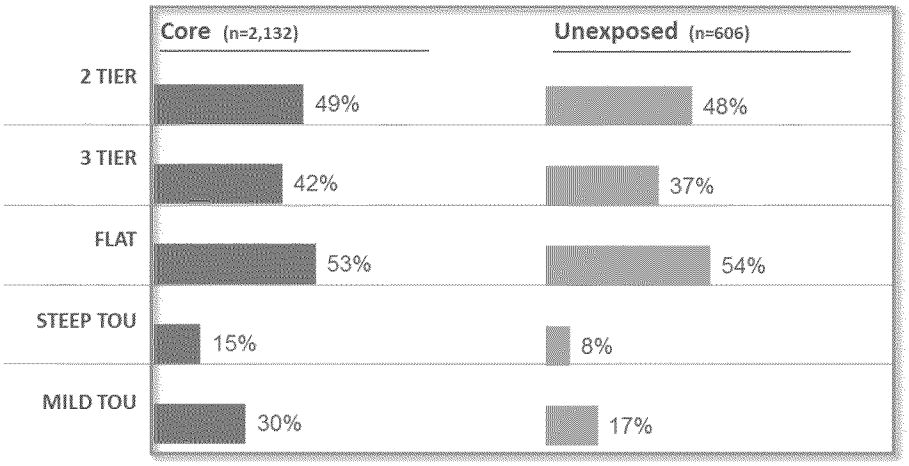
Willingness to Try New Rate Plans and the Effect of Rate Education

About 50 percent of Core respondents said they were willing to try a two tier or flat rate plan. Core respondents were provided "rate education" that included substantial explanation of how alternative rate structures, components (such as monthly service fees, demand charges, and different kWh pricing structures) and energy reducing and shifting behaviors could impact their bill. In order to investigate the importance of rate education, a sub-group of 600 unexposed respondents were not provided rate education before questions about rate preferences. Rate education made little difference in willingness to try two tier, three tier and flat rate plans. However, respondents who were provided rate education were almost twice as willing to try TOU rates. In fact, after rate education, 30 percent of respondents said they would be willing to try a mildly time-differentiated TOU rate.



After respondents indicated their willingness to try different types of new rate plans, they were asked about the amount of bill savings they would expect when faced with the potential for a bill increase as well. Forty percent said they were not willing to risk a higher bill for the opportunity of bill savings. Nonetheless, there was a sizable

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group of respondents (23 percent) that indicated willingness to risk a bill more than 15 percent higher for the potential of a commensurate bill decrease.

Tolerance for Bill Impacts

In order to better understand customer tolerance for bill impacts that might result during the transition to a reformed rate structure, respondents were asked:

> *When your electric bill is more than the average amount or what you were expecting, how much of an increase gets your attention?*

Responses to this question provide insight into bill impact mitigation during the transition period.

For about one-third (36 percent) of Core respondents, a monthly bill increase of less than $20 per month catches their attention. The median bill increase that respondents said they notice was in the $20-$29 range, which, when compared to the median summer electric bill, is in excess of 20 percent of the total bill. CARE customers reacted to smaller bill increases, but their median summer bills are lower, so they also respond to changes in excess of 20 percent of the total bill.

Effect of Bill Protection

Respondents were asked if their willingness to try a new rate plan structure would change if they were provided with twelve months of bill protection ("Try Before You Buy" or "TBYB"), which would credit them for any bill increases during their first year on the new rate plan. TBYB was particularly beneficial in encouraging respondents to try TOU rates. With TBYB, there was a 73 percent increase in Core respondent willingness to try a mild TOU rate (from 30 percent to 52 percent), and a 133 percent increase in willingness to try a steep TOU rate (from 15 percent to 35 percent). This impact was even greater with the unexposed respondents that had not been provided rate education. Unexposed respondents willingness to try a mild

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TOU rate increased 141 percent with TBYB (from 17 percent to 41 percent) and 325 percent for a steep TOU rate (from 8 percent to 34 percent).

Rate Plan Attribute Importance

A choice modeling exercise and conjoint analysis was used to build a model that simulates different rate plan option "baskets." (See Appendix A.2 – Customer Research Methodology, for more explanation of conjoint analysis.) Respondents were shown twelve randomly generated conjoint choice tasks. Each choice task was comprised of three discrete choice options. The conjoint methodology resulted in about 82,000 Core respondent choice tasks that revealed relative preferences for rate plan structures, kWh pricing, and other types of fees. Analysis of these responses showed that three attributes were most important when respondents made choices:

- Monthly service fees and price per kWh levels were the **most** important attributes impacting choice of rate plans.
- Rate structure itself was a bit less important, but still an important factor in the decision. Respondents preferred simpler rate plans:
  - Respondents preferred flat and two tier rate plans the most
  - Respondents preferred three-period TOU rate plans and three-tier rate plans less.

Experience in Other Jurisdictions

Respondents were surveyed in two North American jurisdictions outside California where there are significant numbers of residential customers on TOU rates. In Arizona, Arizona Public Service (APS) and Salt River Project (SRP) have moved 30 percent to 40 percent of their residential customers onto optional TOU rates. This migration has occurred over two decades. SRP, for example, reached about 20 percent

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penetration in the first ten years, and now close to 30 percent of its residential customers are on TOU rates.

In Ontario, Canada, Hydro One has moved almost all of its residential customers onto a mandatory TOU rate over the past several years.

An interesting observation about the two jurisdictions that have a large portion of their residential customers on TOU rates is that their customer satisfaction levels are significantly higher where customers are given an optional TOU rate versus a default or mandatory TOU rate. Hydro One respondent satisfaction levels were very low, while the Arizona respondent satisfaction levels were quite high. While there are many factors that ultimately go into utility satisfaction scores, this data provides credible evidence about how rates and satisfaction can be linked.

