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Driving Building Efficiency with Aggregated Customer Data

A Brief Review of Selected Practices in the U.S.

July 2013

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Acronyms

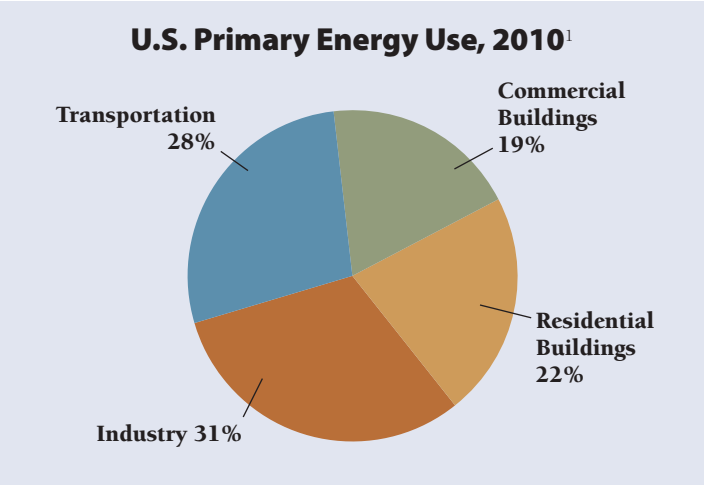
(limited to those occurring at least three times in the article)

Con Edison	Consolidated Edison Company of New York, Inc.
EPA	US Environmental Protection Agency
NAESB	North American Energy Standards Board
NARUC	National Association of Regulatory Utilities Commissioners
PUC	Public Utilities Commission
SEE Action	State and Local Energy Efficiency Action Network

1. Introduction

Benchmarking commercial buildings by tracking building-level energy use over time is a useful way to manage building costs and to enable energy efficient improvements. The potential for energy savings in buildings is substantial, because buildings account for a significant portion of our energy use. However, large commercial buildings typically have multiple tenants whose energy usage is metered separately. To facilitate benchmarking in commercial buildings, building owners and third parties need access to customer energy use data that are aggregated across all the meters in the building. Such aggregated data have not historically been easy to access, and this has created a barrier to widespread energy efficiency improvements in these buildings. This barrier is being eliminated today in a growing number of jurisdictions that have implemented statutes, rules, or benchmarking requirements requiring utilities to provide data to building owners and third parties. Many municipalities and state public utility commissions, as well as the National Association of Regulatory Utilities Commissioners (NARUC), recognize the value of utility support for comprehensive benchmarking policies that provide access to aggregated data.

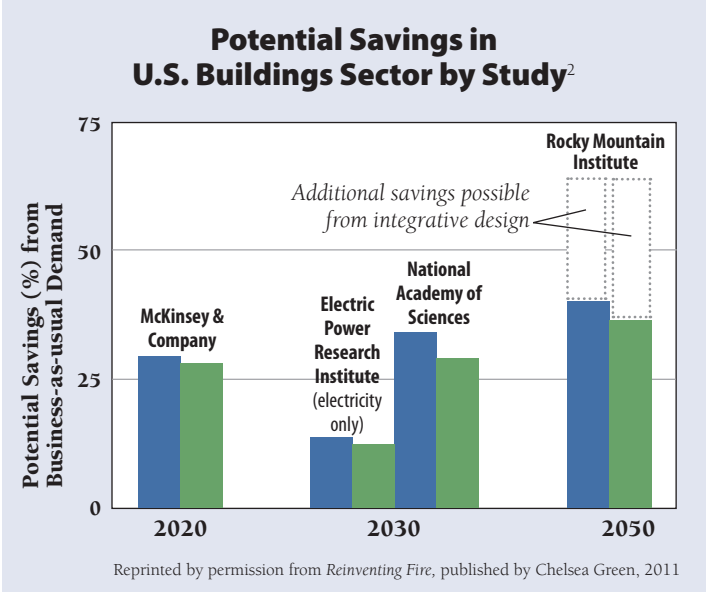
Figure 1



Energy use in commercial buildings accounts for approximately one fifth of our total energy use, representing a significant opportunity for energy savings (Figure 1). Several studies illustrate the magnitude of the potential for energy savings in buildings (Figure 2). Although these studies differ in their assumptions, methodologies, and time frames analyzed, they all conclude that there is significant opportunity for energy efficiency in buildings.

This report takes a brief look at the rationale behind aggregating customer data for commercial building benchmarking and at several jurisdictions and companies around the country that have developed programs to do so.

