



APEC WORKSHOP ON REGULATORY APPROACHES TO SMART GRID INVESTMENT/DEPLOYMENT

CONSUMER DATA ACCESS AND PRIVACY

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Consumer Data Access and Privacy

- **Consumers Are Concerned About:**
 - Privacy and Data Access
 - Cyber Security
 - Consumer Protections such as service disconnection, options to participate or not in metering and dynamic pricing
 - Dynamic Pricing Options including mandatory vs. voluntary
 - Cost and Value

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In a survey of 200 Energy Professionals:

- 52% rated the cost of smart with an 8, 9, or 10 on a 10-point scale
- 49% rated privacy as a concern
- 47% rated security as a concern
- Source: DETech Effectiveness of Smart Grid Communications, January, 2012

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Other Key Entities Recognized the Importance of Privacy:

- In evaluating awards grants under the Smart Grid Investment Grant, the U.S. Department of Energy indicated that proposals would receive a higher merit ranking where research models could make data collection confidential.
- In testimony before Congress, Google indicated that personal energy information belongs to the consumers and therefore, the consumer should control access
- In a joint report to the White House, consumer groups (including the National Association of Utility Consumer Advocates, the American Association of Retired People, the National Consumer Law Center, Consumers Union and Public Citizen) stated that privacy concerns should be addressed prior to smart-grid roll-out.

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What Does Smart Grid Do?

A **smart grid** is a digitally enabled electrical grid that gathers, distributes, and acts on information about the behavior of all participants (suppliers and consumers) in order to improve the efficiency, importance, reliability, economics, and sustainability of electricity services.

Source: Wikipedia

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Information Available Through Utilization of Smart Grid Data:

- When is the consumer home?
- What appliances is the consumer using and how frequently?
- How much time does the consumer spend in each room and when?
- When does the consumer go on vacation?
- What economic class do they fit into?
- Do they observe religious holidays or the sabbath?
- What type of foods do they eat for dinner?
- How likely are they to alter their daily routine?

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Charging Electric Vehicles will Provide Another Source of Data:

- The process of charging vehicles will provide information regarding the traveling habits and daily schedules of consumers.
- Under some models, the cost of recharging a battery at a charging station will be charged to the customer's bill, providing more information on where the customer is traveling to.

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Energy Usage Data Can Be Used by Law Enforcement:

- In Austin, Texas, law enforcement had unfettered access to individual energy consumption data and used mass surveillance techniques to discover anomalies in consumption which resulted in investigations in drug production.
- The United States Supreme Court has held that conveying data to a service provider nullifies any individual expectation of privacy and is therefore accessible to law enforcement. (U.S. v. Miller, 425 U.S. 432, 1976)

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Access to Detailed Usage Data Can Have Serious Ramifications for Victims of Domestic Violence:

- Accounts and usage data are typically under the control of the abusive partner.
- The abusive partner can use meter data management systems that provide the ability to control the use of appliances and to monitor their use remotely.
- This allows the abusive partner to monitor activities of the victim of domestic violence in the home. For example, is the computer being used in contravention of restrictions? Is dinner late because the abused partner was watching television?
- This information can violate privacy, further restrict freedom of movement and escalate violence.

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Landlord-Tenant Relationship

In circumstances where a tenant or other occupant of a home is not the direct customer of the utility, what access, if any, should the landlord have to energy usage information?

In circumstances involving transitional housing or homeless communities, what access, if any, should the acting officer have to energy usage information?

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Customer Access to Usage Information

- Are there protection requirements for data from advanced metering or smart grid programs in the case of a marital divorce or separation or protection order; if the account holder is no longer occupying the home or building or is legally prohibited, will he/she continue to have access to energy usage information?
 - Are steps in place to block privileges/access to energy usage data by a previous account holder?
- Are there practices that should be followed if a utility company is subpoenaed to provide energy usage records by a court in divorce and/or custody cases?
 - What, if any, notification should a utility company provide to all parties involved?

