UNITED STATES DEPARTMENT OF ENERGY

In the Matter of Implementing the National Broadband Plan by Empowering Consumers And the Smart Grid: Data Access, Third Party Use, and Privacy	)))))	DOE-HQ-2009-0003-0818 (Noticed May 11, 2010)

Comments of San Diego Gas & Electric Company

San Diego Gas & Electric Company ("SDG&E") submits these comments in response to the above-enumerated Request for Information noticed by the Department on May 11, 2010. SDG&E is a regulated electric and gas utility operating pursuant to authorities granted to it by the Federal Energy Regulatory Commission and the State of California. SDG&E serves 3.4 million consumers in the San Diego and southern Orange County areas of California via 1.4 million electric meters and 830,000 gas meters. SDG&E's sister company, the Southern California Gas Company, is the nation's largest gas-distribution utility, serving another 20.3 million consumers in a 20,000 square-mile area via 5.7 million gas meters.[1]

I. Introduction

SDG&E is among the companies leading the electricity industry in the development of operational and customer-service strategies enabled by the deployment of smart grid technologies and has launched ambitious and wide-ranging plans to deploy those technologies. As SDG&E has developed these strategies, designed its smart grid architecture and system platforms, and implemented its deployment plans, we have contributed substantial resources and leadership to the host of efforts, whether organized and supervised by public agencies, standards-development organizations, or the involved and affected industrial sectors, that are paving the way for the immediate deployment of smart grid technologies and applications which in turn will promote the

[1] SDG&E and Southern California Gas Company are wholly owned subsidiaries of Sempra Energy, a Fortune 500 holding company headquartered in San Diego, California. Together, the two companies comprise the Sempra Energy Utilities, a division of Sempra Energy. The Sempra Energy Utilities have been participating in the various proceedings and information-gathering processes of the Federal Energy Regulatory Commission, the Federal Communications Commission and the Department related to the definition, development and deployment of the national smart grid. SDG&E, rather than the Sempra Energy Utilities, files these comments due to the Department's focus here on smart grid issues as they relate to the domestic electricity industry.

vital national objectives recognized by the Department in its Request for Information. SDG&E submitted extensive comments to the Federal Communications Commission as that agency considered the terms and parameters of its National Broadband Plan and the effect of those terms and parameters on the electric-power industry. In several respects, our Comments repeat the information provided to that Commission, but augment that information with the additional and specific information requested in the Department's Notice.

Generally, the following comments describe SDG&E's current and expected practices and principles governing the protection of a customer's information. California has long had rules in place requiring such information to be protected – there are both statewide rules applied in every business-customer context and more industry-specific rules applicable to the regulated utilities. In the context of smart meters and other smart grid functionalities, the California Public Utilities Commission has adopted special rules for the customer-owned information generated in the utility context and continues to conduct ongoing public proceedings to consider additional rules that may serve the public interest as the state proceeds to its smart energy future. SDG&E urges the Department to consider the California privacy rules as a model for any regulatory framework it might adopt, but in any case to permit the states, which historically have governed the utility-customer relationship in the energy-utility industry, to adopt and apply those rules most appropriate to the character of those relationships within their jurisdictions.

II. Responses to the Questions Posed by the Department

Our comments are organized according to the questions enumerated in the Department's Notice. In the instant Notice, the Department acknowledges that other federal agencies will have expertise and jurisdiction with respect to many of the matters and issues described in the Department's Notice. Similarly, the Department should keep in mind that many state agencies and regulators also have jurisdiction over and considerable expertise in these same matters and issues. As the Department well knows, there is an extensive, well-established, state-based regulatory scheme governing the domestic electricity industry, and many states, California among them, have been actively considering issues related to the development of the smart grid and the deployment of the technologies and applications that make up its moving parts. Evident throughout these comments is that SDG&E's smart grid programs are subject to the laws, regulations and oversight of the State of California and its various agencies. Thus, in many

respects, California and its regulated electric utilities, including SDG&E, have already addressed issues related to the privacy and security of consumer information and SDG&E respectfully requests that, as the federal government considers the policy and regulatory framework affecting the smart grid, the Department and other federal agencies take into careful consideration the emerging state regulatory schemes under which the electric-power industry is proceeding in the development, deployment and operation of smart grid strategies. To do otherwise could create jurisdictional conflict and confusion that might disrupt innovation and progress needlessly and thwart the delivery of the benefits the smart grid has to offer to the nation.

(1) Who owns energy consumption data?