	SRP/ APS	Hydro One	CA IOU Core
Satisfaction (Top 3 Box)			
Availability of Meaningful Rate Plan Options	63%	23%	41%
Timely Rate Change Communications	51%	28%	41%
Rate Plan Education	48%	19%	33%
Fair Price	41%	12%	32%
Keeping the Lights On	80%	41%	64%
Highly Satisfied with Utility	76%	37%	59%

APS/SRP respondents were generally the most satisfied with their utility. In addition, Hydro One respondents on mandatory TOU rates were not much more aware or knowledgeable about TOU rates than APS/SRP customers that have opted in to TOU rates over time. This represents little evidence that mandatory TOU rates successfully engage customers.

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3.5. Conclusion

Market research and recent experience have shown that current and future rate designs / options can have significant impacts on many customers. Customers want meaningful rate plan options, and are willing to change their behavior to lower their bills. In follow-up comments, survey participants also overwhelmingly indicated their interest in the topic of electric rates and how energy use translates to their bill. Considering customer preferences and attitudes is critical to the development of rate plan options that engage customers with their energy use while improving customer satisfaction and helping achieve State policy goals. In Chapter 4, "Typical Bill Impacts - PG&E Electric Rate Design Reform Proposal vs. Current Rate Structure," PG&E addresses how the transition to a new set of rate plan options will help customers manage bill impacts and make choices among different rate plans.

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4. CHAPTER FOUR: Typical Bill Impacts PG&E Electric Rate Design Reform Proposal vs. Current Rate Structure

4.1. PG&E's Bill Calculator Model

In late 2012 and early 2013, PG&E developed its Bill Calculator Model to enable the CPUC's Energy Division and various parties to analyze various rate design scenarios and compare those with respect to the rate design principles described in the Residential Rate OIR.[88] The Bill Calculator Model uses the 2009 Residential Appliance Saturation Survey (RASS) data, merged with 2011 customer usage data, to design the rates and calculate the corresponding bill impacts for PG&E's Proposal.[89] The RASS data consist of 7,782 sample points covering all PG&E baseline territories. Using this customer sample, the bill calculator first determines the amount of revenue collected based on present rates. This revenue amount is then adjusted for the CARE subsidy amount to determine the revenue requirement with no CARE subsidy. The resulting revenue requirement is then used to design the rates of various non-TOU and TOU rate structures (referred to as "Proposed Scenarios"), calculate the bill amounts and CARE subsidies, and also estimate whether the particular rate structure results in the total amount of energy consumed decreasing (i.e., energy conservation) or increasing. In addition, the Bill Calculator Model determines cost-based bill amounts using marginal cost information for generation, transmission, distribution, and other charges. The cost-based bill amounts can be used as a benchmark against which to evaluate the cost basis of any proposed rate scenario. The Bill Calculator Model thus allows users to assess the extent to which a rate scenario serves the rate design principles.

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[88] *Administrative Law Judges' Ruling on Workshop*, R.12-06-013, January 31, 2013, pp. 4-5.

[89] The Bill Calculator allows bill impact evaluation of various rate design structures. PG&E's Proposal includes a two tiered non-TOU rate structure and a flat TOU rate structure.

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4.2. Designing Rates With the Bill Calculator Model

The Bill Calculator Model allows the user to develop various combinations of non-TOU and TOU rate designs. For example, non-TOU rate structures can be designed either as a single flat rate, or as a multi-tiered rate structure with up to five tiers. The user can also specify a design with a monthly fixed fee or a minimum bill amount. If a tiered rate structure is chosen, the user can specify the levels of the Tier 1 and Tier 2 rates or the rate differentials between different tiers' rates. The Bill Calculator Model processes these various input assumptions automatically and produces specific rate values as outputs. For TOU rates, the Bill Calculator Model can design rates with either two or three TOU periods. Details of the inputs and functionalities, and instructions for how to run the calculator, are described in the Bill Calculator User Manual.[90]

4.3. Proposed Rate Design

As described in the Executive Summary, PG&E's Rate Design Proposal is for customers to have the choice between two basic rate plans:

1. A standard rate with two tiers and no TOU periods; and
2. An optional TOU rate without tiers.

Both the standard (tiered, non-TOU) and the optional (non-tiered, TOU) rate schedules would have a monthly fixed fee replacing the minimum bill amounts currently applicable to PG&E's residential rate plans. CARE customers would have a similar choice between a standard tiered rate and a non-tiered TOU rate, but with all rate components discounted by an explicit CARE discount percentage.

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[90] A copy of PG&E's Bill Calculator User Manual is attached as Appendix B.

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4.4. Cost Basis of PG&E's End State Rate Design

To illustrate how PG&E's proposed rate design represents an improvement compared to current rates in terms of more closely reflecting cost of service and "rate efficiency," PG&E used the Bill Calculator Model to calculate average rates for each rate option and compared them to average cost. In the figures below, PG&E used its 2014 average rate forecast (based on the marginal cost based calculation included in the Bill Calculator) as a proxy for average cost, to illustrate how the end state rates bear a better resemblance to cost basis as usage increases. As can be seen in Figures 4-1 and 4-2 below, the average cost (cents per kWh) shows an initially declining curve which moves to a finally near-flat shape relationship with the monthly average usage. In contrast, Figure 4-1 shows that, while the existing four-tiered structure has the average rate increasing with average monthly usage, PG&E's illustrative rate structures as shown in Figure 4-2 result in average rates declining with the monthly average usage in a way that is consistent with the average cost behavior. This demonstrates that PG&E's Rate Design Reform Proposal is more cost-based and more economically efficient when compared to the existing rates, as the shapes of those curves resemble the shapes of the cost-based rate curve more closely.

