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Before the

**U.S. House Energy and Commerce Committee
Subcommittee on Energy and Power**

**Oversight Hearing on
“American Energy Security and Innovation: An Assessment of Private-Sector Successes
and Opportunities in Energy Efficient Technologies.”**

February 26, 2013

Chairman Whitfield, Ranking Member Rush and Members of the Committee, I am pleased to appear before you to offer my views on the role energy efficiency plays in making our economy more productive, more innovative and more competitive. By investing in energy efficiency, modernizing our nation’s energy system, and educating businesses and consumers on available options and technologies, we have an opportunity to get more value out of every dollar consumers and business spend on energy, creating savings that can be used in other productive ways.

I look forward to sharing with you some of the successes we have achieved at Pacific Gas and Electric Company (PG&E) and in California surrounding energy efficiency and demand response; the benefits and savings these resources have provided to our customers and state; the opportunities we believe exist to do more; and the policies needed to make an even bigger impact.

About PG&E and Our Industry

By way of background, PG&E is one of the largest combined natural gas and electric utilities in the United States. With more than 20,000 employees, the company provides natural gas and electric service to 15 million people throughout a 70,000 square-mile service area in northern and central California. We operate one of the cleanest fleets of electric generating assets in the

country, including the nation's largest privately-owned hydroelectric system, which incorporates a 1,200-megawatt (MW) pumped storage facility, a 2,200 MW nuclear station, three highly-efficient and flexible natural gas plants, and more than 100 MW of photovoltaic solar generation.

We have also made industry-leading investments in innovative customer energy efficiency and demand response programs over the past 30 years. Our programs include efforts to directly educate and incentivize customers to purchase energy efficient products; working with retailers, distributors, vendors, trade professionals and contractors to increase the accessibility of high efficiency products; and partnering with manufacturers and distributors to increase the market share of higher efficiency products.

These and other initiatives developed, implemented and managed by PG&E, and encouraged by California, have saved our customers more than \$20 billion and avoided more than 180 million metric tons of greenhouse gas (GHG) emissions. These successes have been instrumental in keeping California's per capita energy use flat since the 1970s, thereby avoiding the need to build approximately 25 large power plants. In fact, in 2011 alone, PG&E's programs saved 270 MW of electricity and 33.2 million therms of natural gas. These results helped save customers more than \$262 million on their energy bills and avoided the emissions of nearly 840,000 metric tons of GHG.

PG&E is not alone. Utilities nationwide are working with states and customers to reduce energy demand and increase energy productivity. The power sector's record on energy efficiency demonstrates a broad commitment to—and expertise in—helping consumers use energy more wisely. According to a report expected this week from the Edison Foundation, electric utilities spent a record \$5.7 billion on energy efficiency and demand response programs in 2011, and saved 107 billion kWh of electricity—enough to power nearly 11 million homes, while avoiding 75 million metric tons of GHG emissions.

Providing Innovative Energy Solutions to Our Customers

We put our customers at the center of how we design our energy management programs. In fact, we maintain a portfolio of 130 individual programs tailored to meet their unique needs. We help customers understand, actively manage and reduce their energy use. To support this goal, we are enabling new tools and technologies to spur innovation and provide customers with broader choices for rates, products and services. This includes using SmartMeter™ technology to give customers increased information and facilitate the wider adoption of advanced technologies, such as electric vehicles, smart thermostats and other energy management tools.

Improving Service and Empowering Customers with SmartMeter™ Technology

PG&E's SmartMeter™ program is critical to our efficiency efforts. It is also helping to lay the foundation for a Smart Grid. PG&E's program represents North America's largest deployment of automated metering infrastructure, with more than nine million meters installed to date. Statewide, utilities have deployed more than 17 million meters. The system's wireless communications enables us to provide more reliable service, making it possible to restore power faster after a disruption or reconnect a customer after a move to a new residence.

The technology also gives customers access to more frequent information about their energy use, which enables them to better manage their consumption and costs. One of the tools we created using SmartMeter™ technology is the Green Button. PG&E responded to a White House challenge to design a standard format for customers to access energy usage data online. The button allows customers to download their hourly usage information in an easy-to-use format.