Under longstanding California law and certain regulations of the California Public Utilities Commission ("the California Commission"), individual consumers own their unique energy-consumption data[2] and accordingly possess all meaningful rights of ownership with respect to that data. Third parties generally hold no entitlements to receive this information and California utilities are generally prohibited from disclosing an individual customer's consumption data to them in the absence of the prior, *written* authorization of the customer. This basic policy has been unchanged by SDG&E's program to install over two million smart meters in its service territory. These smart meters record and report residential electricity consumption on an hourly basis and commercial and industrial consumption at fifteen-minute intervals, providing more granular consumption data for each customer's usage patterns. Consistent with the preexisting California regulatory scheme, SDG&E only collects and processes these data, serving as the custodian of the customer's consumption information and protecting it from disclosure except in those circumstances where the customer authorizes the disclosure.[3]

[2] There is an important distinction to keep in mind here, namely, that "customer-owned usage data and information" includes a limited set of information rather than all customer-specific information possessed by an electric utility. Essentially, "customer-owned information" generally includes only "raw" metered usage data, but does not include the "processed data" which encompasses the validated, edited and/or estimated information that is then translated into a utility's billing determinants to produce a utility bill. This processed data is owned by the processing utility. As would be the case with customer-owned information, processed usage information is held in confidence and is subject to the privacy protections described in these comments. Notably, however, this information would not be disclosed to any third party, even when the customer consents to the disclosure of customer-owned usage information.

[3] See Note 2, above. Consistent with the distinction described previously, the authorization to permit disclosure of the customer's usage data is limited to customer-owned data and would not result in the disclosure of SDG&E-owned and –processed billing data to any third party.

(2) Who should be entitled to privacy protections relating to energy information?

As noted above, California law and regulations provide that each energy customer has an entitlement to the privacy of its energy-consumption data. These entitlements are founded upon the general rights afforded to California citizens under the state constitution.[4] Pursuant to these general rights, the California Legislature has enacted a number of measures specifically protecting the privacy of customer information held by the regulated utilities. The state Public Utilities Act requires that the California Commission set and supervise minimum standards governing the confidentiality of customer-specific information obtained by electric service providers, including information related to usage data, usage history, billings, or the credit status of any specific customer.[5] Among these standards is the proviso that customer information shall be kept confidential, unless the customer consents *in writing* to a disclosure.[6]

Also, California's commercial and industrial consumers have generally laid claims to the privacy of their consumption data based upon additional trade-secret and property protections, allowing them to conceal information that might afford their competitors some insight into, as examples, their production schedules and hours of operation. This comports with other provisions of California law protecting commercial and industrial firms from competitive harms and disadvantage that might arise from unauthorized access to or theft of information sensitive to those firms' business interests.

(3) What, if any, privacy practices should be implemented in protecting energy information?

As noted previously, the State of California long ago implemented privacy practices protecting a customer's energy information. SDG&E observes those practices under the aegis of the regulations adopted and enforced by the California Commission. SDG&E recommends that the

[4] Article 1 of the California State Constitution explicitly recognizes a citizen's right to privacy, providing, "All people are by nature free and independent and have inalienable rights. Among these are enjoying and defending life and liberty, acquiring, possessing, and protecting property, and pursuing and obtaining safety, happiness and privacy."

[5] See Section 394.4 of the California Public Utilities Code. State law provides that electric utilities may disclose generic and/or aggregated information regarding the usage, load shape or general characteristics of a group of customers or customers within a rate classification, but even here utilities may not release that information if the disclosure would reveal customer-specific information, *e.g.*, where the size of the group or rate classification is so small as to permit a customer-specific interpolation of aggregated data or the nature of the information itself would reveal customer-specific information. Electric utilities may be compelled, however, to produce information under warrant, subpoena or orders issued by a competent jurisdiction. See California Public Utilities Code Section 2894.

[6] *Ibid.*

Department, in considering whether to adopt its own privacy policies or guidelines applicable to customer-specific energy information, endorse the rules previously adopted by the State of California, or at least make provision for allowing state practices, where previously implemented and no less restrictive than any federal policies or guidelines, to remain in place. California's policies work well to protect consumers and their energy information and the advent of smart meter and smart grid technologies and applications do not, by themselves, portend any need to adopt different rules or standards. Because these state policies have been in place for some time, they are well-understood and relied upon by California energy consumers, utility customers and industry participants. The California Commission has continued its proceedings related to the privacy principles and practices that should be observed for information generated by the smart meters California utilities are deploying so as to assure that the details of these principles and practices address new issues, concerns and nuances that may be discovered as the advanced metering infrastructure program matures. SDG&E is ready to abide by any and all state and federal laws and regulations designed to protect the privacy of its customers and their energy data.

(4) Should consumers be able to opt in/opt out of smart meter deployment or have control over what information is shared with utilities or third parties?

In 2002, California initiated a statewide effort to deploy Advanced Metering Infrastructure (AMI) for the state's three principal investor-owned electric utilities, SDG&E, Southern California Edison Company and Pacific Gas & Electric Company. The ultimate goal of the program is to provide consumers with a greater understanding of their energy usage and encourage them to exercise control over their usage habits. Pursuant to this effort, the California Commission authorized the three utilities to replace their existing conventional customer meters with communication-enabled "smart" meters. Smart meters enable an electric utility to provide customers with detailed information about their energy usage at different times of the day, which in turn enables customers to manage their energy use more proactively and effectively. Under the California program, the three utilities are installing some 11.7 million electric smart meters.