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FIGURE 4-1
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATIVE 2014 RATE EFFICIENCY OF THE CURRENT RATE STRUCTURES USING RASS 2009 SAMPLES[91]

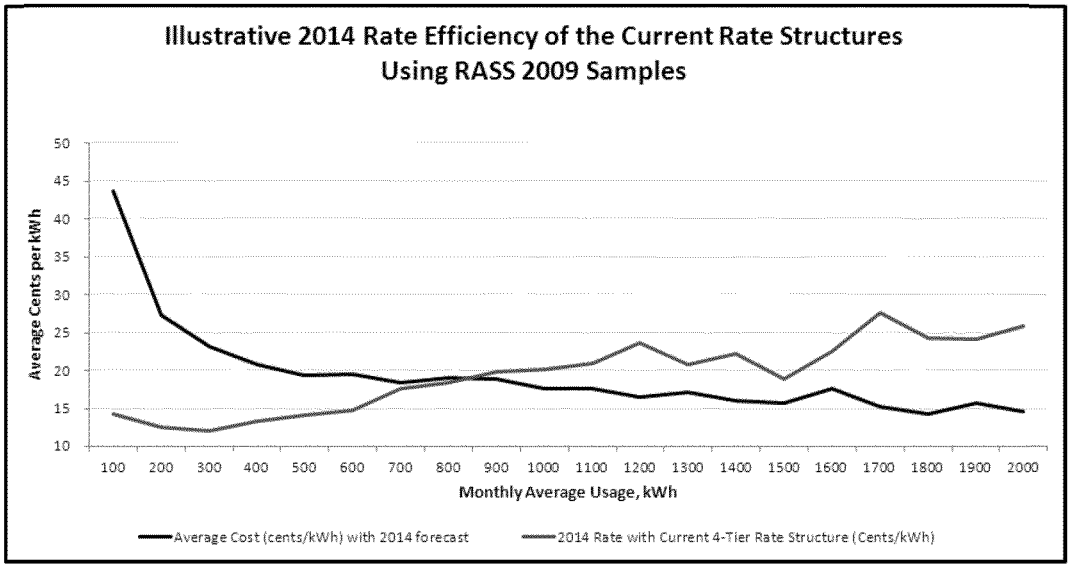
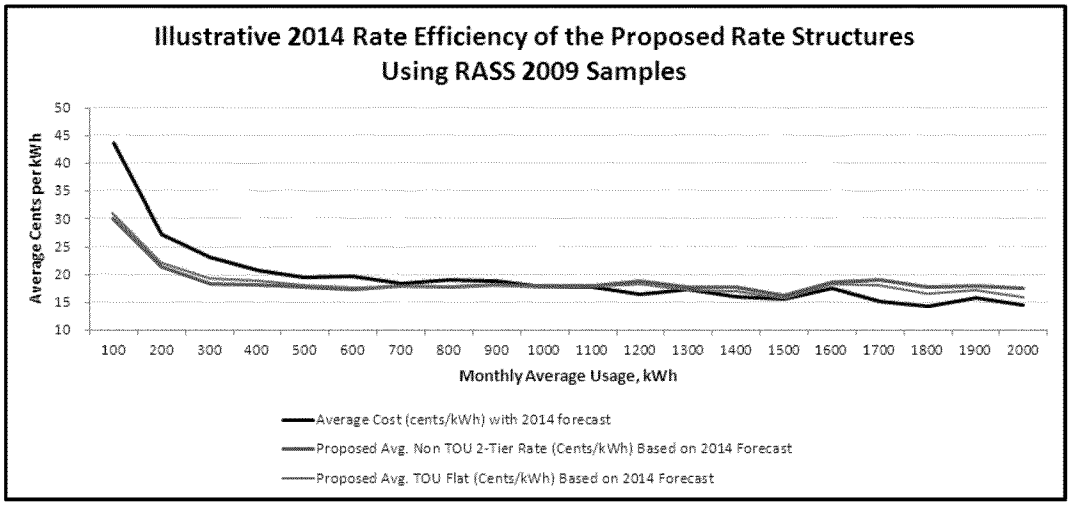


FIGURE 4-2
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATIVE 2014 RATE EFFICIENCY OF THE PROPOSED RATE STRUCTURES USING RASS 2009 SAMPLES



4.5. Energy Conservation

PG&E used the Bill Calculator Model to estimate the effects of its proposed end state rates on overall energy consumption, relative to the total consumption level that

91 PG&E adjusted the Bill Calculator to be able to use 2014 revenue forecast to generate Figure 4-1 and Figure 4-2.

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would occur based on the current rate structure. Specifically, PG&E input a -0.20 price elasticity estimate in its input assumptions for customers switching from current tiered to non-TOU rates, and elasticities of -0.20 (substitution) and -0.04 (daily) for the non-TOU to TOU rate change. The results showed reductions in overall energy usage between approximately 2 percent to 3 percent from customers migrating from today's currently tiered rates to an end state two-tiered standard and non-tiered TOU rate structures over an illustrative four year period. PG&E has not yet determined the most appropriate transition period for its Rate Design Reform Proposal, and thus the transition period for purposes of evaluating energy conservation effects may be shorter or longer than the illustrative period. However, the energy conservation effects of the Rate Design Reform Proposal are positive without regard to the length of the transition period.

4.6. Choice, Simplicity and Stability

PG&E's proposed standard (non-TOU) rate design has only two tiers, which is much simpler than the current four-tier structure. For optional TOU rates, PG&E's proposed rate design has no usage tiers at all, which is *far* simpler than today's four-tiered TOU rate. In addition, PG&E's Proposal that the CARE discount be provided via a flat discount percentage of non-CARE bills (whether standard or TOU) further simplifies the tariffs. Moreover, PG&E's proposed new two-tier rate structure significantly reduces today's high summer bill volatility, by significantly reducing the magnitude of the highest tier rate.