Figure 2



Reprinted by permission from *Reinventing Fire*, published by Chelsea Green, 2011

1 U.S. Department of Energy. (2012, March). *2011 Buildings Energy Data Book.*

2 Rocky Mountain Institute. Potential savings in U.S. buildings sector by study. Available at: http://www.rmi.org/RFGraph-potential_savings_US_buildings_sector_study, citing studies from McKinsey and Company, Electric Power Research Institute, National Academies of Sciences, and Rocky Mountain Institute.

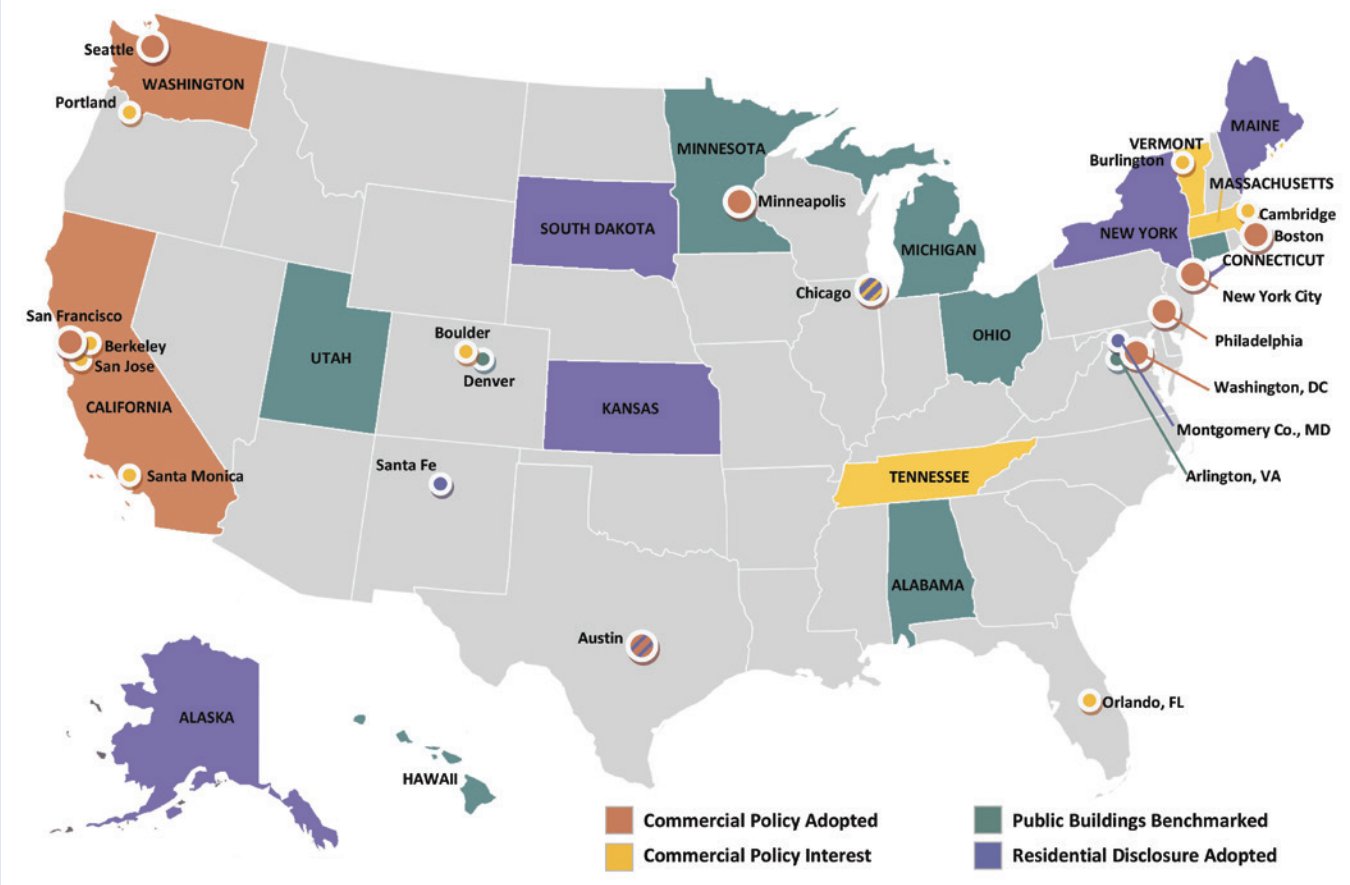
2. What Is Benchmarking and Why Is It Important?