SDG&E's AMI deployment plan was approved by the California Commission in 2007.[7] SDG&E has since proceeded with the installation of 1.4 million electric smart meters, a project that will be substantially complete by the end of 2011. Because the deployment of AMI is a statewide program serving and facilitating important, overarching state energy policies, consumers were not and are not permitted to "opt out" of the program, although it should be noted that the public rulemaking processes observed by the California Commission both in adopting the AMI policy and approving the utilities' deployment plans and programs were subject to extensive public comment and review.[8] The California Commission rightly concluded that universal deployment of advanced metering would support the ubiquity of scalable benefits that could be derived from the installation of AMI infrastructure.

While California consumers are not permitted to opt out of the deployment of smart meters, they continue to possess full control over the privacy of their energy information, including the usage data and histories recorded and reported by their newly installed smart meters. SDG&E is the custodian of this information and, under California law and regulations, will not disclose it to any third party in the absence of the written authorization of the customer. SDG&E expects to continue this practice and again urges the Department to leave these California privacy protections in place.

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[7] The criteria the California Commission imposed on the SDG&E deployment plan indicate the expansive set of state policies being achieved through the AMI program. The smart meters deployed by SDG&E are required to have the following capabilities and functionalities:

- Must be capable of supporting various price responsive tariffs (Critical Peak Pricing, Time of Use, Real-Time Pricing);
- Must be capable of collecting energy-usage data at a level that supports customer understanding of hourly usage patterns and the relation of these patterns to energy costs;
- Must be capable of allowing access to personal energy-usage data such that customer access frequency did not result in additional AMI system hardware cost;
- Must be compatible with applications that provide customer education and energy-management information, customized billing, and complaint resolution;
- Must be compatible with utility system applications that promote and enhance system operating efficiency and improved service reliability; and,
- Must be capable of interfacing with load-control communication technology.

See *Re Application of San Diego Gas & Electric Company for Adoption of an Advanced Metering Infrastructure Deployment Scenario and Associated Cost Recovery and Rate Design,* Decision 07-04-043 in Docket A.05-03-015 (Cal.Pub.Util.Comm., 2007).

[8] As the California Commission noted in its order implementing its AMI program, the provision of public notice, the making of findings and determinations in writing, and the consideration of evidence relevant to its orders were accomplished pursuant to the Commission's generally applicable rules of practice and procedure as well as the requirements of the Energy Information and Security Act of 2007. See *Rulemaking to Consider Smart Grid Technologies Pursuant to Federal Legislation and on the Commission's Own Motion to Actively Guide Policy in California's Development of a Smart Grid System,* Decision 09-12-046 in Docket R.08-12-009, at p.19 (Cal.Pub.Util.Comm., 2009).

(5) What mechanisms should be made available to consumers to report concerns or problems with the smart meters?

While SDG&E and its selected technology vendors strive to meet exceptionally high standards for the deployment and operation of smart meters, SDG&E recognizes, as does the Department, that problems and concerns can arise in the adoption of new technologies. In order to provide customer-friendly mechanisms where a customer's problems or concerns can be reported to us directly, SDG&E offers electronic-mail updates on the progress of its smart meter deployment program. Using this dedicated program electronic-mail address, SDG&E's customers are able to ask questions and report problems or complaints. In addition, SDG&E has encouraged customers to raise their questions or report problems and complaints directly to SDG&E customer service representatives.

Where a customer has questions that cannot be resolved by customer service representatives, the customer is transferred to or contacted by a customer service representative who has been trained specifically to address matters related to smart meter deployment and the AMI program. If these specially trained customer service representatives cannot fully address a customer's concerns or questions, SDG&E's project managers in the Smart Meter Customer Experience and Stakeholders Education Team, whose primary role is to improve the smart meter experience for the customer, are available to resolve those concerns and questions. SDG&E's customers are also able to report concerns and problems with the deployment of smart meters in various public forums, for example, at city council meetings, town hall meetings, and other public gatherings and presentations, where SDG&E's project managers are available to hear and address customer concerns and questions.

In addition to the outreach programs implemented and managed by the state's investor-owned utilities, the State of California also offers several options under which customers may register complaints related to the deployment of smart meters. Customers can contact the consumer affairs agents of the California Commission. The Commission has created an online, simple-to-use form that consumers can file to register complaints about utility services that cannot be resolved with utility representatives. In addition, customers can contact the separate California Consumer Affairs Agency, a consumer-protection agency with more general authorities, to report their complaints.

Under the direction and supervision of the California Commission, the state's three investor-owned utilities are establishing benchmarks and defining common metrics for measuring various aspects of utility performance related to the smart meter program. Among these metrics are reporting protocols related to customer concerns regarding the timeliness of bills, metered consumption and possible metering errors, the number of visits to smart meter websites and online data, and consumer complaints.[9] These and other metrics are being designed with an emphasis on revealing potential consumer impacts and customer response during the deployment and initial operational phases of smart meters and identifying programmatic issues that should be addressed. Measuring performance and meeting benchmark standards are expected to assure continuous improvement as well as consistency in reporting industry performance related to the AMI program.