The standardized data format also encourages third-party developers to create innovative "apps" to maximize the full potential of this information. PG&E joined with the U.S. Department of Energy and Itron Inc. in 2012 to sponsor a \$100,000 competition to develop the best Web or mobile apps using the Green Button. This voluntary program is now being adopted widely across the country. As companies continue to implement the Green Button, more than 36 million customers nationally will have access to this tool.

PG&E customers can also share and compare their energy use data with friends on Facebook, using a new social energy application. The app, created by Opower in partnership with Facebook and the Natural Resources Defense Council, provides insight into individual energy use while fostering friendly energy-savings competition among participants. PG&E also provides customers with customized information and energy savings advice through our *My Energy* website and our *Home Energy Reports*. These tools allow customers to better analyze their energy usage and compare their energy use with similar homes in their area.

Comprehensive Energy Solutions for Our Customers

In addition to providing better information, we provide customers with incentives for comprehensive energy-saving improvements. Programs like Energy Upgrade California offer a suite of incentives that encourage combining multiple improvements at once to increase a home's overall energy productivity and achieve greater savings. As part of this California-wide effort, PG&E launched its Whole House Program in 2010. The effort includes extensive outreach to homeowners and training for contractors at our Energy Training Center in Stockton. This program helped facilitate improvements in nearly 1,000 homes in our service area last year.

For large business customers, we provide an energy management analytics and planning tool that enables them to determine the best mix of our products and services to maximize efficiency benefits. We can show customers how their facilities' energy use compares with one another and with industry benchmarks. We also will be providing an online survey tool for small and medium-sized businesses that identifies their largest end uses of energy and recommends comprehensive energy-saving and productivity opportunities.

Working with the Federal Government

In addition to residential and business customers, we work closely with federal agencies to help them meet their energy goals. For example, PG&E manages energy efficiency turn-key projects for federal customers through our Utility Energy Services Contract (UESC) program, which

enables federal customers to partner with PG&E's team of efficiency experts. PG&E is currently completing a project for the NASA Ames Research Center, near Mountain View, California. The project encompasses more than 100 buildings and covers more than 2.5 million square feet. As a result, NASA will save nine gigawatt-hours of electricity, 1.3 million therms of natural gas and more than 15 million gallons of water annually, representing an 11 percent reduction in annual energy intensity (BTU per square foot) and a 25 percent reduction in annual water consumption. The Center will also save more than \$1.5 million annually in water and energy costs.

According to the Federal Energy Management Program, UESC projects are saving taxpayers roughly \$400 million a year, nationally. Since 1994, almost 1,700 UESCs have been awarded, worth more than \$2.3 billion, and saving more than 14 trillion BTUs. Given this track record, and their critical role in helping government continue to cost-effectively increase its energy productivity, renewable energy and energy security goals, we believe the use of UESCs should be encouraged.

Training and Preparing for the Future

One of the keys to successfully implementing our energy efficiency programs is equipping professionals with the skills and training to support these efforts. Architects, engineers, designers and technicians are among those who all play a significant role. To develop this expertise, PG&E runs hands-on training and educational programs and facilities. For example, our Pacific Energy Center (PEC) hosts courses on energy efficiency, demand response and renewable energy. Since 2006, the PEC has provided more than 920 unique courses, 950 technical consultations and 600 outreach events. Last year alone, the center hosted about 8,000 students.

The PEC is one of three PG&E centers devoted to promoting energy-efficient building design and practices. PG&E also has a center in Stockton for residential buildings and one in San Ramon that focuses on restaurants and the food industry. PG&E's Energy Training Center in Stockton is the nation's longest continuously operating weatherization training center. Since

1978, the center has trained more than 91,000 participants who, in turn, have performed energy audits, weatherization or home performance services for more than 2 million Californians.

We also partner with others on education. For example, California requires that all new residential and commercial buildings be zero net energy (ZNE) by 2020 and 2030, respectively. As a step toward this goal, PG&E-sponsored an architectural design competition to demonstrate the potential for ZNE residential construction. We also constructed a model ZNE home at our Stockton training center, offering a hands-on experience to professionals working in the field.

