

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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In the Matter of a Petition by Citizens Utility
Board of Minnesota to Adopt Open Data
Access Standards

ISSUE DATE: March 13, 2023

DOCKET NO. E,G-999/M-19-505

In the Matter of a Commission Inquiry into
Privacy Policies of Rate-Regulated Energy
Utilities

DOCKET NO. E,G-999/CI-12-1344

ORDER REFINING OPEN DATA
ACCESS STANDARDS

PROCEDURAL HISTORY

On February 11, 2022, the Commission issued notice of comment period requesting comments on what actions, if any, the Commission should take to further refine the Open Data Access Standards.

By May 23, 2022, the Commission received initial comments filed by the following participants:

- Department of Commerce – Division of Energy Resources (the Department)
- City of Minneapolis
- LHB, Inc. (LHB)¹
- CenterPoint Energy (CenterPoint)
- Minnesota Energy Resources Corporation (MERC)
- Otter Tail Power Company (Otter Tail)
- Xcel Energy (Xcel)
- Office of the Attorney General – Residential Utilities and Antitrust Division (OAG)
- Minnesota Power
- Dakota Electric Association (Dakota Electric)
- Citizens Utility Board of Minnesota (CUB)

¹ LHB is an engineering consulting firm.

By September 6, 2022, the following participants filed reply comments:

- Local Governments and Technical Assistance Providers (LGTAP)²
- CUB
- LHB
- CenterPoint
- MERC
- Otter Tail
- Xcel
- OAG
- Minnesota Power
- Minnesota Large Industrial Group (MLIG)³
- Professor Gabriel Chan, Professor Elise Harrington, Sarah Komoroski, and Anna Giesting (Chan et al.)

On December 15, 2022, the Commission met to consider the matter.

FINDINGS AND CONCLUSIONS

I. Background

A. Introduction

Customer energy use data (CEUD) can help identify beneficial opportunities for energy efficiency, conservation, and economic competitiveness, and to measure the effectiveness of such efforts, but disclosure of CEUD could also reveal confidential information about consumers. Prior Commission decisions have allowed limited access to this data and balanced the benefits with potential privacy risks. Based on the robust record developed in this proceeding, this order outlines an updated framework that will incrementally expand access to CEUD for beneficial purposes while maintaining certain restrictions that minimize privacy risks and misuse of sensitive data.

B. 2017 Order

In 2012, the Commission initiated an investigation into the collection, storage, and dissemination of customer data by rate-regulated utilities. From 2013 to 2015, a workgroup comprised of over 30 stakeholder groups met to explore and recommend policies addressing CEUD use and the balancing of customer privacy and the state's energy goals.

² LGTAP is comprised of the cities of Minneapolis, St. Paul, St. Louis Park, and Richfield, as well as the Metropolitan Council, the Institute for Market Transformation, and Local Climate Solutions.

³ MLIG is a consortium of large industrial end-users of electricity in Minnesota spanning multiple utilities.

On January 19, 2017, the Commission issued an order on the appropriate uses of CEUD.⁴ The order defined CEUD as “data collected from the utility customer meters that reflects the quantity, quality, or timing of customers’ natural gas or electric usage or electricity production.” It also prohibited utilities from disclosing CEUD without customer consent unless the utility adequately protected its customers’ anonymity. The Commission did not implement specific processes to accomplish these objectives. Instead, it required utilities to create their own policies on aggregating and releasing CEUD, file those policies with the Commission, and track and report costs associated with CEUD requests.

C. 2020 Order

On November 20, 2020, the Commission issued an order approving Open Data Access Standards (the Standards or ODAS) for electric and natural gas utilities with more than 50,000 customers.⁵ The Standards address collection and sharing of CEUD⁶ for use by third parties. The Standards address both aggregated CEUD and anonymized CEUD and impose different standards for providing access to each type of CEUD. Under the Standards, aggregated CEUD datasets must pass a 4/50 screen, meaning the data must come from at least 4 customers with no single customer’s energy use exceeding 50% of the total energy consumption within the dataset. Anonymized CEUD must pass a 15/15 screen meaning that the dataset must contain at least 15 customers and no single customer’s energy use can exceed 15% of the total energy consumption for the dataset.