SDG&E submits that this multi-tiered approach involving direct access to the implementing utility and indirect access through third-party governmental agencies via a variety of paths (*e.g.*, electronic, telephonic, individual and group personal contacts) encourages customer reporting of complaints and concerns by allowing individual consumers to choose whatever means of communications is most comfortable to them or most appropriate for the situation. Equally important, this exposes the aspects of the AMI program that require SDG&E's attention and improvement so as to maintain overall service quality and customer satisfaction.

(6) How do policies and practices address the needs of different communities, especially low-income ratepayers or consumers with low literacy or limited access to broadband technologies?

SDG&E agrees with the Department that special emphasis and consideration must be placed on assuring that the energy needs of different communities, especially low-income customers or customers of low literacy or with limited access to broadband technologies, are addressed and met. In this regard, SDG&E has a variety of existing rates and programs targeting low-income and special-needs customers. We fully expect to leverage those existing rates and programs in making access to home-to-grid technologies easy and installation simple for special customer groups.

[9] As an example of the information being collected, claims or complaints have been filed regarding 0.15 percent of the over one million smart meters thus far installed in the SDG&E service territory.

SDG&E is committed to contributing to the array of customer choices made available as a result of the development of Internet, wireless, telecommunications, and clean-energy technologies. The smart meter provides electric utilities with the means by which to provide basic energy-usage information. Studies have shown that this type of information feedback leads to customer behavioral changes, in turn leading to energy conservation. This information should provide low-income customers, as is the case for all consumers, with a higher level of awareness of their usage patterns. In order to assure that this information is available to the low-income consumer or consumers of limited literacy or with limited access to broadband technologies, SDG&E is creating special programs to address the needs of these customers. As one example, through a partnership with a local government, the SDG&E Smart Meter Team teaches city librarians to assist these customers in accessing their utility data online using publicly supported computers and Internet access. Librarians are trained to help customers set up their SDG&E "My Account" services, online bill-payment applications, and establish "iGoogle"[10] accounts, a customizable online homepage offered by Google. Once these accounts are established, through a joint SDG&E-Google effort SDG&E's customers are able to set up a "Google PowerMeter" application on their iGoogle account that displays the hourly electricity consumption data produced by their smart meters. This information educates consumers how they use energy, how to use energy more efficiently, and/or how to practice energy conservation.

The Federal Communications Commission identified a series of recommendations aimed at improving the availability, accessibility, and ubiquity of broadband services as part of its National Broadband Plan. Assuming those recommendations are implemented, SDG&E urges the Department, as part of its ongoing collaboration with that agency, to find and seize upon opportunities to dovetail its objective of assuring universally available benefits from smart grid deployments with the Federal Communications Commission's objective of achieving universal availability of broadband services. As the commission noted in the National Broadband Plan, a series of grants and awards could be used to address the gaps in the national availability of broadband services. SDG&E suggests the Department could dedicate some part of its own awards and grants programs to assure that among the uses communities with special needs have available to them via broadband services are those related to energy services. This is but one

[10] "iGoogle" is a personalized Web portal page that users customize with "Google gadgets" such as local weather, stock prices, local movie times, favorite media outlets, and other user-preferred content.

form of the cooperative, integrated approaches to broadband and energy services the two agencies could take and SDG&E would be happy to consult with the agencies to develop additional strategies to reach and benefit disadvantaged communities.

(7) Which, if any, international, Federal, or State data-privacy standards are most relevant to Smart grid development, deployment, and implementation?

As noted previously in our response to Question 3, California law and regulations provide general and specific guidance relevant to the privacy protections afforded to the state's consumers and their energy information. To reiterate, the State requires that regulated utilities maintain the confidentiality of all customer-specific information, including usage data, usage history and billing information, and protect such information from unauthorized disclosure. The authority to permit disclosures resides in the customer, who must knowingly consent to any disclosures in writing and prior to any disclosures.

(8) Which of the potentially relevant data privacy standards are best suited to provide a framework that will provide opportunities to experiment, rewards for successful innovators, and flexible protections that can accommodate widely varying reasonable consumer expectations?

The "Smart Grid Cyber Security Strategy" prepared by the Cybersecurity Working Group of the Smart Grid Interoperability Panel and published by the National Institute of Standards and Technology (NIST) provides a reasonable and well-vetted framework for data privacy standards. In addressing the privacy concerns related to smart grid applications and operations, NIST noted that,

> "[S]mart-grid technologies and associated new types of information related to individuals and premises may create privacy risk and challenges that are not addressed or mitigated by existing laws and regulations with regard to energy consumption, billing and other related Smart Grid data. … New Smart Grid technologies, and particularly smart meters and similar types of endpoints, may also create new privacy risks and concerns beyond the existing practices and policies of the organizations that have been historically responsible for protecting energy consumption data collected from the traditional electrical grid. … Utilities and third party Smart Grid providers need to follow recognized privacy practices to effectively safeguard Smart Grid personal information and customer privacy."[11]

[11] See, *Guidelines for Smart Grid Cyber Security: Vol. 1, Smart Grid Cyber Security Strategy"*, Report of the Cyber Security Working Group of the Smart Grid Interoperability Panel, National Institute of Standards and Technology, Draft Interagency Report 7628, July 2010, at p.54.