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Customer Energy Usage Data Has Value to Many Entities:

- Law Enforcement agencies investigating criminal acts
- Energy companies seeking to sell services
- Third party companies marketing to individuals
- Insurance companies seeking to identify unhealthy behaviors to adjust rates
- Criminals
- Researchers conducting studies on energy use
- Competing businesses seeking to access information about a competitor
- Controlling relatives

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Energy Companies Should Care About Data Privacy:

- Protecting consumer privacy will enhance the consumer's experience with and comfort/peace of mind in taking advantage of smart meters
- **Privacy protections will avoid consumer backlash and potential lawsuits charging violation of privacy through the improper release of consumer data**
- Failure to internally set privacy standards could result in more restrictive legislation to accomplish these goals.

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Additional Issues Utility Companies Should Consider:

- **What is the intended use of the data?**
- Who should have access to the data?
- What protections can be put in place, e.g. encryption?
- **For how long will the data be kept before it is destroyed?**
- How will the data be stored and accessed?
- What protocols are in place to protect against an employee breach?

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As part of the Critical Consumers' Stakeholder Forum (CCIF) a multi-stakeholder group developed the following set of principles for privacy and security protection:

- Protecting individual consumer information (e.g. customer name, address, account number, energy usage, etc.) from unauthorized disclosure is essential to successful grid modernization.
- **Consumers must have timely access to their own energy usage data.**
- Utilities and utility contractors must continue to protect consumer electricity usage data from unauthorized access and must have the affirmative consent of consumers prior to disclosure of a consumer's personally identifiable energy usage data to any third party.

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CCIF Principles Continued:

- Electric utilities must continue to have access to and the ability to use customer specific usage data (CEUD), including operational data to effectively render regulated services (safety, reliability and billing).
- Utilities must handle CEUD in a manner that protects the information and the privacy of the consumer.
- Unless other uses are affirmatively authorized by a state or federal regulatory authority or affirmatively authorized by the consumer, the utilities must limit their use of CEUD to that necessary for the provision of regulated services.

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CCIF Principles Continued:

- A consumer must affirmatively authorize disclosure by the utility of his/her energy usage data to a third party.
- Such third party must handle this data in a manner that protects the information and the privacy of the consumer, as well as the use of such data to the specific purpose for which it was authorizes.
- Such third party must also provide a clear and conspicuous disclosure as part of the authorization process.

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CCIF Principles Continued:

- Any authorized third party utilizing consumer energy usage data must fully disclose to the authorizing consumer how that information will be used.
- Utilities, commissions and other agencies should review best practices in other data-intensive industries (e.g. telecommunication, financial and healthcare organizations) and re-examine, in the context of grid modernization , government certification standards, codes of conduct and consumer safeguards.

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CCIF Principles Continued:

- States should consider whether requirements are necessary to protect consumer energy usage data transferred to a third party directly by the consumer.
- Source: CCIF, “Grid Modernization Issues with a Focus on Consumers” by Katrina McMurrian, July, 2011.

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Additional Consumer Protections:

- Consumer privacy protections should not be an afterthought but should be fully incorporated in any smart grid plan from the beginning
- Steps should be taken to ensure that consumers understand the ramifications of consent to third party disclosure and that it is their intent to proceed.
- More dialogue is needed to address data protection when the account is the name of a party who is not the consumer of the electricity.
- The consumer’s data should belong exclusively to the consumer.

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Conclusion:

- The violation of consumer privacy can have a number of ramifications ranging from the nuisance of unwanted marketing solicitations to placing an individual's safety and well-being at risk.
- Some issues have more readily available solutions such as those demonstrated through the CCIF Principles. Others are far more complex.
- Smart Meters will usher in a wave of consumer data that has never before been available. This data can be put to many positive good uses, but should only be done if the consumer knowingly and affirmatively consents.
- Data availability may be available to law enforcement and account holders and there are no guidelines in place to protect against disclosure.
- The consumer's information first and foremost should only belong to the consumer.



About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

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