Shaving the Peak, Saving Money and Using Resources More Wisely

Demand response programs provide an effective way to address periods of high energy demand and short supply, by encouraging customers to reduce or shift their energy use on days when demand is at its highest. Overall, customer participation in PG&E's demand response programs avoided the purchase of 575 MW of power generation capacity in 2011. These programs also enable utilities to avoid the costs and environmental impacts of building and maintaining additional power plants that would only be needed for relatively few hours per year, saving money for all our customers.

PG&E's demand response programs range from SmartAC™, which cycles residential air conditioning units on and off, to PG&E's Automated Demand Response program, or "AutoDR," which enables customers to automatically reduce their energy use when they receive an electronic signal from PG&E. Since 2005, PG&E has successfully demonstrated the program with a small group of customers. PG&E led the development of the Open Automated Demand Response 2.0 (OpenADR) standard, drawing on our years of work with Lawrence Berkeley National Lab. In 2011, the National Institute of Standards and Technology ratified the standard, which provides a common language for the energy industry to use for sending AutoDR signals.

Supportive Regulatory Structures and Policies Matter

While technology and innovation play significant roles in advancing energy efficiency and demand response efforts, they have been bolstered by a suite of state and federal policies. These include supportive tax policies; support for research, training, development and deployment; supportive regulatory and rate structures; codes and standards; and federal and state programs that educate consumers and provide an opportunity for companies to share information and best practices.

For example, in California, the state has prioritized energy efficiency and views it as an energy resource, similar to generation. Policymakers have established a “loading order” of preferred energy sources that emphasizes expanding customer energy efficiency and demand-side management programs before adding new generation.

Other policies that have helped us and the state achieve aggressive efficiency goals, include:

- *Aligning incentives.* Many rate designs create financial disincentives for utilities to promote energy efficiency. California’s model of “decoupling” removes these disincentives: utility revenues and earnings are independent of actual energy sales volumes. Decoupling eliminates the financial incentives to sell ever-increasing amounts of energy (i.e., the financial incentives are “coupled” with growth in power sales). The state’s utilities collect no more and no less than the revenues necessary to run their business and provide a fair return to shareholders. If sales rise above these levels, the extra revenues go back to customers, rather than to the bottom line of the company; if sales fall below intended levels, utilities are assured they can recover the shortfall going forward. Energy efficiency goals can be achieved even more effectively if decoupling is combined with incentives that help motivate utilities to promote and embrace energy efficiency and put it on par with similar investment opportunities, such as building new generating facilities. California pioneered such incentives in the 1990’s and adopted a system whereby utilities’ shareholders can benefit if the company delivers real energy savings to customers.

- *Establishing a consistent regulatory environment.* California's current cycle for energy efficiency program development and investment is three years. Program continuity is important to all of the industry players, including the utilities, large and small technology and services companies, non-profits, and governmental entities. Providing a three-year energy savings target and funding for this time period enables us to engage with customers on high-value efforts that have longer lead-times. Customers are assured that the incentives will be available, even though efficiency measures may take several years to complete. These multi-year program cycles also allow us to work with manufacturers and distributors of energy efficient products and equipment, because we can make multi-year commitments to support commercialization and deployment efforts.
- *Developing evaluation, monitoring and verification (EM&V) programs to track and account for these savings.* California is continuing to refine EM&V methodologies to be transparent, consistent and understandable, which will further acceptance of energy efficiency investments by customers and utility shareholders and allow programs to be even more effective and target the highest value savings.
- *Encouraging public-private partnerships.* California's success with energy efficiency is the result of cooperation at all levels. For example, PG&E has partnered with local governments to help them reduce energy usage, create jobs, save money, achieve environmental goals and provide other community benefits. Through our Innovator Pilots Program, we are helping communities test new ways to achieve deeper energy savings. The program provides funding to local, regional and sub-regional governments to support innovative approaches to energy efficiency.
- *Establishing building codes and appliance standards.* Approximately half of the energy savings achieved over the past three decades in California are the result of the state's aggressive building codes and energy efficiency standards for end-use equipment and appliances. Codes and standards provide the foundation for all other energy efficiency efforts and drive new technologies, programs and practices. PG&E has dedicated

