Open Data Access Standard Approaches

Panel on Access to Utility Data! Why Contractors Need It, Consumers Deserve It, and Utilities Should Provide It

Building Performance Association

2021 National Home Performance Conference
Agenda

• State Examples of Utility & Energy Data Sharing Initiatives
• Summary by Issue
• Drivers for Data Access & Barriers
• Regulator Perspectives
1 Overview of RAP’s Review
Subset of Utility and Energy Data Access:

Focus here on policies and practices governing the provision of **aggregated** or **anonymized** customer energy utility data **without** customer consent

- Commission orders
- Administrative rules
- Utility implementation (websites, forms, etc.)
- Reports completed for Commissions or other agencies
Anonymized Data vs. Aggregated Data

<table>
<thead>
<tr>
<th>Customer</th>
<th>Address</th>
<th>January 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>10 Main St</td>
<td>1,388 kWh</td>
</tr>
<tr>
<td>Brown</td>
<td>555 Elm St</td>
<td>790 kWh</td>
</tr>
<tr>
<td>Cabrera</td>
<td>21 Park Ave</td>
<td>533 kWh</td>
</tr>
<tr>
<td>Davis</td>
<td>49 City Dr, Apt 1</td>
<td>475 kWh</td>
</tr>
<tr>
<td>Edwards</td>
<td>49 City Dr, Apt 2</td>
<td>404 kWh</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer</th>
<th>January 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,388 kWh</td>
</tr>
<tr>
<td>2</td>
<td>790 kWh</td>
</tr>
<tr>
<td>3</td>
<td>533 kWh</td>
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<tr>
<td>4</td>
<td>475 kWh</td>
</tr>
<tr>
<td>5</td>
<td>404 kWh</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># Customers</th>
<th>January 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3,590 kWh</td>
</tr>
</tbody>
</table>
Protecting Privacy: Screening Thresholds

• “ Screens” are used to prevent the release of aggregated or anonymized data sets that would put privacy at risk:
  - Minimum number of customers in the data set (e.g., 15)
  - Limit on the percentage contribution of any one customer to the total energy use in the data set (e.g., 15%)
    - “15/15” screen: at least 15 customers in the data set and no customer can represent more than 15% of total energy use in the data set
    - “4/**” screen: at least 4 customers, no limit on percentage of total energy use

• Data requests that don’t pass the screen require customer consent
Access with Customer Consent vs. Use of Aggregation Threshold

**Traditional Approach**
- All tenants complete printed or electronic form

**Best Practice Approach — Minimum Aggregation Threshold**
- If $> x^*$ tenants
  - Individual consent not needed; threshold usually $x = 2$ to $5$ tenants*
- or if $< x^*$ tenants
  - All tenants complete printed or electronic form

Jurisdictions Leading in Consideration of Data Access
2 State Examples
Colorado

- PUC Docket 14R-0394EG (July 2015 Decision)
- Electricity and gas data
- Segmented screens (aggregation thresholds)
  - For whole building benchmarking – 4/50
  - For all other aggregations – 15/15
- Community Energy Reports for larger communities (no data request necessary)
  - Municipalities with >50,000 residents, counties >100,000 residents
  - Annual usage by customer class
  - 15/15 screen applies to each customer class
# CO Community Energy Report Example

## ANNUAL COMMUNITY ENERGY REPORT BY XCEL ENERGY

<table>
<thead>
<tr>
<th>Community:</th>
<th>City of Denver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of Data:</td>
<td>2019</td>
</tr>
</tbody>
</table>