Benchmarking – a key step in improving the energy performance of buildings – is a process of measuring the energy use and performance of a building so that it can be compared to itself over time, to other similar buildings, or to a norm, with the goal of informing and encouraging energy performance improvements. Benchmarking is a "critical step in any building upgrade project, because it informs organizations about how and where they use energy and what factors drive their energy use."[3]

Benchmarking can help owners focus on energy use in a building or group of buildings, allowing for

Figure 3

U.S. Building Benchmarking and Disclosure Policies, May 2013[4]



3 ENERGY STAR. (2008). ENERGY STAR® Building Manual. Page 2. Accessed March 1, 2013 from http://www.energystar.gov/index.cfm?c=business.EPA_BUM_CH2_Benchmarking

4 Institute for Market Transformation, personal communication.

the identification of areas with the greatest potential for improvement, enabling the tracking of building performance, and pinpointing the most suitable practices in one building that may be effective in others. Benchmarking can also involve the comparison between similar types of buildings (i.e., those in the same sector of the economy). According to the April 2012, "Statewide Benchmarking Process Evaluation," a report prepared on behalf of the California Public Utilities Commission (PUC):

> *A simple "benchmark" may be a comparison of a whole building's utility bills from one year to another. More sophisticated techniques attempt to normalize for factors that impact the raw billing data but are not a measure of the true energy performance of the facility, such as weather, facility type, occupancy type, and operating characteristics."*[5]

The State and Local Energy Efficiency Action Network (SEE Action) describes benchmarking as a "foundational element that can improve awareness of building energy performance and drive users to undertake other energy-efficient practices."[6] Although benchmarking alone does not identify specific energy efficiency improvements, it can help identify savings from improvements that have already occurred and can serve as the foundation for a comprehensive and strategic energy management plan. Furthermore, benchmarking findings can be coordinated with other policies to effectively support investment and secure the benefits associated with greater energy and water use efficiencies in the commercial building market.[7]

Benchmarking has had growing support and use across the country in the past few years. Several large cities and two states have established commercial building benchmarking requirements (see Figure 3). A growing number of utilities have added benchmarking programs to their commercial sector offerings. In addition, a number of jurisdictions have voluntary benchmarking campaigns that encourage the business community, government, and utilities to collaborate on improving building energy performance. Finally, in the private sector, benchmarking has emerged as a best practice among some large commercial sector organizations, which have implemented it and achieved significant energy and cost savings. A growing number of large commercial association organizations promote benchmarking to their members as well.

NARUC highlighted the value of benchmarking in its 2011 "Resolution on Access to Whole-Building Energy Data and Automated Benchmarking."[8] NARUC recognized that there are benefits of benchmarking to utilities, building owners, and customers, that there is building industry support for benchmarking, and that the barriers to benchmarking can be addressed.

The resolution acknowledges "the need for commercial building owners and managers to access whole-building energy consumption data to support energy-efficient building operations."[9] NARUC encourages "[s]tate public utility commissions seeking to capture cost-effective energy savings from commercial buildings to consider a comprehensive benchmarking policy" that would, among other things:[10]

5 NMR Group and Optimal Energy, for the California Public Utilities Commission. (2012, April). Statewide Benchmarking Process Evaluation Volume 1: Report. Available at: http://www.calmac.org/publications/Statewide_Benchmarking_Process_Evaluation_Report_CPU0055.pdf

6 The State and Local Energy Efficiency Action Network (SEE Action) is a state- and local-led effort facilitated by the U.S. Department of Energy and the U.S. Environmental Protection Agency to take energy efficiency to scale and achieve all cost-effective energy efficiency by 2020. SEE Action Network. (2012, May). Energy Benchmarking, Rating, and Disclosure for State Governments. Page 1. Available at: http://www1.eere.energy.gov/seeaction/pdfs/commercialbuildings_factsheet_benchmarking_stategovt.pdf

7 See example of ComEd using benchmarking in coordination with other utility programs. ComEd in Chicago encourages customers to benchmark as a gateway to its other incentive programs. See the following link for one of ComEd's marketing brochures: https://www.comed.com/Documents/business-savings/fact-sheets/EUDS_FS.pdf. See also Krukowski, Andrea, and Cliff Majersik. Institute for Market Transformation. Utilities' Guide to Data Access for Building Benchmarking. March 1, 2013, page 26. Available at: http://www.imt.org/news/the-current/new-utilities-guide-to-data-access

8 NARUC. (2011, July). Resolution on access to whole-building energy data and automated benchmarking. Adopted by the NARUC Board of Directors July 20, 2011.

9 Id.

10 For example, "use EPA ENERGY STAR automated benchmarking services," and "adopt methodologies that credit program impact to benchmarking-driven energy efficiency programs."

> *Take all reasonable measures to facilitate convenient, electronic access to utility energy usage data for building owners, including aggregated building data that does not reveal customer-specific data to protect individual customer privacy….* [11]

Initial steps in benchmarking include the adoption of goals, definition of project scope, and the identification of appropriate performance metrics.