Based on these concerns, NIST recommends that organizations implementing smart grid technologies adopt privacy policies and practices addressing ten privacy principles: management and accountability; notice and purpose; choice and consent; collection and scope; use and retention; individual access; disclosure and limitations; security and safeguards; accuracy and quality; and, openness, monitoring and compliance.[12]

SDG&E agrees with NIST with respect to the urgency of addressing the challenges of maintaining the privacy of a consumer's energy-related information and supports the ten principles and privacy practices identified by NIST. The virtual synonymity between the NIST principles and the privacy principles recommended and adopted by the OECD, the AICPA and the Department of Homeland Security indicate that the NIST principles and practices address and follow universally accepted norms and best practices in this area. These principles are also consistent with the standards and practices that have already been adopted by several states, including those standards and practices adopted by the State of California described in our responses to Questions 3 and 7 above.

(9) Because access and privacy are complementary goods, consumers are likely to have widely varying preferences about how closely they want to control and monitor third-party access to their energy information: what mechanisms exist that would empower consumers to make a range of reasonable choices when balancing the potential benefits and detriments of both privacy and access?

SDG&E agrees with the Department that consumers are likely to have widely varying preferences regarding third-party access to their energy information. SDG&E has previously described the California legal framework that invests each consumer with full control over the

[12] *Id.,* at pp.31-37. In developing the potential effects smart grid applications might have on privacy concerns, NIST considered similar principles and privacy practices recommended and published by the Organisation for Economic Co-Operation and Development ("OECD") (see the fourteen principles identified and addressed in the "OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data"), accessible using the following web address: http://www.oecd.org/document/18/0,3343,en_2649_34255_1815186_1_1_1_1,00.html); and, the American Institute of CPAs ("AICPA") (see the ten privacy principles identified in the organization's August 31,2009, publication of *"Generally Accepted Privacy Principles*", accessible using the following web address: http://www.aicpa.org/InterestAreas/InformationTechnology/Resources/Privacy/GenerallyAcceptedPrivacyPrinciples/Pages/default.aspx). There are similar principles and practices described in the "*Privacy Policy Guidance Memorandum"* published by the Department of Homeland Security's Privacy Office (Memorandum No. 2008-01), on December 29, 2008, governing that department's internal practices and procedures, accessible using the following web address: http://www.dhs.gov/xlibrary/assets/privacy/privacy_policyguide_2008-01.pdf.

protection or disclosure of the consumer's unique energy information. This framework enables each consumer to make the choice between access and privacy as the consumer sees fit, wholly suiting the final decision to the consumer's interests in any given situation using whatever balance of salient benefits and detriments the consumer finds most compelling. SDG&E submits that this regime has suited the citizens of the State of California and should be continued for the foreseeable future, but can be revisited if any superior countervailing or supervening interest arises in the future.

(10) What security architecture provisions should be built into Smart Grid technologies to protect consumer privacy?

"Perfect security" is the ideal goal for protecting information, but as unrelenting security attacks by well-funded and organized cyber-threats continue to occur, prudence requires that the energy industries and constituencies and governmental authorities fully appreciate and recognize that any security measure bears some risk of circumvention. To address and minimize these risks, continuing investments in cybersecurity programs are necessary to prevent current threats from materializing and to anticipate, deter and defeat future cybersecurity threats. Cybersecurity risks are not a new problem to SDG&E, and SDG&E relies upon a combination of existing approaches and a continuous and consistent effort to manage the risk presented by new threats. To this end, SDG&E advocates and practices a proactive and preventive security approach which programmatically addresses architectural, design, engineering, comprehensive testing, and operational monitoring and maintenance stages of the cybersecurity lifecycle.

As we consider the measures needed to address the threats posed by cyber attacks, SDG&E balances the effects of these attacks against the need to assure customer access to their data. Simply stated, the asset value of information is based on the importance given it by its owner – and not all information has the same value. Thus, SDG&E takes security measures commensurate with the asset value of the information being protected. Determining an information asset's value requires operating with a framework that categorizes information according to its importance. Classification of information in terms of its relative value is an important step in managing risk because it provides decisionmakers the guidance they need to direct appropriate levels of resources to secure information assets and protect the privacy of consumers. SDG&E's general practice is to classify information into one of four groups: public, internal, confidential or

restricted. As indicated by the taxonomy, greater care and resources are committed to protecting confidential and restricted information. Customer information and usage data are classified as "confidential" and subject to the protections and security measures commensurate with that classification.