employees that support the efforts of the California Energy Commission (CEC), the U.S. Environmental Protection Agency's EnergyStar Program and others through our Codes and Standards Enhancement program. For example, PG&E actively supported an efficiency standard for battery charger systems that was adopted by the CEC in 2012. There are an estimated 170 million chargers in California households. Once fully implemented, California customers will save more than \$300 million annually and eliminate one million metric tons of GHG emissions.

Legislative and Agency Actions

Congress has debated and passed multiple bills over the past several years that incorporate some of these policy recommendations. For example, at the end of last session, Congress extended many expiring energy efficiency tax credits until the end of 2013, including those related to home improvements and equipment upgrades. It also passed H.R. 6582, a bill focused on boosting energy efficiency in the federal government and other areas, such as the industrial sector and through appliance standards. We appreciate the instrumental role that many members of this Committee had in creating and passing these bills.

In addition to the bills that passed, last Congress Representatives McKinley and Welch introduced the "HOMES Act," which focused on home energy retrofits. And, earlier this month, in the 113th Congress, Representative Eshoo, along with Representative Mike Rogers, introduced the "Energy Efficient Government Technology Act," which seeks to make energy improvements to federal data centers. In each case, we believe these bipartisan bills provide the direction needed to continue to create incentives and establish new effective policies. As the Committee considers bills such as these or others that may be introduced, we ask that it recognize the important role that utilities and UESCs play in ensuring that efforts track with existing state energy efficiency programs and leverage the unique knowledge, expertise and capabilities that utilities have developed through many years of experience implementing successful initiatives.

I would also like to express my support and thanks to Congressmen Gardner and Welch for leading the creation of the bipartisan Energy Savings Performance Caucus. Clearly, Mr. Chairman, their efforts along with the bills referenced above, display the wide-ranging interest to advance thoughtful, bipartisan approaches to increasing our nation's energy productivity and leveraging energy efficiency as a resource.

We are also encouraged by the Administration's continued focus on this topic, through efforts like Better Buildings, Green Button, the continued work of EnergyStar and the proposed "Race for the Top" grants announced during President Obama's State of the Union address. PG&E is proud to serve as an "Utility Ally" of the Better Buildings program and has long worked collaboratively with EnergyStar and its offshoots. Programs such as these encourage innovation and collaboration, advance best practices and educate the public on the energy gains that could be made – helping average Americans save money and making businesses more competitive.

Finally, we appreciate the work and recommendations of the Alliance Commission on National Energy Efficiency Policy. The Commission's Energy 2030 Report findings underscore the energy productivity gains that could be made with existing technologies. The report, which resulted from a broad-based collaborative effort, also provides a number of recommendations for federal policies the Committee might consider pursuing. We also want to commend the Business Council for Sustainable Energy, of which PG&E is a member, and Bloomberg New Energy Finance for their work in creating the Sustainable Energy America 2013 Factbook. It is an excellent resource for straightforward and quantitative information on sustainable energy markets, trends and investments.

The Time Is Now

As PG&E and California have demonstrated, energy efficiency can help save money, spur innovation, provide consumers with more choices, make our economy more productive and benefit the environment. While there has been tremendous progress nationally over the last several decades, there are significant opportunities to do more. Making cost-effective energy improvements to existing federal and commercial buildings, while setting attainable energy

standards for building codes, materials and appliances will reduce pollution, allow consumers to better manage energy costs, advance new technologies and make our country more globally competitive. As Congress moves forward on this issue, it is important to recognize the critical role that utilities have played and will continue to play in the successful design and implementation of these efforts.

On behalf of PG&E, thank you for the opportunity provided today. I appreciate the commitment of this Committee to advancing energy efficiency as a priority resource and recognizing its tremendous value to enhancing America's energy security and economic competitiveness.

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