Going forward, building managers accumulate data about their facilities and normalize the data using a tool like "Energy Star Portfolio Manager" to ensure that project assumptions are valid. Portfolio Manager is a free, online tool that the US Environmental Protection Agency (EPA) developed and administers for commercial, industrial, multifamily, public, and institutional building owners and managers. It helps building owners benchmark by identifying "under-performing buildings to target for energy efficiency improvements and establish baselines for setting and measuring progress for energy efficiency improvement projects over time."[12] This in turn enables building owners and managers to establish their priorities and make and verify improvements.

In order to benchmark with Portfolio Manager, a user needs 12 consecutive months of consumption data for all types of fuel used for an entire building. With the use of Portfolio Manager, building owners can gauge and rate the energy performance of their buildings through comparisons to similar buildings nationwide.[13]

11 As well as the sharing of customer-specific data to the extent provided for under state law and regulations.

12 U.S. Environmental Protection Agency. Energy Star. Portfolio Manager overview. Available at: http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager

13 Id. Portfolio Manager is not the only benchmarking tool available. Lawrence Berkeley National Laboratory has developed a tool called "EnergyIQ," and there are also other proprietary benchmarking tools. SEE Action Network. (2012, May). Energy benchmarking, rating, and disclosure for state governments. DOE/EE-0731, p. 2.

3. The Biggest Challenge for Benchmarking—Access to Aggregated Energy Use Data

Recent advances in metering technology have raised concerns for regulators, utilities, and consumer advocates about privacy and security of customer energy use data. Until recently, electric utilities relied on meters that were generally read monthly to track cumulative MWh usage. With the adoption of advanced metering infrastructure or "smart meters," utilities are now able to record customer energy use with far greater precision and at more frequent intervals.[14] This has resulted in the gathering of data revealing many aspects of customers' energy use, information that is useful to utility efficiency programs and other contractors and providers. The production of advanced metering infrastructure data has also raised privacy and security concerns. New smart meters are capable of producing finer-grained data in hourly, 15-minute, and near real-time increments. These could be used to ascertain specific household energy use and potentially household behavior patterns.

According to the SEE Action Customer Information and Behavior Working Group,[15] customer usage data can be thought of as falling into three categories:

- Personally identifiable information;
- Customer-specific energy usage data; and
- Aggregated data.

The first category, personally identifiable information, includes names, addresses, and potentially even account and social security numbers. Customer-specific energy usage data are any data specific to a customer's energy use, including both total- and time-differentiated energy uses. Aggregated data are "data that the utility assembles from

The Need for Aggregated Data

In order to benchmark with Portfolio Manager, a user needs 12 consecutive months of consumption data for all types of fuel used for an entire building. However, according to The Energy Efficient Buildings Hub's "Utilities' Guide to Data Access for Building Benchmarking," getting access to this information is "the most onerous part of benchmarking for a building owner."

Although ready access to information is a desirable goal, it raises an associated challenge of ensuring tenant privacy and data security, a challenge that is further compounded to the degree that commercial buildings are multi-tenant and separately metered. In separately metered buildings in which each tenant is a utility customer, a building owner needs to seek authorization or consumption data individually from each tenant.

Consequently, collecting data or authorizations manually is difficult and time-consuming. Tenants may be indifferent or disinclined to share their information. Furthermore, large corporate tenants, for example, may not even have access to their bills, which are paid for at the company's national headquarters.

It is for these reasons that a number of jurisdictions around the country have developed or authorized the development of aggregation policies designed to both protect individual consumers and make accessible energy consumption data for benchmarking purposes.

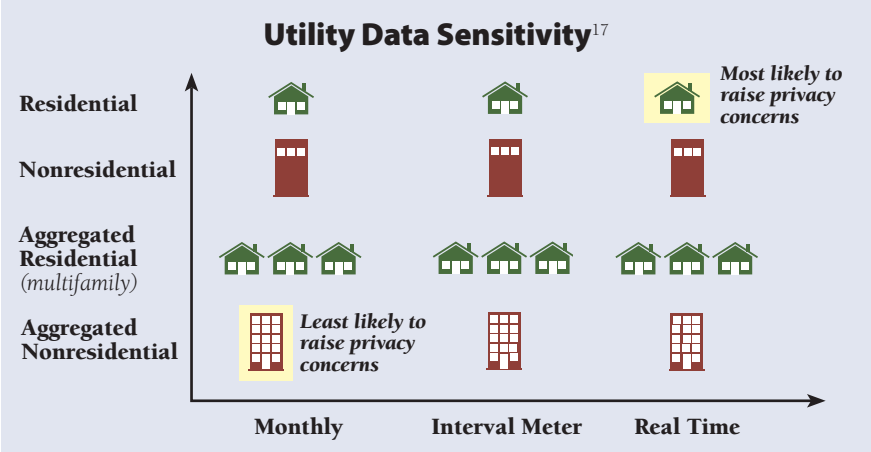
14 SEE Action Network. (2012, December). A regulator's privacy guide to third-party data access for energy efficiency (hereinafter referred to as Privacy Guide). See also Regulatory Assistance Project. (2009, July). Smart grid or smart policies: which comes first?