In terms of who holds the responsibility to protect consumer information, SDG&E begins with the presumption that, when a consumer's information resides on a utility's physical asset (*e.g.*, the utility's data servers or is transferred using the utility's communications network), SDG&E is the custodian and guardian responsible for the protection and security of the consumer's information. Conversely, if the information resides in a customer asset, then SDG&E presumes it is the customer who is responsible for the protection of the information. During the transmission of information between SDG&E and its customers or vice versa, however, the security and protection responsibilities of the sender and receiver are less than clear. While SDG&E does not believe that the utility must own all network smart devices, connection of non-utility devices to the smart grid should require some form of notice and registration with the utility so as to ensure the security of the utility's network and the integrated and coordinated operation of interconnected devices in a manner compatible with the utility's security measures. This would respect the utility's expectations that its responsibilities for securing its facilities and protecting its customers' interests and information coincide with, and do not extend beyond, the products and services the utility provides to its customers. For electric delivery from the smart grid and via a smart meter, the utility's responsibility ends at the load side of the meter. Where the utility provides in-home products and services, security responsibilities should be assigned according to the terms of the offering, products and services and the various types of security-related information or sensitivities involved, and, with respect to the utility's responsibilities, should be limited to security concerns that can be taken using measures under the full and effective control of the utility. In short, SDG&E believes that traditional and existing electrical industry demarcation points should be preserved, but SDG&E recommends the development of supplementary lines of functional demarcation with regard to emerging technologies and services at this nascent stage of the smart grid information age.

(11) How can DOE best implement its mission and duties in the Smart Grid while respecting the jurisdiction and expertise of other Federal entities, states and localities?

SDG&E believes that the Department has a critical role to play in the successful development and national deployment of smart grid technologies. First and foremost, the Department should assume responsibility for forging the vision and guidelines that will shape the architecture of the national smart grid. Within these guidelines, the establishment of standards is extremely critical to achieve interoperability among the different technologies considered in smart grid strategies. The National Institute of Standards and Technology, in accordance with its responsibilities under the Energy Independence and Security Act of 2007, is well along in the development of a framework that includes protocols and model standards for information management to achieve interoperability of smart grid devices and systems."[13] With this federal guidance, the states should then be left to implement the national vision and federal technical standards according to the specific needs and interests of each state. It is important to point out that the implementation of smart grid technologies will be based on the different and salient energy policies and characteristics of each state. These characteristics include, but are not limited to, state and local policies related to the integration of renewable energy and distributed energy resources, the development of electric vehicles, environmental regulations, and the degree to which advanced metering infrastructure and other smart grid technologies have been or will be deployed in the state or local area.

Additionally, SDG&E urges the Department to work collaboratively and cooperatively with other federal and state agencies with jurisdictional authorities and interests in the smart grid. As SDG&E has noted in other forums, regulatory or jurisdictional conflicts among federal agencies or between federal and state agencies would only serve to delay or even confound the deployment of smart grid technologies by creating regulatory risk for industry. These conflicts must be avoided. By setting the vision for the smart grid, and perhaps even providing incentives for the deployment of those technologies and applications most consistent with its vision, the Department can guide the shape and implementation of the national smart grid without intruding on the activities of other federal agencies or the states.

[13] See *Energy Independence and Security Act of 2007*, Title 13 (Smart Grid), Section 1305; P.L. 110-140 (2007).

(12) When, and through what mechanisms, should authorized agents of Federal, State, or local governments gain access to energy consumption data?

As noted previously, California law requires the state's energy utilities to protect a customer's energy-related information unless the customer consents to its disclosure in writing. Notwithstanding this first principle, California utilities are required to disclose a customer's energy-related information where disclosure is compelled under warrant, subpoena or orders issued under color of law. SDG&E submits that the extraordinary interests of authorized federal, state or local agents, acting under color of law and pursuant to due process, supersede the ordinary privacy interests of a customer and should be respected. SDG&E generally does not defend the personal interests of its customers in this context and would leave it to the customer's election to do so pursuant to the processes and procedures relevant to the warrant, subpoena or order served upon SDG&E.

(13) What third parties, if any, should have access to energy information? How should interested third-parties be able to gain access to energy consumption data, and what standards, guidelines, or practices might best assist third parties in handling and protecting this data?

As noted previously, SDG&E provides customer-specific information to third parties after receiving written authorization by the customer to do so. Recently, the California Commission explicitly required investor-owned electric utilities to provide third parties with access, upon the customer's consent, to a customer's real-time or near-real-time usage information no later than the end of 2011.[14] Pursuant to this order, SDG&E has established a protocol whereby a customer can authorize, using SDG&E's online "My Account" webpage, the transmission of their usage data to third parties for use in and by online applications. Upon receipt of this authorization, SDG&E assigns a unique identifier to each customer that matches the customer's meter data to the identifier, facilitating the transfer of the data to the authorized third-party recipient.[15]

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[14] See *Rulemaking to Consider Smart Grid Technologies Pursuant to Federal Legislation and on the Commission's Own Motion to Actively Guide Policy in California's Development of a Smart Grid System,* Decision 09-12-046 in Docket R.08-12-009, at pp. 64-65 (Cal.Pub.Util.Comm., 2009).