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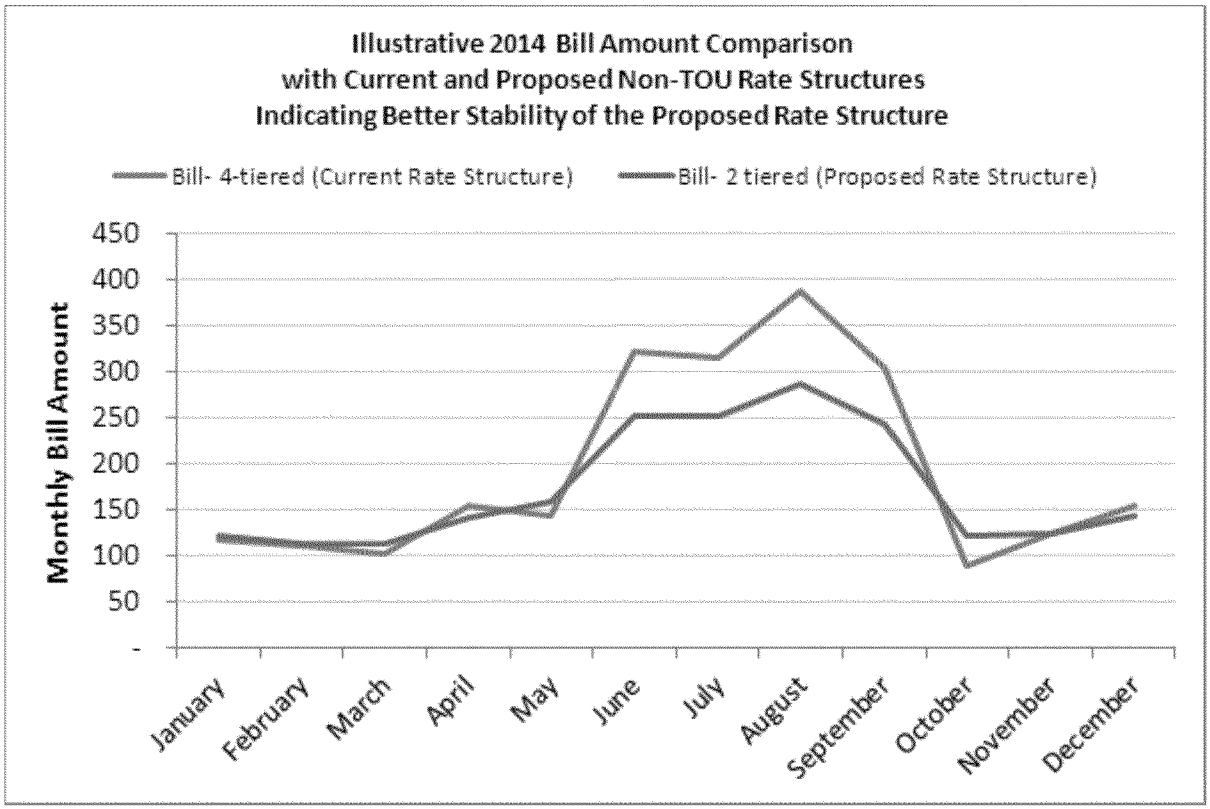
FIGURE 4-3
PACIFIC GAS AND ELECTRIC COMPANY
ILLUSTRATIVE 2014 BILL AMOUNT COMPARISON WITH CURRENT AND PROPOSED NON-TOU RATE STRUCTURES INDICATING BETTER STABILITY OF THE PROPOSED RATE STRUCTURE



4.7. Transition Analysis Methodology

PG&E understands that its Rate Design Reform Proposal cannot be implemented immediately, but rather must be implemented over a reasonable transition period to manage bill impacts on some customers while also providing bill relief to others. While the transition period must be sufficient to keep bill impacts manageable, at the same time those customers who are being harmed by the current rate design (and who have, over the last decade, shouldered a disproportionate share of the cost burden allocated to the residential class) should receive timely rate relief.

Key considerations that drive the pace at which customers should be transitioned include: (a) managing customer bill impacts, (b) evaluating tolerance for bill increases as it relates to customers' energy burdens (affordability or bill-to-income ratios),

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(c) coordinating the pace of the transition in years with future utility revenue requirements changes, (d) managing the amount of revenue loss that can occur with increased TOU rate plan adoption by customers, and (e) determining the appropriate levels each year of particular rate components like the monthly fixed fee and the CARE discount percentage.

As described above, PG&E's Proposal for standard rates involves moving from the current four-tiered structure to the two-tiered structure that existed before the energy crisis, coupled with a monthly fixed fee to more fairly collect a portion of PG&E's fixed costs of service. Similarly, PG&E's Proposal for voluntary TOU rates involves moving from the complicated four-tiered TOU rates that exist today to a much simpler TOU rate schedule without any tiers and with a monthly fixed fee. Different approaches can be employed in order to get from the current to the proposed new designs. One way to do this is to calculate rates each year under both the current and the new proposed rate designs, and take the weighted average of the two (with the weights gradually changing over time to arrive at the new rate design).[92] However the rates are calculated, the important thing is for the rate changes to occur at a pace that provides long needed rate relief for upper tier customers, while at the same time providing lower tier non-CARE and CARE customers with the means to manage their energy bills relative to their energy burdens.

In this proceeding the Commission need not, and in fact should not, adopt any particular transition schedule. That can be done in future rate proceedings based on

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[92] For example, if it is desired to have the transition occur over a four-year period, in the first year the current rates would be given a weight of 0.75 and the new proposed rates a weight of 0.25. Then in the second year, each set of rates would be given a weight of 0.50. In the third year, the current and new rates would receive weights of 0.25 and 0.75, respectively. Finally, in the fourth year the current and new weights would be zero and one, and the transition would be complete.

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then-current information about revenue requirement and sales forecasts. Rather, in this proceeding, the Commission should approve PG&E's Proposal for the optimum features of appropriate, cost-based, rate structures (standard and TOU) toward which rates should change. The details as to the path to the proposed rate design structure, as well as the optimal length of the transition period, can be determined later.

4.8. Customer Affordability

PG&E has analyzed the impact of illustrative rate design proposals on affordability. To do this, PG&E utilized customer-reported income data from the aforementioned 2009 RASS conducted by California Energy Commission combined with bill amounts obtained from the Bill Calculator Model to calculate bill-to-income ratios. Particular focus was paid to the first year of transition, since the analysis suggested that the second year and beyond will have similar or lesser impacts than the first year.

Bill to income ratios were calculated for the following cases:

- Case 1: 2013 bill amounts based on PG&E's May 2013 rates;
- Case 2: 2014 bill amounts based on the 2014 forecasted rates assuming that the rate structures remain the same as of today (i.e., four-tiered rate structure with a minimum bill amount and no customer charge); and
- Case 3: 2014 bill amounts based on the 2014 forecast rates assuming that the proposed new rate structure is in place (including a customer charge replacing the minimum bill amount).