The Commission explained that incrementally applying the Standards would help maintain the appropriate balance between customer privacy and CEUD access, and the order limited the application of the approved Standards to whole-building aggregated CEUD for building owners and benchmarking purposes. It did not authorize application of the Standards to any use case related to anonymized CEUD.⁷ The order also exempted commercial/industrial (C&I) customers with peak demands greater than 5 megawatts (MW) from the Standards.

The Commission noted the importance of continuing to improve the Standards as utilities explore innovations such as grid modernization, advanced-metering infrastructure, and time-differentiated rates that rely on CEUD. The Commission ordered additional record development to inform its decisions on further refinement of the Standards.

⁴ *In the Matter of a Commission Inquiry into Privacy Policies of Rate-Regulated Energy Utilities*, Docket No. E,G-999/CI-12-1344, Order Governing Disclosure of Customer Energy Use Data to Third Parties, Requiring Filing of Privacy Policies and Cost Data, and Soliciting Comment (January 19, 2017).

⁵ *In the Matter of a Petition by Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, Order Adopting Open Data Access Standards and Establishing Further Proceedings (November 20, 2020).

⁶ The Standards employ the definition of CEUD adopted in the January 19, 2017 order, but the Standards also state, “For the purposes of these Open Data Access Standards, CEUD includes data regarding: (1) the amount and timing of energy use and production; (2) peak load contributions and the amount and timing of demand; and (3) rate class.”

⁷ CEUD requests for use cases not applicable to the Standards remained subject to utilities’ individual privacy screening policies.

D. Continued Refinement of CEUD Access

On April 13, 2022, the Commission issued an order authorizing certain utilities' disclosure of CEUD confidence intervals reflecting tenants' average energy usage to local governments without prior customer consent.⁸ The Commission approved CenterPoint and Xcel's methodology to help facilitate compliance with local residential property ordinances that required disclosure of CEUD. Prior to the Commission's order, application of the Standards would have required property owners to obtain written consent from all tenants living in rental properties with 1–3 units to comply with a Minneapolis ordinance requiring residential property owners to disclose building average energy use information to prospective tenants.⁹

In February 2021, the Commission hosted a technical conference with the expertise of the Regulatory Assistance Project (RAP) to educate parties about other states' approaches to customer data practices and standards. On October 25, 2021, RAP filed an issue brief that explored policies addressing CEUD access in Minnesota and in other jurisdictions.¹⁰

The Commission requested comments on further refinement of the Standards and sought input on several unresolved issues identified in ordering paragraph four of the November 20, 2020 order including segmentation of data screens, contract requirements for anonymized CEUD access, uniform access forms, thresholds for C&I customers' data and their peak demand, opportunities to streamline data access, and aggregated CEUD for communities and local units of government. This order considers the positions of commenters on these issues and addresses additional areas of concern raised in the comments.

II. Further Refinement of the Standards

A. Positions of the Commenters

As outlined in more detail in subsequent sections addressing individual issues, most commenters supported or did not oppose Commission action to further refine the Standards.¹¹ On many issues, however, commenters disagreed on how the Commission should apply specific policies to appropriately balance potentially competing goals of increasing data access and minimizing potential risks to customer privacy. Commenters such as LHB, CUB, and LGTAP advocated for

⁸ *In the Matter of a Joint Petition for Approval of the Process to Release Whole Building Data to Facilitate Local Residential Rental Ordinance Compliance*, Docket No. E,G002,008/M-21-761, Order Approving Petition with Modifications (April 13, 2022).

⁹ As of 2021, there were approximately 23,000 such units in Minneapolis, which was approximately 25% of the city's rental units. See *In the Matter of a Joint Petition for Approval of the Process to Release Whole Building Data to Facilitate Local Residential Rental Ordinance Compliance*, Docket No. E,G002,008/M-21-761, Order Approving Petition with Modifications, p. 3 (April 13, 2022).

¹⁰ Regulatory Assistance Project, *Access to Aggregated or Anonymized Customer Energy Use Data*, filed in Docket No. E,G-999/M-19-505 (October 25, 2021).