15 The SEE Action Network's "Customer Information and Behavior Working Group" is co-chaired by Vaughn Clark, Office of Community Development, Oklahoma Department of Commerce, Rebecca Wagner, Commissioner, Nevada Public Utilities Commission. Available at: http://www1.eere.energy.gov/seeaction/customer_info.html

multiple residences, tenants or commercial buildings to provide information about energy consumption across a specified area."[16]

Privacy and security concerns considered in relation to aggregated data needed for benchmarking are often mistakenly included in debates on smart grid privacy and security issues. The aggregated data needed to benchmark through Portfolio Manager are not the more fine-grained, near real-time data produced by advanced meters, as can be seen in Figure 4. The data required to benchmark are those that have been aggregated to obscure specific customers' data and that describe energy use over the course of a month, much like the data produced by older, electromechanical meters.

Figure 4



According to SEE Action, "insight from other industries as well as historic experience of electric/gas utilities administering energy efficiency programs suggests that disclosing aggregated data poses limited risk to the customer."[18] They contend that "[a]ggregated data about specific customers that [are] combined in a manner that leaves individual customers unidentifiable by the recipient allows for [energy efficiency contractors and providers] to determine trends and evaluate results…"[19] SEE Action notes that the greater protection afforded aggregated data and the resulting difference in its regulatory treatment and the treatment of customer's individual usage data are justified precisely because of the removal of the information that would allow for the identification of an individual customer.[20]

The National Regulatory Research Institute has observed that private data can be made available "by removing or masking personally available information."[21] According to the National Regulatory Research Institute:

> *Regulators can address aggregated information in a number of ways: (1) approve the use of aggregated information generally without customer permission, (2) require utilities to create a process for obtaining customer permission proactively (consumer opt-in to sharing their data in an aggregated form), or (3) require utilities to inform customers of the potential uses for aggregated information and provide a process to allow customers to choose not to participate.*[22]

Likewise, the North American Energy Standards Board's (NAESB) Retail Electric Quadrant Data Privacy Task Force drafted recommendations entitled "Third Party Access to Smart Meter-based Information," and found that:

> *Aggregated or de-identified smart meter-based information raises few privacy concerns. Privacy concerns primarily arise when smart meter based information linked to a retail customer is used without the knowledge of the customer for purposes that are not authorized by the retail customer or the applicable regulatory authority.*[23]

The next section explores some examples of aggregation policies that protect customer privacy while enabling useful and appropriate data disclosure.

16 SEE Action Network. Privacy guide, p. 3.

17 Krukowski, A., & Majersik, C. (2013, March). Utilities' guide to data access for building benchmarking. Institute for Market Transformation. Table 1, p. 13.

18 SEE Action Network. Privacy guide, p. viii.

19 Id.

20 Id, p. 11.

21 Lichtenberg, S. (2010, December). Smart grid data: must there be conflict between energy management and consumer privacy?, National Regulatory Research Institute. Page 21-22. Available at: http://www.nrri.org/pubs/telecommunications/NRRI_smart_grid_privacy_dec10-17.pdf

22 Id.

23 North American Energy Standards Board. (2012, February). The recommendation of the retail electric quadrant data privacy task force to NAESB executive committee. (In regard to: Third party access to smart meter-based information.)

4. Providing Access to Aggregated Data—Selected State and Municipal Examples

A growing number of states and municipalities that support benchmarking or promote greater building efficiency have developed rules or accepted utility proposals governing access to aggregated customer usage data.[24] Additional states have opened investigations considering such policies, and many utilities have developed their own privacy policies that include rules for aggregated customer data. Following are a few examples in specific jurisdictions. Jurisdictions and utilities have used a wide range of values for the number of customer accounts that must be present in order to aggregate data, as illustrated in the examples below and in the Appendix.

New York

In its March 26, 2010 "Order Establishing Three-Year Electric Plan" for Consolidated Edison Company of New York, Inc. (Con Edison), the New York Public Service Commission established a process for providing building owners access to their buildings' energy usage data.[25] In this order, the Public Service Commission adopted recommendations developed by Con Ed and a larger group of stakeholders, including the New York Energy Consumers Council, and the City of New York.