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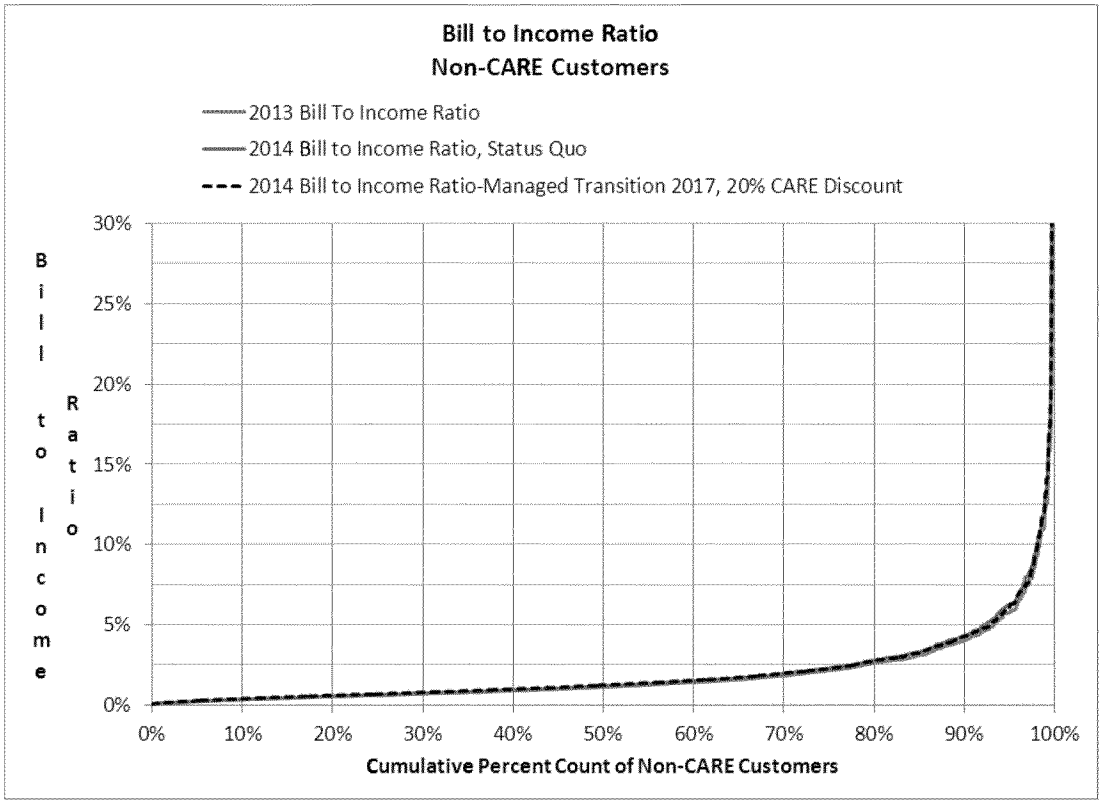
The bill-to-income ratios described above are shown in Figures 4-4 (for non-CARE households) and 4-5 (for CARE households) below.[93] The horizontal axes of these figures show the cumulative percent count of non-CARE and CARE customers respectively (arranged in ascending order of bill-to-income ratio), while the vertical axes show the bill-to-income ratios. Although the figures and length of the transition period are illustrative only, and PG&E's specific rate proposal may differ, the figures show that the impact of an illustrative four year transition period on the bill-to-income ratios of non-CARE customers is insignificant, while the similar impact on CARE customers' ratios is slightly larger but still very modest and manageable.

FIGURE 4-4
PACIFIC GAS AND ELECTRIC COMPANY
BILL TO INCOME RATIOS FOR NON-CARE CUSTOMERS



[93] These charts include the effect of customers choosing between non-TOU and TOU rates based on assumptions regarding what a tolerable bill impact would be.

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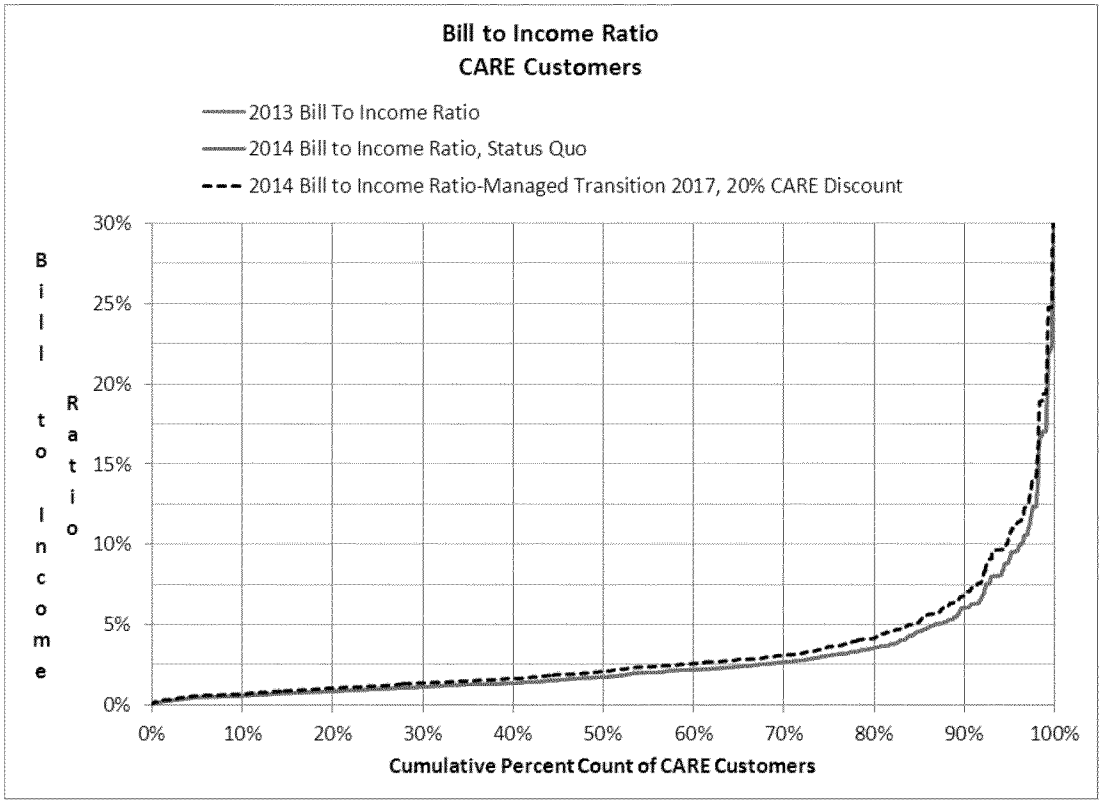
FIGURE 4-5
PACIFIC GAS AND ELECTRIC COMPANY
BILL TO INCOME RATIOS FOR CARE CUSTOMERS