¹¹ Dakota Electric did not advocate for or against refining the Standards and noted that as a cooperative, the Standards do not apply to it.

changes that would greatly expand access to data under the Standards and improve the quality of the data released. Utilities, MLIG, the Department, and OAG generally favored smaller, more incremental changes or preservation of the status quo to maintain existing protections for customer data until the Commission can more fully understand the implications of any proposed changes.

Many commenters also expressed concerns related to how expanding the Standards' scope, application, or requirements could increase costs to utilities and ratepayers. Smaller utilities specifically opposed modifying the Standards in ways that create one-size-fits-all policies that fail to recognize their unique situations and impose additional administrative burdens and costs with only marginal benefit. Recommendations largely focused on the Standards' treatment of aggregated CEUD as most commenters recognized that Commission action approving use cases for anonymized CEUD would benefit from additional record development.

III. Segmentation of Data Screens

The Standards differentiate anonymized CEUD and aggregated CEUD and generally require each type of data to pass a standard data privacy screen prior to its release to a third party. Aggregated CEUD must pass a 4/50 screen, and anonymized CEUD must pass a 15/15 screen. However, as the Standards currently only apply to whole-building data for building owners and benchmarking purposes, all other requests for aggregated CEUD and all requests for anonymized CEUD are subject to each utility's individual privacy screening policies applicable to that type of data.

A. Positions of the Commenters

1. Aggregation Screen

CUB stated that it found no privacy justification to support application of different screens to different customer classes. OAG argued that utilities should segment data screens by class and apply the most restrictive screen to the residential class and proposed initially applying a 15/15 screen. LHB and CUB argued that applying a 15/15 screen to residential class customers was unlikely to provide more privacy protection than a 4/50 screen because the residential data class is unlikely to fail even the more restrictive 15/15 screen.

CUB, LHB, and LGTAP supported maintaining the 4/50 screen for all aggregated CEUD requests. CUB stated that it was unaware of any privacy basis that justifies using different screening standards for different sets of aggregated CEUD whether the data comes from a community-level or building-level source. LHB, CUB, and the Department noted that it made little sense to apply a more restrictive standard to community-level data than to whole-building data as the latter may be more sensitive because it is tied to a specific address. LHB and LGTAP argued that the 15/15 standard applied to community-level CEUD was overly restrictive and unnecessarily excluded valuable data.

LHB and CUB referenced New York Public Service Commission (NYPSC) actions that found the 15/15 screen it initially applied to community-wide aggregated data was overly restrictive and blocked valuable data. The NYPSC subsequently modified the 15/15 aggregation screen to

adopt a state-wide 4/50 aggregation screen to apply generally to all aggregated data sets reporting monthly or annual energy usage totals.

LHB also explained that a 15/15 standard necessitates frequent adjustments to the parameters of data included in the resulting datasets, which can lead to inconsistent data that creates challenges when attempting to examine changes over time.

Utilities supported continuing to apply their own individual data-aggregation procedures for community-level data and generally opposed the application of a universal aggregation standard to all utilities.

While Xcel noted that 4/50 is the generally accepted standard for whole-building data, it contended that there is no generally accepted aggregation standard for other aggregated CEUD. Xcel explained that it has applied a 15/15 screen to aggregated community-level CEUD because community data includes a broad and diverse mix of various business and residential customers, including single-family, duplexes, triplexes, townhomes, apartments, and condos, all of which have unique usage amounts and patterns that justify a higher level of aggregation to prevent reverse engineering of customer data. Xcel supported its own continued use of a 15/15 aggregation standard for non-whole-building CEUD but noted that other aggregation standards may be appropriate for other utilities if a 15/15 standard would not adequately protect their customers' privacy or confidentiality due to the size or other attributes of those utilities.

Given its past practices of creating aggregated datasets with a 15/15 screen, Xcel explained that if the Commission mandates application of different screening standards to datasets previously created under a 15/15 screen, it may experience challenges maintaining consistency of the data while ensuring customer privacy. CenterPoint agreed that it may face challenges if the Commission mandates a new aggregation screen standard applicable to previously released data. However, Xcel and CenterPoint noted that they would be able to modify the parameters of datasets generated under a new screen if they result in data that would compromise customer privacy.

2. Anonymization Screen

Otter Tail expressed concern about applying a 15/15 screen to anonymized CEUD because anonymized CEUD poses higher reidentification risk. Noting that Colorado excludes anonymized data from its open access standards, Otter Tail recommended that the Commission remove anonymized CEUD from the Standards.