Con Edison

Within 15 days of receipt of a written request of a multifamily or commercial building owner or manager, Con Edison is required to provide aggregate building energy usage (in kWhs) and demand (in kW) for up to 24 months prior to the request. The Commission requires the information to be provided "in aggregate form without revealing particular or identifiable customer information."[26]

Oklahoma

Oklahoma passed its Electric Usage Data Protection Act in 2011.[27] The law is intended to establish standards around access to and use of customer usage data by utilities, customers, and third parties. The law defines "aggregate usage data" as "any usage data from which all identifying information has been removed such that the individual usage data of a customer cannot without extraordinary effort and expertise be associated with the identifying information of that customer."[28] Aggregate

24 See Appendix for a list of account aggregation thresholds; see also the following publications for additional examples of states and utilities with aggregated customer data policies and benchmarking programs: SEE Action Network. (2013, May). A utility regulator's guide to data access for commercial building energy performance benchmarking. Available at: http://www1.eere.energy.gov/seeaction/pdfs/commercialbuildings_data_access_guide.pdf; SEE Action Network. (2012, December). A regulator's privacy guide to third-party data access for energy efficiency. Available at: http://www1.eere.energy.gov/seeaction/pdfs/cib_regulator_privacy_guide.pdf; Institute for Market Transformation. (2013, March). Utilities' guide to data access for building benchmarking.

25 New York Public Service Commission. (2010, March). Case 09-E-0428, Proceeding on motion of the Commission as to the rates, charges, rules and regulations of Consolidated Edison Company of New York, Inc. for electric service; New York Public Service Commission. Case 08-M-0152, Comprehensive management audit of Consolidated Edison Company of New York, Inc. Order establishing three-year electric plan. Page 21.

26 Id. In addition, the Con Ed is required to provide "upon request of a multi-family owner or commercial building owner or manager, the account number, usage, and, if applicable, the demand information for each directly-metered tenant account for which the Company has received the customer's written consent to release such information." Id.

27 Oklahoma Statutes Title 17, Sections 710.1-710.8.

28 Id.

usage data may be disclosed to third parties and the public without customer consent for purposes such as promoting energy assistance and conservation. The law notes that any aggregate usage data "shall contain a sufficient number of similarly situated customers within a particular geographic area so that the daily usage routines or habits of an individual customer could not reasonably be deduced from the data."[29]

Colorado

Colorado added data privacy rules in 2012 that lay out standards for a range of situations in which customer data may and may not be used by various parties. The rules include provisions for aggregated customer data[30] that require that when a utility creates an aggregated customer data report, it "must take steps to ensure the report is sufficiently anonymous in its aggregated form so that any individual customer data or reasonable approximation thereof cannot be determined from the aggregated amount."

Colorado, borrowing from California, has implemented what is known as the "15/15 rule."[31] According to this rule, at a minimum, the aggregated data must:

- Contain at least 15 customers or premises, and
- Within any customer class, no single customer's data or premise may comprise 15 percent or more of the data aggregated in that customer class in the aggregated report.

If the aggregated report requested by a building owner or third party does not ensure customer privacy, Colorado utilities are required to revise the aggregated report by expanding the number of customers in the report, expanding the geographic area, or undertaking other measures that will cause the aggregated report to meet the rule, if the requestor wishes. In addition, utilities must include in their tariffs a detailed description and list of specifications of the aggregated data reports that are available to any requestor. Utilities also are able to contract with an outside party to generate the aggregated reports.

Xcel Energy

Public Service Company of Colorado (Xcel Energy), Colorado's largest investor-owned utility, has a privacy policy that governs the release of customer data. Xcel does not disclose personal information or customer energy use data except as provided for in the privacy policy. This means that, apart from several exceptions including aggregated data, Xcel customers should expect the company to keep confidential all information it collects about its customers. In its policy, Xcel notifies its customers that the company "may disclose aggregated data to third parties," and that it "aggregate[s] the information in accordance with applicable legal requirements, including those designed to prevent the re-identification of the information."[32] Xcel also has a complaint process for any party that believes the utility is improperly obstructing requests for aggregated data.[33]

29 Id.

30 Code of Colorado Regulations, Title 4, 723-3, 3031.

31 The California Public Utilities Commission (PUC) adopted "Rules Regarding Privacy and Security Protections for Energy Usage Data" for California's investor-owned utilities in 2011, permitting utilities to use "aggregated usage data that is removed of all personally-identifiable information to be used for analysis, reporting or program management provided that the release of that data does not disclose or reveal specific customer information because of the size of the group, rate classification, or nature of the information." California Public Utilities Commission. (2011, July). Rulemaking 08-12-009, Decision 11-07-056. However, no rulings codified a meter number aggregation threshold that would ensure customer privacy. For a period, utilities used the "15/15" calculation as a tool to achieve a safe level of aggregation to ensure anonymity of the customer, although there are indications that they are relying on individual customer waivers pending California PUC action. The California PUC is currently working with the utilities to develop threshold policy consistent implementation of the privacy rules for aggregated data. See, e.g., presentation by Jaclyn Hood of Pacific Gas and Electric Co. on the panel entitled, "The Program Administrator's Role in Driving Energy Performance Benchmarking," at the ACEEE National Symposium on Market Transformation, Washington DC, March 25, 2013. Available at: http://www.aceee.org/conferences/2013/mt/program