[15] Notwithstanding these protocols, SDG&E does not disclose sensitive customer information, such as name, service or billing address, phone number, electronic-mail address, account, and social security or tax identification numbers, to third parties except on special order of the California Commission or under compulsion of law and process. Where a customer has an interest in providing a third party with sensitive personal information of these types, SDG&E leaves it to the customer to provide it to the third party directly.

SDG&E has established a process based on the aforementioned principles dubbed the "Customer Energy Network (CEN)". CEN is an application enabling SDG&E customers to view their energy-usage information through authorized Internet content-providers. SDG&E has teamed with Google, one of the first Internet content-providers to be so authorized, to provide electric-usage data to customers using the Google "PowerMeter" application via a personalized iGoogle webpage.[16] Through this collaboration, participating SDG&E customers will be given online access to electric energy-usage information produced by and from their smart meters through the "Google PowerMeter" gadget. This collaboration with Google will provide SDG&E customers with additional choices as to where and how they access their electric energy information. Currently, SDG&E is analyzing other technology companies and applications and expects to add new options to the list of content providers and web-based applications from which customers can choose. SDG&E believes that a customer should have the ability to select multiple third-party application providers and authorize those providers to have access to the customer's energy-usage information.

(14) What forms of energy information should consumers or third parties have access to?

SDG&E is already processing customer authorizations related to the provision of energy-usage data and histories via third-party web-based applications. In addition, SDG&E expects that customers will also authorize third parties to receive the customers' billing and pricing information.

(15) What types of personal energy information should consumers have access to in real-time, or near real-time?

Increasing customer interest in energy issues (*e.g.*, energy costs and environmental impacts of production) and their consumption patterns has led to a concomitant increase in customer interest in accessing their usage data in real-time or near-real time. Smart meters facilitate the collection and delivery of that information to customers with these interests. Seizing the moment created by the confluence of technology and customer interest, the California Commission has established policies requiring the regulated electric utilities to provide smart-metered customers with access to their usage data on a real-time or near-real-time basis no later

[16] "iGoogle" is a personalized Web portal page that users customize with "Google gadgets" such as local weather, stock prices, local movie times, favorite media outlets, and other user-preferred content.

than the end of 2011.[17] In this regard, SDG&E provides a secure path from the smart meter to the customer device used to access and display consumption data via a "Home Area Network ("HAN") – while the data are provided in real-time or near-real-time, the data are not read, verified or reconciled by SDG&E as delivered and are labeled accordingly. California's investor-owned electric utilities, as is the case with other leading domestic and foreign utilities, are incorporating the ZigBee industry standard wireless communication protocol to deliver information via the HAN.

For the future, SDG&E envisions that applications related to pricing could also be provided, coupling a customer's real-time and near-real-time usage information with customer-applicable rates and tariffs. These applications would be particularly useful for customers whose bills reflect real-time or period-sensitive rates. No matter the application, however, SDG&E continues to expect that customer authorizations will be an important first step to the provision of any information to a third party.

(16) What steps have the states taken to implement Smart Grid privacy, data collection, and third-party use of information policies?

As a California-regulated electric utility, SDG&E has focused most of its efforts with respect to the development of policies related to smart grid privacy, data collection and third-party access in the ongoing proceedings conducted by the California Commission, its principal regulatory agency. The California Commission has already addressed a number of issues related to these topics and adopted policies related to each of them.

With respect to the protection of customers' privacy interests, the California Commission has continued longstanding California policies requiring the utilities to protect a customer's energy information, allowing disclosures only with the prior written consent of the customer. By the end of 2010, access to that information, where authorized by the customer, must be provided to third parties via the Internet, and in real-time or near-real-time by the end of 2011.[18]

[17] See *Rulemaking to Consider Smart Grid Technologies Pursuant to Federal Legislation and on the Commission's Own Motion to Actively Guide Policy in California's Development of a Smart Grid System,* Decision 09-12-046 in Docket R.08-12-009, at pp.51, 65, 78.

[18] See *Rulemaking to Consider Smart Grid Technologies Pursuant to Federal Legislation and on the Commission's Own Motion to Actively Guide Policy in California's Development of a Smart Grid System,* Decision 09-12-046 in Docket R.08-12-009, at pp.51, 65, 78.