CUB agreed that anonymized data poses a greater risk for reidentification, but it argued that the Standards' current 15/15 screen is appropriately restrictive especially when applied in conjunction with other measures in the Standards that impose non-disclosure agreement (NDA) requirements prior to the data's release and limit the third parties who can request anonymized data. OAG supported maintaining the 15/15 standard for anonymized CEUD for residential customers if release of this data remains limited to the currently authorized third parties.

B. Commission Action

The Commission finds that maintaining the Standards' 4/50 aggregation screen and 15/15 anonymization screen serves the public interest by facilitating production of valuable data and protecting individual customers' CEUD.

While the Commission recognizes that differences between states may support varied approaches to CEUD access, the experience in New York is instructive. New York first applied a 15/15 screen to aggregated community-wide CEUD only to find that the 15/15 screen blocked access to valuable data, making it difficult for requesters to use the data to serve the intended public purpose. New York ultimately established a 4/50 aggregation screen to generally apply to all aggregated data sets reporting monthly or annual energy usage totals.

Commenters generally lauded Xcel for its ongoing efforts producing Community Energy Reports (CERs) that make community-wide aggregated energy usage data easily accessible. However, several noted that Xcel's utilization of the 15/15 screen when compiling CERs has created datasets that lack important data. According to CUB, 85% of Xcel's CERs fail a 15/15 screen when C&I classes are reported separately, and LHB noted that complete C&I data is not reported in over half of the 75 cities where LHB has requested data. Applying a 4/50 screen will provide more complete community-level aggregated data that serves important public purposes including allowing governmental entities to make informed decisions related to implementing and achieving climate goals and measuring the effectiveness of their efforts.

The Commission will maintain the Standards' 15/15 screen for anonymized CEUD. The record remains underdeveloped related to anonymized CEUD, and it does not currently support significant modifications to the Standards' treatment of anonymized data.

IV. Contract Requirements for Access to Anonymized CEUD

Under the Standards, utilities have a right to refuse to provide anonymized CEUD to a third party if that party fails to execute an NDA contract with the utility that meets certain minimum standards designed to protect customer data and prevent its misuse.

A. Positions of the Commenters

OAG recommended expanding the compulsory contract terms in the Standards to address breach, fees, consistency, and applicability of NDAs to certain governmental officials, and it also advocated for allowing utilities to have more discretion in crafting specific terms of their NDAs. OAG recommended requiring utilities to file their NDAs with the Commission for review.

Xcel and CenterPoint noted that development of specific contractual provisions related to anonymized CEUD appears premature and speculative because there are no currently approved use cases for anonymized CEUD access under the Standards.

Otter Tail expressed concern about the practicality, effectiveness, and costs of administering contracts with third parties and recommended simply removing anonymized data from the Standards, which would eliminate the need for any contract requirements. If anonymized CEUD

remains in the Standards, Otter Tail supported allowing each utility to develop its own NDA form.

CUB supported allowing utilities to develop their own NDAs subject to minimum requirements outlined in the Standards, while the Department and MERC recommended no changes to the contract requirement.

B. Commission Action

The Commission will retain the Standards' current contract requirements for anonymized CEUD access. Evaluation of this issue will benefit from additional development of the record. The Commission has yet to authorize a use case for anonymized CEUD requested under the Standards, and additional record development addressing issues related to anonymized CEUD use and access will allow the Commission to assess changes to the contract requirements in conjunction with any contemplated use cases.

V. Uniform Access Forms

The Standards require that utilities make CEUD available upon the written or electronic request of any qualifying third party, but there are no requirements that utilities adopt a uniform data request form.

A. Positions of the Commenters

Utilities generally did not recommend requiring adoption or implementation of uniform access forms for CEUD requests, and the Department recommended no changes to the current process. MERC noted concern that such requirements could be burdensome and costly to smaller utilities who do not receive many CEUD requests. Otter Tail did not object to uniform access forms if they can reasonably accommodate the different needs and resources of each utility.

OAG suggested that uniform access forms had potential to enable third parties to more easily compare data across utilities and expressed interest in developing the record as to whether such comparisons are desired and the feasibility of developing a uniform request form.

