Excerpts from

SMART METERING & PRIVACY: EXISTING LAW AND COMPETING POLICIES

A REPORT FOR THE COLORADO PUBLIC UTILITIES COMMISSION

By Elias Leake Quinn, Spring 2009

Proper management of this new information pool could support energy efficiency efforts and demand-side management (DSM) initiatives.3 However, *insufficient oversight of this information could also lead to unprecedented invasions of consumer privacy*. *Many intricate details of household life can be gleaned from information obtained via advanced metering infrastructure*.

However, information control regimes that centralize smart grid information disclosures by giving principle control to the electric utility may work against innovation in service industries developing at the edge of the electric grid and provide new barriers to market entry. If privacy regulations make customer usage information is too difficult or expensive to obtain, the regulatory regime could dampen the rampant growth and evolution of a promising new sector for economic development. The balance struck among these various factors will define any privacy concern related to smart grid information, which is ultimately founded on who has access with customer usage information, and what they can do with it.

However, the massive deployment of smart meters across the country and the trend toward finer and finer interval data means that more and more information will be discernable *{sic}* about more and more people. While the raw information about when an appliance event occurred in a given home may not seem to be sensitive information, it could be used to construct a detailed picture of residential life. Tracking appliance events means smart grid information could tell you the answer to questions like

- » How often does a given customer eat microwave dinners as opposed to cooking
- three-pot meals?
- » How many hours of TV does a resident watch? What kind of TV is it?
- » When does a resident normally shower (and so cue an electricity draw from the
- water heater)?

What's more, the raw fact of an individual's monthly level of electricity usage may be becoming a more sensitive issue among some communities as electricity usage is tied ever more to social moors concerning environmental responsibility.

This shifting meaning of an individual's energy consumption habits is not without its salient examples: In 2007, the day after Al Gore received an Oscar for Best Documentary in for his production *An Inconvenient Truth*, the Tennessee Center for Policy Research reported that Al Gore's Nashville home consumed significantly more electricity than the national average (to the tune of a 20 fold increase).23 Roughly a year later, the center reported that the former Vice-President's energy use had increased by ten per cent during the intervening year despite Gore's installation of energy-efficient renovations.24

Drew Johnson, president of the research center, chided, “A man’s commitment to his beliefs is best measured by what he does behind the closed doors of his own home. Al Gore is a hypocrite and a fraud when it comes to his commitment to the environment, judging by his home energy consumption.”25

The various questions to which smart grid information may unveil answers about individuals thus sparks two concerns: one regarding those that would ask questions for commercial or political benefit, and those that might use the information to target houses for, say burglary.

The threshold motivation behind smart grid deployment is to enable environmentally sensitive electricity generation, distribution, and consumption practices. “The collection of information about energy consumption from residential and commercial buildings at frequent intervals is a core component of the demand response system.”27

Fourth Amendment

Other authors—most notably Jack Lerner and Deirdre Mulligan—have dealt squarely with Fourth Amendment concerns related to advanced metering infrastructure and high resolution energy usage information.92 The lessons of their investigation should, however, be kept in mind—namely, that interval data of electricity consumption appears to be in something of a no-man’s-land under Supreme Court Fourth Amendment jurisprudence. On the one hand, the Court has upheld the sanctity of the home as the touchstone for privacy protection.93Technology that effectively pierces the blinds, exposing information about activities inside the home requires a warrant before it is employed. It would appear that electricity usage data, as it contains many intimate details about the in-home activities of consumers, allows investigators to see through walls into the home and so access to the information should be restricted to essentially a need-to-know basis.94

On the other hand, business records collected and kept by third parties enjoy far fewer privacy protections, the underlying theory being that consumers elected to transact with the business, and to engage in activities open to observation by the public.95 Traditional electricity metering information has generally been treated as business records and so lies unprotected by the Fourth Amendment.96 Though Lerner and Mulligan seem optimistic that courts will “take the long view” on Fourth Amendment protections and extend them to smart metering data, my own analysis is that the law as it stands does not decide the matter, and the jurisprudence could easily be used to justify either result. For a more comprehensive treatment, see Jack I. Lerner & Deirdre K. Mulligan, *Taking the “Long View” on the Fourth Amendment: Stored Records and the Sanctity of the Home*, 2008 STAN. TECH. L.REV. ¶¶ 7–8, 11–30, *available at* http://stlr.stanford.edu/pdf/lerner-mulligan-long-view.pdf.“In the home, our cases show, all details are intimate details, because the entire area is held safe from prying government eyes.” *Kyllo*, 533 U.S. at 27. It should be noted, though, that the court’s reasoning in *Kyllo* relied at least in part on the fact that thermal-imaging technology was not readily available and thus the law enforcement officer’s techniques seemed even further from “naked-eye surveillance.” *Id.* at 34-40. In the context of smart meter technology, the massive deployment efforts discussed in Part I.A would almost certainly render the technology “readily available,” which may cut against Fourth Amendment protections. More

likely, though, the focus would come down on the information-extracting algorithms that allow users to glean the details of appliance activities from the smart meter data. Those are likely to be less common and less available than the meters themselves, which may make the analogy stronger and so bolster the argument for Fourth Amendment protection.