4.9. Conclusion

The Bill Calculator has enabled review of various illustrative rate structures and the relative bill impacts for each structure analyzed. The results suggest that proposed rate structures with fewer or no tiers and with a reasonable monthly fixed fee most appropriately serve the optimum rate design principles, and will result in a significant improvement from the current rate structures. The results of the transition analysis also suggest that the changes proposed to achieve the rate design structure can be accomplished in a reasonable timeframe with manageable changes and impacts on customers.

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5. CHAPTER FIVE: Benchmarking PG&E's Electric Rate Design Reform Proposal With Other Utilities in California and Outside California

5.1. Scope of Benchmarking

PG&E has benchmarked electric rate design structures of other utilities and in other states.[94] As discussed in more detail below, PG&E's benchmarking indicates that California's existing residential electric rate design structure is far out of step with the residential rate design structures of other California energy and non-energy utilities and utilities in other states. In fact, electric utilities in other states with progressive energy and environmental policies, including policies supporting energy conservation, renewable energy and direct assistance to low income utility customers, achieve their energy and environmental goals with electric rate design structures very similar to PG&E's Electric Rate Design Reform Proposal.

5.2. Rate Efficiency

Appropriate cost basis is a cornerstone of rate design. To benchmark the cost basis of the current rate structure, PG&E has studied the relationship of the average rate to the usage (kWh) of a large number of Utilities. The 2012 rate data shows that the average rate declines as the usage increases for most of the utilities (except California's investor owned utilities). This is shown in the figure below. PG&E's proposed new rate structures (two-tiered non-TOU and flat TOU) along with monthly fixed fee will help in achieving a declining average rate with increasing usage which will then better reflect a more appropriate cost basis behavior similar to that demonstrated by the rate structures of most of the utilities in the nation.

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[94] Rates structures of twenty-two utilities from outside California have been surveyed.

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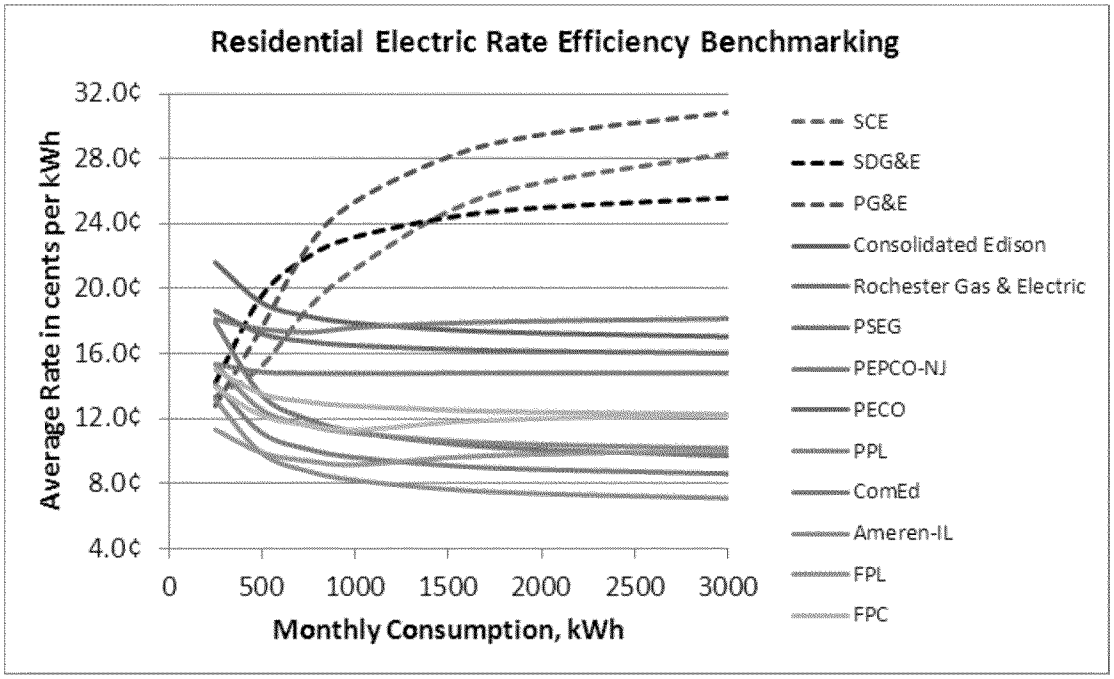
FIGURE 5-1
PACIFIC GAS AND ELECTRIC COMPANY
COMPARISON OF COST BASIS EMBEDDED IN 2012 RATES OF A FEW UTILITIES



5.3. Monthly Fixed Fee

PG&E has reviewed the monthly fixed fees that existed in 2012 across various utilities in the nation. These utilities have monthly fixed fees of varying amounts in their rate structures. Approximately 27 percent of the utilities surveyed have fixed fees above $10/month, while 64 percent of these utilities have fixed fees between $5/month and $10/month. Incorporating a monthly fixed fee in the rate structure helps to improve the cost basis of rates, since a significant portion of the utilities' costs is fixed. For this reason, PG&E's proposed new rate structures will include a suitable monthly fixed fee.