### Energy Consumption Data [4]

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>28,773</td>
<td>4,678,029,406</td>
<td>2,096,167</td>
<td>$357,680,290</td>
<td>0</td>
</tr>
<tr>
<td>Industrial</td>
<td>2,711</td>
<td>727,290,856</td>
<td>373,827</td>
<td>$59,881,995</td>
<td>0</td>
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<tr>
<td>Residential</td>
<td>307,775</td>
<td>1,610,409,008</td>
<td>934,663</td>
<td>$204,855,197</td>
<td>0</td>
</tr>
<tr>
<td>Street Lighting - Metered</td>
<td>n/a</td>
<td>892,141</td>
<td>456</td>
<td>$79,399</td>
<td>-</td>
</tr>
<tr>
<td>Street Lighting - Non-Metered/Customer Owne</td>
<td>n/a</td>
<td>203,952</td>
<td>130</td>
<td>$23,772</td>
<td>-</td>
</tr>
<tr>
<td>Street Lighting - Non-Metered/Xcel-Owned</td>
<td>n/a</td>
<td>51,647,554</td>
<td>26,547</td>
<td>$10,866,910</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>340,259</strong></td>
<td><strong>6,676,639,778</strong></td>
<td><strong>3,431,741</strong></td>
<td><strong>$333,425,562</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>18,336</td>
<td>137,027,983</td>
<td>726,248</td>
<td>$63,923,703</td>
<td>0</td>
</tr>
<tr>
<td>Industrial</td>
<td>2,697</td>
<td>64,027,120</td>
<td>339,344</td>
<td>$16,214,134</td>
<td>0</td>
</tr>
<tr>
<td>Residential</td>
<td>200,079</td>
<td>158,372,892</td>
<td>839,376</td>
<td>$111,500,885</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>224,102</strong></td>
<td><strong>369,427,975</strong></td>
<td><strong>1,094,966</strong></td>
<td><strong>$194,638,701</strong></td>
<td></td>
</tr>
</tbody>
</table>
Illinois

- ICC Docket 13-0506 ([January 2014 Order](#))
- Electricity data only, but more than in other states
- **Anonymized** customer data, not just aggregations
  - Grouped at ZIP+4 level for each customer class
  - 15/15 screen applied to each customer class
  - If ZIP+4 can’t pass screen, grouped at ZIP level
- **AMI interval data** where AMI is deployed
  - Interval lengths vary by utility and customer class
California Public Utilities Commission

- PUC Docket R.08-12-009 ([May 2014 Order](#))
- Electricity and gas data
- Segmented screens (*aggregation* thresholds)
  1. Monthly sum and average customer usage aggregated by zip code:
     - Residential – 100/*
     - Commercial or Agricultural – 15/15
     - Industrial – 15/15
  2. *Anonymized* monthly data by census block for local, state, or federal government agencies and academic researchers:
     - Residential, Commercial, or Agricultural – 15/20
     - Industrial – 5/25
- Zip code level data posted on utility websites (no data request needed)
- Standard NDA and consistent form for anonymized data requests
California Energy Commission

- CEC Docket 15-OIR-05 ([March 2018 regulations](#))
- Rulemaking to implement statewide whole building benchmarking law
- Electricity and gas data
- Segmented screens (aggregation thresholds)
  - Buildings with no residential accounts: 3/*
  - Buildings with ≥1 residential account: 5/*
Michigan

• Order #18-845 July 2020, Administrative Rules R-460-153, and Governing statute
• 2 utilities reviewed – DTE, Consumers Energy
• Data Privacy tariffs required – no consent needed for aggregated data – gas and electric covered
• Focus on Value-Added Programs (VAPS)
• April 2019 staff report to Commission; Next steps on data envisioned
New Hampshire

- Ongoing docket **DE 19– 197** began Dec. 2019 – development of a Statewide Multi-use Online Energy Data Platform
- Working from state legislation and PUC privacy regulations **363:37-38**
- Propose to allow aggregation and third-party access easily – standards under development
- City of Lebanon, NH recommending IL and NY standards, including commercial customers
**New York**

- **Case 20-M-0082** – Feb 11, 2021 order and May 29, 2020 staff white paper
- **Utility Energy Registry (UER)** – utility requirement to upload monthly data semi-annually, gas and electric
  - Screens – 15/15 residential; 6/40 – all other
- UER - designed to streamline community access to aggregated data; including commercial and industrial data
NY Utility Energy Registry

https://utilityregistry.org/app/#/
3 Examples by Issue
“In order to further develop the record on how best to refine the Standards, the Commission will request comment on the following topics:

- Whether the aggregation screens should be segmented into two (or more) distinct aggregation screens, with different threshold levels and requirements, ranging from building-level to community level, including consideration of multi-unit single owner rental properties and of the unique roles of building owners/managers and of local governments;
- Refinement of specific provisions of the contract requirements for anonymized data access;
- Establishment of uniform customer access forms;
- Identification of opportunities to appropriately streamline the data access process to reduce the total cost of aggregating and releasing data;
- Ascertaining the appropriate threshold for limiting application of the Standards to commercial/industrial natural gas and electric customers; and
- Aggregated CEUD for communities and other local units of government.”
Segmented Aggregation Screens