LHB noted the importance of being able to compare information across utilities but stated that such comparisons were most impacted by the format of the data received rather than the method of the request. While LHB acknowledged adoption of a universal data request form may create some efficiencies, it recognized that smaller utilities may face increased burden and cost. LHB emphasized that consistently receiving data in a format that is machine readable and easily processed into its database is a higher priority than developing a standardized request form.

B. Commission Action

The record does not currently support developing standardized CEUD request forms, and the Commission will retain the Standards' current requirements that utilities have data-request procedures that are convenient for the typical third party and posted on the utilities' websites.

VI. Opportunities to Streamline Data Access

A. Positions of the Commenters

Commenters proposed various recommendations to improve data-access processes, and some raised concerns that imposing one-size-fits-all methods on all utilities may be overbroad and unnecessary as applied to an individual utility's unique circumstances. Recommendations addressed standardization of data including release format and customer class parameters, proactive publication of aggregated community data, and designation of a utility contact for CEUD requests.

1. Standardization of Data

a. Data Format

CUB suggested requiring a uniform, machine-readable release format for aggregated data requests and referenced Xcel's CERs as providing a potentially beneficial data model. No commenters expressed opposition to a requirement to release data in a machine-readable format, but MERC argued that a uniform data format was unnecessary because the process it currently uses provides flexibility for itself and requesters. As a starting point for standardizing data format, CenterPoint proposed development of a template that could receive input from stakeholders.

b. Data Parameters

LHB noted that it has faced challenges working with community-wide data because of inconsistent classification of variables used in the aggregation process. LHB asserted that data related to geographic boundaries and customer class were especially problematic and recommended adopting standard definitions of these variables to create more consistent data that would facilitate comparisons over time and between different utilities and locations. To maximize the benefit of aggregated CEUD data with other publicly available data, it suggested that any standards and processes adopted align with reporting requirements outlined in Minnesota Rule 7610 and Energy Information Administration (EIA) Forms 861 and 176.

OAG proposed developing uniform customer class definitions to ensure that privacy screens are applied consistently across utilities. MERC questioned the feasibility of developing universal customer class definitions, noting that each Minnesota utility has different definitions of customer classes and rate schedules within their tariffs. Similarly, Otter Tail and CenterPoint noted that differences across utilities make standardization of processes and definitions problematic.

Alternatively, OAG recommended requiring each utility to clarify how it defines its individual customer classes. The Department, CUB, and LGTAP supported this recommendation.

2. Mandatory CERs

The Department supported utilities proactively publishing CERs on their websites, referencing Xcel's current practice as an example. The Department suggested that such a system would allow utilities to retain control over the release of customer data while third parties would have easier access to community-level data without the need to specifically request it. While the

Department noted potential efficiencies of such a system, it recognized that it may require further discussion among stakeholders.

MERC and Minnesota Power opposed requiring all utilities to publish CERs, with MERC noting that it already makes multiple filings containing usage data. Both noted receiving minimal requests for aggregated CEUD and argued that the significant resources required to generate CERs would impose costs that greatly outweigh the public benefits provided by the data. Otter Tail echoed these sentiments and expressed concerns about imposing additional processes or requirements on all utilities to address issues experienced only by certain utilities that receive many CEUD requests.

3. Designated Point of Contact

The Department, CUB, LGTAP, LHB, and OAG supported requiring utilities to designate a point of contact to respond to CEUD inquiries. While other commenters generally did not oppose this recommendation, MERC emphasized that it did not perceive any problems with its current ability to effectively respond to CEUD requests and expressed a concern that imposing additional requirements, including a specific designated point of contact, may create disruptive administrative burdens.

B. Commission Action

The Commission will impose several requirements on utilities subject to the Standards that will streamline CEUD requests and improve the consistency of requested data to make it more useful in serving the public interest.

First, the Commission will require utilities to produce aggregated CEUD (at other than whole-building level) in a machine-readable format that includes customer class, number of customers by customer class, energy consumption by customer class, and number of customers removed from the dataset by customer class. The Commission will also require CEUD reports to clearly show how the utility determines which class a customer belongs to and how it determines customer location. While these requirements do not standardize definitions or processes related to a utility's generation of aggregated CEUD datasets, they will help requesters to contextualize the data and facilitate better comparisons between datasets.