In addition, California publicly-owned utilities such as the Sacramento Municipal Utility District (SMUD), have monthly fixed fees, including in climate zones with above-average usage. For example, SMUD currently charges $12.00 per month for

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non-CARE customers and $3.50 per month for CARE customers, and plans to ramp up its non-CARE fixed fee to $20 over time.[95]

It is important to note that a monthly fixed fee, although fixed in nature, does not negatively impact energy conservation. Research shows that customers respond to the total bill (i.e., average rate) rather than the marginal (per kWh) rate. Hence a suitable monthly service fee will not impact energy conservation negatively, and will improve the cost basis and economic efficiency of rates.

95 *See* discussion in Section 2.1.4, above.

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FIGURE 5-2
PACIFIC GAS AND ELECTRIC COMPANY
MONTHLY FIXED FEE DATA FOR REPRESENTATIVE UTILITIES

Utility	State	Monthly Service Fee
Alabama Power Co	AL	$ 14.50
Arizona Public Service Co	AZ	$ 8.55
Baltimore Gas & Electric Co	MD	$ 7.50
Commonwealth Edison Co	IL	$ 15.06
Connecticut Light & Power Co	CT	$ 16.00
Consolidated Edison Co-NY Inc	NY	$ 15.76
Consumers Energy Co	MI	$ 7.00
Detroit Edison Co	MI	$ 6.00
Duke Energy Carolinas, LLC	NC	$ 9.90
Florida Power & Light Co	FL	$ 7.24
Georgia Power Co	GA	$ 9.00
Massachusetts Electric Co	MA	$ 4.00
Niagara Mohawk Power Corp.	NY	$ 17.00
Northern States Power Co	MN	$ 7.11
PECO Energy Co	PA	$ 7.09
PPL Electric Utilities Corp	PA	$ 14.17
Progress Energy Carolinas Inc	NC	$ 7.17
Progress Energy Florida Inc	FL	$ 8.76
Public Service Co of Colorado	CO	$ 6.75
Public Service Elec & Gas Co	NJ	$ 2.43
Union Electric Co	MO	$ 8.03
Virginia Electric & Power Co	VA	$ 7.00
Pacific Gas & Electric Co	CA	$ -
San Diego Gas & Electric Co	CA	$ -
Southern California Edison Co	CA	$ 0.87

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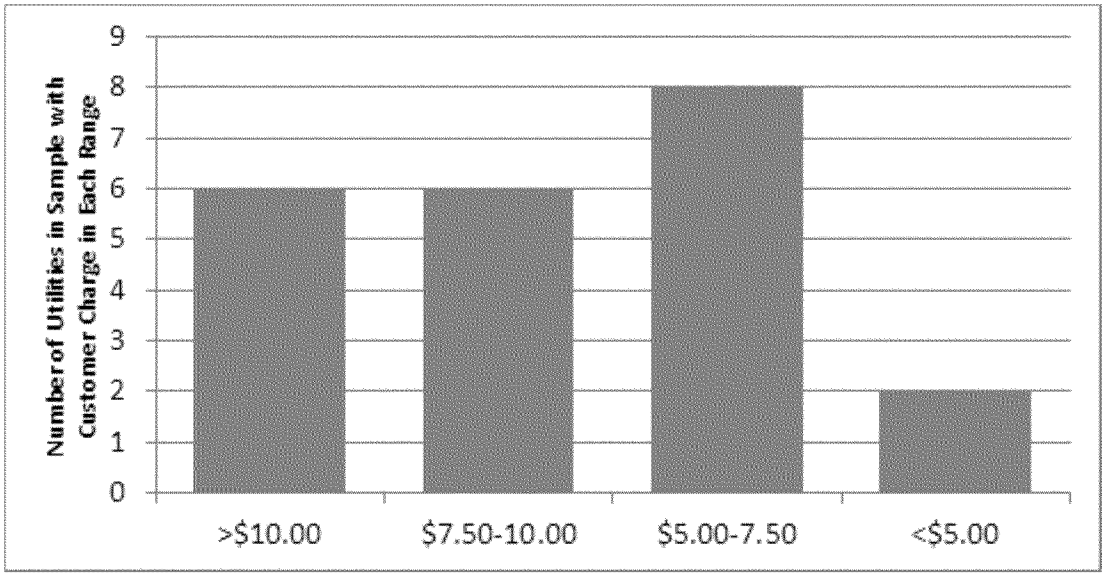
FIGURE 5-3
PACIFIC GAS AND ELECTRIC COMPANY
MONTHLY FIXED FEE DISTRIBUTIONS FOR REPRESENTATIVE UTILITIES



5.4. Number of Rate Tiers

PG&E has reviewed the number of rate tiers that existed in 2012 across various utilities in the nation. Twenty out of the twenty-two utilities surveyed have two tiers or fewer in their residential rate structures. Based on this benchmarking data as well as PG&E's analysis of various rate design structures, PG&E has proposed a two-tiered non-TOU rate structure and a flat TOU rate structure that will serve the CPUC's rate design principles significantly better than the current rate structures.

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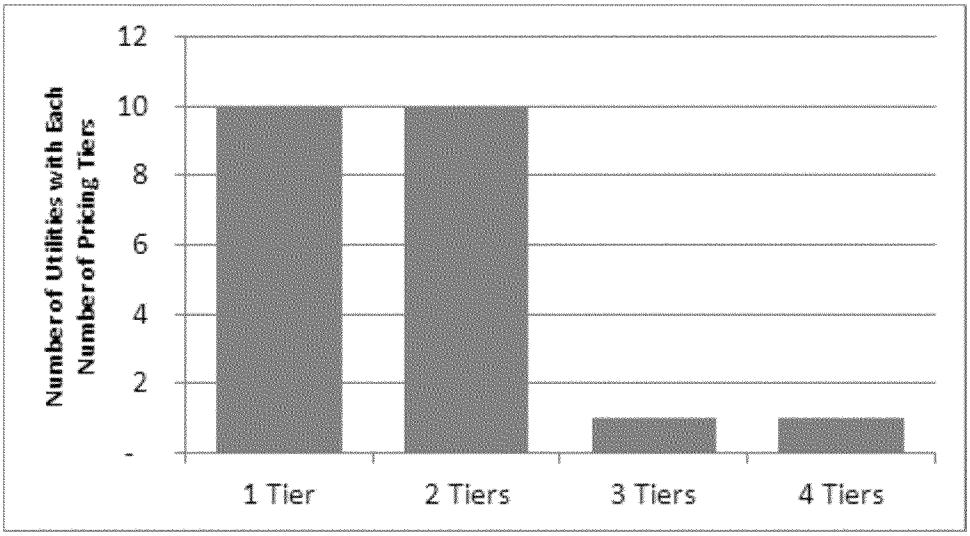
FIGURE 5-4
PACIFIC GAS AND ELECTRIC COMPANY
NUMBER OF RATE TIERS FOR REPRESENTATIVE UTILITIES