32 Xcel Energy. (2012, August). Xcel energy privacy policy. Available at: https://www.xcelenergy.com/staticfiles/xe/Admin/Xcel%20Online%20Privacy%20Policy.pdf

33 4 Code of Colorado Regulations 723-1-1301; 4 Code of Colorado Regulations 723-1-1302.

Washington DC

Washington DC adopted benchmarking rules in early 2013, and Pepco, the company providing utility service in the District, has developed a customer energy use aggregation policy that supports the rules.

According to the District's Department of Environment, benchmarking comparisons "have been shown to drive energy efficiency upgrades and increase occupancy rates and property values."[34] A District-wide inventory of greenhouse gas emissions found that "buildings are responsible for 75% of the greenhouse gas emissions in the District…"[35] Effectively managing and reducing unnecessary energy consumption in the District's buildings has thus become "central to the vision for a Sustainable DC."[36]

> *"I remember back in the sixties, one of my favorite sayings was, "Information is power." It still is true today. You tell people how efficient their building is, what it might be, you let them do the cost figures, going out over a few years, and bing, bing, bing, bing, you're not requiring things to happen, you're enabling things to happen. Give people the right information, and they make smart choices."*
>
> — Gina McCarthy in a speech at Georgetown Climate Center's event "Promoting Low-Carbon Solutions and a Resilient Future Together," Feb. 2013.

The District adopted the Green Building Act of 2006 and the Clean and Affordable Energy Act of 2008, which establish requirements for the:

- District's government to measure and report the energy use of all public buildings 10,000 gross square feet or larger[37], and
- Owners of private buildings over 50,000 gross square feet to also measure and annually report the energy performance of their buildings.[38]

Washington DC also selected the EPA's Portfolio Manager as its required benchmarking tool.

Pepco

Pepco, a subsidiary of Pepco Holdings, Inc., serving customers in the District of Columbia and Maryland, has policies to protect confidentiality of customer information, including energy usage data.[39] To facilitate access to consumer energy data, Pepco developed a *Building Electricity Consumption Data Request Form.*[40] This is part of Pepco's policy to assist building owners to obtain "historical consumption data of a building that has multiple, separately metered tenant accounts, and where the building owner is unable to obtain consumption data from all individually metered tenants…"[41]

Pepco recognizes that it has a duty to protect the confidentiality of customer information. So it provides aggregated consumption data to a building owner subject to certain conditions. First, a building must have a minimum of five individually metered electric accounts to be aggregated. Requests for aggregated consumption data on buildings with fewer than five accounts require the written consent of the customer. To process the request, the requestor must provide to Pepco complete information identifying each electric meter servicing the building. A meter number for each electric service point is acceptable if individual customer account numbers are not available.

34 District Department of the Environment. Energy benchmarking. Available at: http://green.dc.gov/energybenchmarking

35 Id.

36 Id.

37 The DC Department of the Environment (DOE) and Department of General Services (DGS) released updated energy benchmarking results for more than 200 of the District government facilities managed by DGS, with new or updated results for fiscal years 2009 through 2012 on January 18, 2013. Available at: http://green.dc.gov/publication/public-benchmarking-report-dgs-fy09-12

38 The DC DOE published the final rulemaking for energy benchmarking of private buildings in the DC Register (60 DCR 367) on January 18, 2013. Available at: http://green.dc.gov/page/private-building-benchmarking

39 Vera, M. Pepco. Supporting energy benchmarking in the District of Columbia. Presented at ACEEE's 2013 National Symposium on Market Transformation. March 25, 2013. Available at: http://www.aceee.org/conferences/2013/mt/program

40 Pepco. Building electricity consumption data request form. Available at: http://www.pepco.com/business/services/consumptionrequestform/

41 Id.

States with Investigations Underway

Michigan

The Michigan Public Service Commission has a case underway regarding customer data privacy, and aggregated customer use data is one of the issues to be addressed. In October 2012, it issued an opening order into customer information and data privacy issues related to advanced metering infrastructure deployment.[42] After noting that it had engaged in an "extensive review of best practices recommended by consumer privacy advocates and of utility customer privacy measures implemented in other states," the Commission proposed a framework within which to develop customer privacy policies.