- Most states apply a single screen universally
- Exceptions
  - Previously noted: CO, CA, NY
  - AR (*proposal; no adopted policy to date*) – working group members discussed a 4/80 screen for whole building benchmarking and 15/15 for all other data requests
- Segmentation examples based on customer class and based on anonymized vs. aggregated vs. whole building “use cases”
Contract Requirements for Anonymized Data Access - Illinois

- Utilities require data requesters to sign an NDA
- Terms are unique to each utility
- **ComEd NDA** requires the data requester to agree to:
  - Delete any customer identifying information that they discover and notify ComEd
  - Not share the data publicly or with any other party
  - Not attempt to re-identify the anonymous customer account holders
- **Ameren NDA** is more focused on protecting the utility from lawsuits
Contract Requirements for Anonymized Data Access - California

• Researchers must sign an NDA with the utility
  • Utility can require pre-disclosure review of researcher’s information security & privacy controls/ protections

• Local governments don’t sign an NDA but accept terms of service:
  • They will use the data for the purposes stated in the request
  • They will not release the data to another third party or publicly disclose the data

• Utilities notify PUC prior to release of anonymized data and maintain a log of all data requests
Uniform Data Access Forms

• Single statewide data request form:
  • NJ – for whole building benchmarking data; data requests processed by Board of Public Utilities in cooperation with utilities
• Utilities ordered to develop uniform data request forms:
  • CA – for anonymized census block data
Opportunities to Streamline the Data Access Process

• Automatically post aggregated data to utility website (no data request necessary):
  - CO – community level
  - NY – community level
  - CA – zip code level

• NY inviting other jurisdictions to participate in a national UER
  - MN engaged through Great Plains Institute and the Department; privacy issues deferred to Commission
Threshold for Limiting Application of the Standard to C&I Customers

- No examples from other states of limits similar to MN
- NYSERDA UER report:
  - Notes that largest energy consumers (e.g., paper mills, cement plants) routinely report fuel usage to EPA for emissions inventories and permitting
  - This is almost always public information
  - Screening out these industrial customers won’t protect confidential information, only makes public information harder to get
- Conclusion: avoid “needless privacy failures”
Aggregated Data for Communities and Local Governments

Some states have focused on meeting the specific data needs of local governments:

- CO – Community Energy Reports
- NY – Utility Energy Registry
- CA – anonymized monthly usage data by census block available to local governments
4

State Policy Drivers for Data Access
City Climate Commitments

Exhibit 2 U.S. Coalition of Climate Actors*

*Map represents climate actors as of 2019 documented in Accelerating America’s Pledge.

Source: America’s Pledge/We Are Still In
Community Choice Aggregation

Authorized in 9 States:
- California
- Illinois
- Massachusetts
- New Hampshire*
- New Jersey
- New York
- Ohio
- Rhode Island
- Virginia*

Actively Investigating:
- Arizona
- Colorado
- Connecticut
- Maryland

Watch List/Potential:
- Oregon
- Washington

* Not yet implemented

Source: https://www.leanenergyus.org/cca-by-state
Building Benchmarking

- Case studies mentioned earlier
- DC example – annual benchmarking required since 2013
  - Public building – 10,000 sq ft or greater
  - Private buildings – 50,000 sq ft or greater (25,000 sq ft beginning in 2021, 10,000 in 2025)
- VT building benchmarking – Act 62 of 2019 – sought recommendations to Commission on building benchmarking – residential and commercial
- Many use EPA Energy Star Portfolio Manager
U.S. City, County, and State Policies for Existing Buildings: Benchmarking, Transparency, and Beyond

- Requirements of achieving performance targets or completing additional actions
- Benchmarking policy for public, commercial, and multifamily buildings adopted
- Benchmarking policy for public and commercial buildings adopted
Other Resources


- Institute for Market Transformation: BuildingRating website for municipal and state building benchmarking policies (2021)


- NY data access Framework staff whitepaper (May 2020)
About RAP

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Learn more about our work at raponline.org