Second, the Commission will require utilities to display contact information on their websites for third-party CEUD requests and inquiries. This will impose no additional burden on some utilities as they already comply with the requirement, but it is important that potential requesters of CEUD can easily determine how to navigate each utility's data-request procedure.

The Commission recognizes that there may be potential benefits of standardizing definitions of customer classes across utilities and requiring all utilities to provide CERs; however, at this time, the unique circumstances of each utility do not currently support adopting these measures.

VII. Thresholds for Including C&I Customer Data

The order adopting the Standards recognized unique privacy concerns of large-industrial facilities and stated that the Standards did not apply to C&I customers with peak demands greater than 5 MW.

A. Positions of the Commenters

1. Exemption Opponents

CUB, LHB, and LGTAP contended that a blanket exemption for large customers is overbroad and unnecessary because the standard privacy screen is adequate to remove data of any customers who are large enough to appear conspicuous in resulting datasets. CUB and OAG noted that none of the states included in the RAP survey included a blanket exemption from data access standards based on customers' peak demand.

CUB explained that large customer data provides value to local governments because reducing the emissions of large customers is essential to meeting state and local greenhouse-gas emissions-reduction goals. CUB noted that reviewing large customer data could help interested parties monitor progress toward state and local emissions goals and several municipal programs applicable to large customers that provide renewable energy incentives or have goals of reducing emissions.

Both CUB and LHB noted that energy use data of large customers is already included in publicly available sources including CERs created by Xcel and annual utility reports pursuant to Minn. R. 7610. They also noted that the largest customers are subject to federal reporting requirements through EPA programs like those under Title V and the Mandatory Greenhouse Gas Reporting Rule and the EIA's power reporting program Forms 861 and 923. Because this data is available elsewhere, CUB argued that a blanket exemption for large customers could undermine the protections for exempt customers because one could use data from other sources to compare aggregated data values created with and without the exemption and attribute the difference to the largest customers in the communities represented in the data.

The Department also expressed concern that an ongoing exemption from the Standards could create more risk to privacy than protection for the exempt customers. The Department noted that applying the exemption to community-wide data could result in the availability of less data than was previously available, as Xcel has not applied the exemption for large customers when generating its CERs. Rather than maintaining the exemption, the Department suggested potentially implementing a more restrictive screen for data of large C&I customers.

Xcel and CenterPoint stated that application of an appropriate privacy screen would adequately protect large C&I customers' privacy without the need for a peak-demand exemption. CenterPoint explained that it uses a case-by-case threshold analysis for community-level data and noted that the Standards allow utilities to refuse to disclose CEUD when they reasonably believe the data may allow a third party to reidentify a customer's energy use. CenterPoint also noted that it does not maintain information on customers' peak electric demand, so it lacks information necessary to implement the exemption based on customers' electric requirements.

If the Commission determines that it is necessary to retain an exemption, CUB proposed only exempting large users from building-level aggregated data and anonymized data and/or exempting Minnesota Power's Large Power class comprised of a small number of especially large customers. CUB also recommended creating a mechanism for individual customers to opt out of the exemption and suggested that hospitals and educational institutions may prefer to have their data included in responses to data requests.

CUB and LHB also recommended that customers that report their energy use data publicly should be included in data responses to CEUD requests under the Standards irrespective of any exemption or data screen failure. They argued that allowing the exclusion of already public data provides no protection to customers' privacy while reducing the quality of data produced to requesters.

2. Exemption Supporters

While acknowledging that stakeholders are analyzing multiple issues in this docket, MLIG stated that its primary objective is the retention of the exemption from the Standards for large industrial customers. MLIG argued that the rationale of other commenters supporting removal of the exemption relies on faulty premises. First, MLIG contested CUB's assertion that industrial users already disclose their CEUD publicly. Second, MLIG disagreed with assertions that the absence of industrial customers' data makes it easier to back-calculate a specific customer's energy usage.