The proposed framework recognizes, among other things, that the privacy policy should include all information and data collected by the utility, define customer usage data, and protect all customers from unauthorized disclosure or use. It also acknowledges that customer usage data only be "disclosed to third parties with the customer's written consent." The order further proposes that the "privacy policy should not apply to aggregate information, containing general characteristics of a customer group, used for analysis, reporting, or program design purposes."[43]

Minnesota

In December 2012, the Minnesota Public Utilities Commission opened an investigation after receiving a proposed privacy tariff from Xcel Energy. In the initial filing, Xcel proposed a number of items, including but not limited to limitations on liability and a 15/15 standard for aggregated customer usage data. The generic proceeding under way is a notice of inquiry to gather more information from rate-regulated utilities overall as to customer data privacy practices.[44]

During early 2013 the PUC has been taking comments from stakeholders related to the collection, storage, and dissemination of customer data, and to ascertain how utilities in Minnesota can both use customer data and ensure its protection. At its May 20, 2013 meeting, the commission decided to proceed with a generic docket and related processes.

42 Michigan Public Service Commission. (2012, October). In the matter, on the Commission's own motion, to review issues concerning customer information and data privacy related to advanced metering infrastructure deployment. Docket U-17102. Michigan utilities are implementing new programs in renewable energy and energy efficiency that may include the acquisition by the utility, an affiliate, or a utility contractor, of information that goes beyond the type of limited information traditionally collected and maintained by the utility. Id.

43 Id.

44 Minnesota Public Utilities Commission. In the matter of a Commission inquiry into privacy policies of rate-regulated energy utilities. Docket Number/s: E,G-999/CI-12-1344.

5. Conclusion

As recognized by various jurisdictions, utility companies, NARUC, SEE Action, and others, benchmarking commercial buildings using aggregated customer data is a fundamental step in managing costs associated with operating buildings and in ensuring their improved energy performance.

In a February 2013 speech at Georgetown University, Gina McCarthy, Assistant Administrator for the EPA's Office of Air and Radiation, said:

> *I remember back in the sixties, one of my favorite sayings was, "Information is power." It still is true today. You tell people how efficient their building is, what it might be, you let them do the cost figures, going out over a few years, and bing, bing, bing, bing, you're not requiring things to happen, you're enabling things to happen. Give people the right information, and they make smart choices.*[45]

Today, two years after NARUC passed its "Resolution on Access to Whole-Building Energy Data and Automated Benchmarking," there is moderate progress across the country in providing building owners with aggregated building data. To increase market penetration of benchmarking and for utilities and the commercial building sector to capitalize upon these benefits, building owners and operators continue to need better access to the relevant energy consumption data.

By developing aggregation policies and improving the access to information by building owners and third parties ready to invest their own capital, regulators can spur greater energy savings and market transformation across the building sector, and they can do so in a way that will ensure privacy and security protection of ratepayers.

45 McCarthy, G. U.S. Environmental Protection Agency. (2013, February). Speech at Georgetown Climate Center's event "Promoting low-carbon solutions and a resilient future together."

Appendix. Account Aggregation Thresholds at Selected Utilities/Jurisdictions[46]

Utility Company / PUC	Account Aggregation Threshold *Minimum number of accounts / maximum percentage of total energy usage one account can contribute*
Austin Energy (Texas)	4/80
Avista (Washington)	No specific threshold
California PUC	TBD
Colorado PUC	15/15
Commonwealth Edison (Illinois)	4
Consolidated Edison (New York)	No specific threshold
Pepco (District of Columbia)	5
Puget Sound Energy (Washington)	5
Seattle City Light (Washington)	No specific threshold

46 Krukowski, A. Institute for market transformation. Personal communication, June 2013 (citations omitted).

Resources

This paper has been a brief look at benchmarking and the need for aggregated customer data. For a more in-depth discussion of these issues, we recommend the following resources.

- NARUC. (2011). Resolution on access to whole-building energy data and automated benchmarking. Adopted by the Board of Directors July 20, 2011. Available at: http://www.naruc.org/Resolutions/Resolution%20on%20Access%20to%20Whole-Building%20Energy%20Data%20and%20automated%20Benchmarking.pdf

- Lichtenberg, S. (2010, December). Smart grid data: must there be conflict between energy management and consumer privacy? National Regulatory Research Institute. Available at: http://www.nrri.org/pubs/telecommunications/NRRI_smart_grid_privacy_dec10-17.pdf

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HOME OFFICE
50 State Street, Suite 3
Montpelier, Vermont 05602
802-223-8199
www.raponline.org