5.5. Conclusion

PG&E's benchmarking of other investor-owned and publicly owned electric utilities demonstrates that PG&E's Rate Design Reform Proposal is in line with the vast majority of its peer utilities around the country.

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6. CHAPTER SIX: Policy Recommendations and Next Steps

6.1. The Current Residential Electric Rate Structure Fails to Meet the Commission's Rate Design Principles and Is Unfair and Inequitable to Millions of PG&E's Customers

As demonstrated above, California's current investor-owned utility residential electric rate design structure is neither cost-based nor equitable, and therefore fails to meet the Commission's rate design principles. Millions of PG&E's residential electric customers across all income levels and all parts of PG&E's service territory are paying millions of dollars a year in higher electric bills because of the broken rate design structure. The broken rate structure cannot be fixed by small incremental steps or without changes in law. Nor can it be fixed overnight. But it must be fixed soon, or else the unfair shifting of costs among customers will only get worse and potentially derail California's ambitious energy and environmental agenda. The Legislature should expeditiously adopt AB 327 (Perea) to give the Commission the tools to fix and reform today's broken rate structure, and the Commission should support AB 327.

6.2. PG&E's Proposal to Reform the Residential Electric Rate Design Structure Will Meet All the Commission's Rate Design Principles and Remove the Unfairness and Inequity in the Current Rate Structure

PG&E's Rate Design Reform Proposal will meet the Commission's fundamental goals of returning residential electric rates closer to cost while maintaining and improving the affordability of electricity for those who most need it. Over a reasonable transition period, PG&E's proposal will provide residential customers with simple and understandable rate options for their electricity needs, including a time-of-use rate option that allows them to save energy and money on their monthly bills by shifting their energy use to off-peak periods. The decade-old "temporary" tiered-rate structure will be

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returned toward its historical cost basis, including a differential between baseline rates and other rates that is reasonable, closer to cost, and manages significant bill volatility. Finally, PG&E's proposal opens up residential electricity markets to much broader opportunities for third-party entrepreneurs to provide all residential customers with "beyond the meter" energy solutions that align with the transparent and accurate price signals communicated by the reformed residential rate structure.

6.3. PG&E Will Provide a Reasonable Transition to Protect Customers and Ensure that Customers Are Fully Aware and Educated on the New Rate Structure

PG&E's rate vision is built on a foundation of both customer choice and customer understanding of their choices. An optimal rate design would return PG&E's residential electric rates toward cost and an efficient level of rate assistance to needy customers as soon as possible. However, PG&E's proposal recognizes the essential role that customer education and understanding must play in a successful transition to the new rate structure. Therefore, PG&E's proposal includes a multi-year transition period with an expectation that comprehensive, extensive outreach and education of residential electricity customers is needed before the rate design changes are fully implemented.

6.4. PG&E's Rate Design Reform Proposal Will Protect Low Income Customers and Increase the Tools and Assistance Available to Those Customers to Help Them Pay Their Utility Bills

PG&E's Rate Design Reform Proposal maintains fair and substantial rate assistance to low income customers under the CARE program. It does so in recognition that not only is the current CARE discount too high and unfocused relative to historical levels, but also that the CARE program itself will need to undergo reform and improvements during the same period that PG&E's Rate Design Reform Proposal is

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being implemented. Like the tiered residential rates themselves, the size of the CARE discount and subsidy is unsustainable. But PG&E's proposal does not just rely on a mechanical reduction in the CARE discount itself. Instead, PG&E would improve the tools and assistance available to low income customers to manage and reduce their energy burdens and help pay their monthly energy bills. As a result, PG&E intends that, as the CARE program itself becomes more efficient and targeted, the reduction in the CARE discount will be modest in effect and manageable for customers.

6.5. PG&E's Rate Design Reform Proposal Will Provide More Effective Incentives for Energy Conservation and Greater Reductions in Greenhouse Gas Emissions Than the Current Rate Structure

A primary goal of PG&E's Rate Design Reform Proposal is to ensure that residential electric rates accurately incorporate the price of carbon to all customers at all time periods of the day over a reasonable transition period. In so doing, PG&E's proposal will provide millions of customers with a more appropriate incentive to conserve and manage their energy use as part of their monthly energy bills, thus expanding the opportunity for those customers to directly reduce their "carbon footprints" and address climate change. For the first time in over a decade, most residential electric customers will see the real price of energy, including fully internalizing the costs of carbon and other environmental externalities consistent with California's progressive energy and environmental policies.

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6.6. The Commission Should Adopt PG&E's Electric Rate Design Reform Proposal as the Preferred Rate Design for Residential Electric Rates, and Authorize PG&E to File a Formal Rate Design Application to Implement a New Residential Electric Rate Structure Consistent With the Proposal

As discussed above, PG&E's Rate Design Reform Proposal is fully supported by the facts and demographics of PG&E's customers and costs of service, and is consistent with the Commission's principles for optimal rate design. The Commission should adopt PG&E's Rate Design Reform Proposal as the preferred rate design policy for PG&E's residential electricity customers. The Commission should also authorize PG&E to file a formal rate design application to implement a new residential electric rate design structure consistent with PG&E's proposal. The California Legislature should enact AB 327 (Perea) to provide the Commission, PG&E, and PG&E's electricity customers the tools to put PG&E's Proposal into effect and provide PG&E's customers with the bill relief they need.

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