More specific policies and regulations related to privacy protections will follow the series of ongoing workshops and formal proceedings still pending before the California Commission. In a recent decision, the Commission stated,

> Based on a review of the comments, replies, and the information provided at the workshop, it is clear that issues concerning access to information and privacy protections contain subtleties and complexities that prevent their resolution without further deliberation and comments. Although there is a widespread consensus that consumer privacy is important and requires protection and there are numerous principles on which there is major agreement, developing a full host of regulatory requirements and protections cannot be done in this decision. There are, however, some elements of security and privacy that should be addressed in deployment plans, and this decision will provide guidance on these matters.
>
> After the adoption of this decision, this proceeding will focus on information access and privacy protections needed to implement access to price and consumption data. Our goal remains the development of a subsequent decision that resolves these matters in time to meet the policy objectives adopted in D.09-12-046 of providing consumers with access to data, namely a policy objective of providing retail and wholesale price information by the 'end of 2010', a policy objective of providing access to usage data through an agreement with a third party by the end of 2010, and policy objective of providing access to usage information on a near real-time basis for customers with an Advanced Metering Infrastructure (AMI) meter by the end of 2011.[19]

Among the issues SDG&E expects will be addressed in these further proceedings is the manner in which the reconciliation of "raw" energy-usage data, as presented to the customer or third party, to the billing data will be explained and provided to customers. In presenting real-time or near-real-time meter data to the customer or a third party authorized to receive it, SDG&E's role in this process is to pair a customer's device with their meter using appropriate security protocols and measures. The real-time or near-real-time data provided from the smart meter to the customer or an authorized third party may, however, be considerably more detailed than the data provided and/or used by SDG&E for billing purposes, and thus may appear to reveal discrepancies between the two different sets of data. For instance, SDG&E billings typically would not reflect variations in consumption at intervals less than a quarter hour or one hour, depending on the customer, or at levels less than a kilowatt-hour, or some large fraction of these measurements, while the usage data provided by the smart meter at any given moment could be considerably more precise, down to per-second intervals and/or one-watt levels of usage. Using its standard smart meter

[19] See *Rulemaking to Consider Smart Grid Technologies Pursuant to Federal Legislation and on the Commission's Own Motion to Actively Guide Policy in California's Development of a Smart Grid System,* Decision 10-06-047 in Docket R.08-12-009, at p.10.

communications pathways and protocols, SDG&E ordinarily would not have access to or records of the data made available to the customer or an authorized third party and would therefore be at a loss to explain any perceived discrepancies between what might be reflected on a monthly bill and the data accessed at a moment of the customer's selection. This could result in customer confusion and mistrust of the utility or the smart meter, with a concomitant increase in complaints and calls to the utility call center, despite the accuracy and legitimacy of both the meter data available to the customer and/or the billing data used by the utility. SDG&E believes it to be vitally important that policies are in place to set appropriate customer expectations as billing and metering comparisons are enabled.

SDG&E would not expect the Department to have an interest in engaging in the setting of practical standards and regulations at the level of detail described in this response, but SDG&E urges the Department to monitor proceedings such as those being conducted by the California Commission so as to assure the consistent application of high-level principles regarding privacy, data collection and third-party use of smart meter data as other agencies adopt and implement their policies related to these topics.

(17) What steps have investor-owned utilities, municipalities, public power entities, and electric cooperatives taken to implement Smart Grid privacy, data collection and third party use of information policies?

As described previously, SDG&E has focused much of its attention on working with the California Commission and key stakeholders in the development of the privacy and security policies implicated by the deployment of smart grid technologies. While the proceedings and rulemakings of the California Commission have received most of our attention, SDG&E fully participates before the federal agencies reviewing, and potentially setting, these policies at a national level. Upon due notice, SDG&E fully conforms to all applicable federal, state and local laws and regulations related to privacy, data collection and information use policies.

(18) Should DOE consider consumer data accessibility policies when evaluating future Smart Grid grant applications?

SDG&E agrees that the Department should consider, among other requirements, consumer data accessibility policies and their compliance with federal and state law and requirements when evaluating grant applications for Smart Grid investments.

III. Summary and Recommendations

As the Department proceeds to develop its role and positions with respect to the development of smart grid rules and regulations, SDG&E strongly encourages the Department to consider the California privacy rules as a model for any regulatory framework it might adopt, but in any case permit the states, which historically have governed the utility-customer relationship in the energy-utility industry, to adopt and apply those rules most appropriate to the character of those relationships within their jurisdictions. The California rules under which SDG&E operates have served the public well and, because they were adopted following extensive public and stakeholder proceedings, address the nuances and conditions of greatest concern to the state's consumers and utilities. As noted in these comments, the California Public Utilities Commission in particular, under the supervision of the state legislature, continues to consider those additional privacy-related principles, practices and issues as might be implicated by the implementation of smart meters and smart grid functionalities, indicating that the California rules will be comprehensive and suited to the evolutions of the utility-consumer relationship occurring locally.

Respectfully submitted,

/s/ Alvin S. Pak

Alvin S. Pak
Attorney for San Diego Gas & Electric Company

101 Ash Street, HQ12C
San Diego, California 92101
Telephone: 619.696.2190
Electronic Mail: Apak@semprautilities.com

San Diego, California
July 12, 2010