MLIG asserted that there is no record support to conclude that public sources disclose industrial customers' electric energy usage. MLIG noted that CUB identified public reports of fuel usage or general energy consumption but failed to identify any reports of electric energy usage. Similarly, MLIG contended that the record contains no evidence demonstrating an actual ability to back-calculate a customer's electric energy usage and notes that CUB acknowledged it had not conducted any such calculation, but rather referenced an analyst's speculation that this type of calculation may be possible. MLIG argued that it has previously provided evidence demonstrating how including industrial customers while using the data aggregation threshold supported by CUB can allow reverse-engineering of industrial customer data to reveal an individual customer's electric energy usage. MLIG cautioned against disregarding its concerns without sufficient evidence and urged the Commission to retain the exemption.

Minnesota Power, Otter Tail, and MERC also supported retaining the 5 MW exemption to safeguard sensitive customer electric energy use data. Minnesota Power expressed further concern that eliminating the exemption would require it to engage in labor-intensive efforts to generate datasets capable of passing the applicable screen. Otter Tail argued that the current 5 MW exemption is underinclusive and proposed decreasing the peak demand threshold to include more customers. Minnesota Power noted that a decreased threshold would lead to fewer screening failures and reduce the manual labor necessary to respond to CEUD requests. MERC supported creating a similar exemption threshold for large C&I natural gas customers.

If the Commission determines it is appropriate to reassess the exemption, MLIG asserted that a contested case proceeding would be necessary to adequately address the issue and resolve disputed facts.

B. Commission Action

The Commission finds that the record does not support continuing to exempt C&I customers with peak demands over 5 MW from the Standards for all use cases. The Commission will, however, continue to exempt these large customers from application of the Standards for building-level aggregated CEUD and anonymized CEUD.

Several commenters noted that the RAP issue brief shows that no other state it examined includes an exemption from the state's open access standards based on customers' peak demand. Each state has developed a unique CEUD-access framework to balance customer privacy with the greater public benefits, suggesting that there is no single method that meets the specific needs of every state. However, no other state found it necessary to include a blanket exemption for large customers, which may indicate that including one in Minnesota is not the best way to accomplish the goals of the Standards.

In 2020, when the Commission first implemented the Standards, it considered whether to include the 5 MW exemption and to which use cases the Standards should apply. At that time, it authorized limited application of the Standards to whole-building aggregated CEUD for building owners and benchmarking, so exempting all large customers from the Standards had little-to-no impact on the data that third parties could request under the Standards or the public purposes supported by use of the data. As the Commission now considers approving a use case for community-level aggregated CEUD, continuing to exclude all large customer data could significantly reduce the ability of third parties to use the requested data to further important public interests.

Additionally, some utilities have already been providing community-level aggregated CEUD as Xcel does through its CERs. These existing reports do not automatically exclude large customer data and will include it when doing so does not create a failure of the applicable privacy screen or cause Xcel to conclude that the data's inclusion would compromise customer privacy or security. Applying the Standards to community-level CEUD while maintaining the exemption for large customers may create a more restrictive environment where third parties would have access to less community-level data than they do currently.

CUB and MLIG each presented an example of theoretical methods that they argued could allow third parties to use data obtained through requests under the Standards coupled with other publicly available data to reverse engineer data attributable to large customers. CUB's method was possible only with the exemption in place, while MLIG explained a process that could apply without the exemption. Fundamentally, both methods relied on comparisons of datasets that include large customer data with similar datasets that exclude it. While a third party could utilize either method to extrapolate some information that is not explicitly contained in any individual dataset, neither method would reliably reveal a single industrial customer's CEUD.¹²

¹² For example, MLIG's method requires the third party to make a request for a utility's aggregated system-wide CEUD, but the Standards do not allow utilities to provide aggregated system-wide CEUD to third parties.

In declining to exempt every large customer's data from inclusion in community-wide aggregated CEUD requested under the Standards, the Commission is not minimizing the legitimate privacy concerns created by including large customers' data in releases to third parties. Rather, the Commission is balancing these concerns with the demands for access to data necessary to address climate goals and other initiatives serving the public interest. Importantly, other mechanisms in the Standards protect customer privacy. Even without an exemption, all customer data must pass the utility's applicable privacy screen to be included in any released dataset. If the data of a large user successfully passes the privacy screen and is included in a dataset, the Standards provide utilities authority to withhold that data when they determine that the data's release could allow reidentification of a customer or be used in a manner that otherwise violates the Standards. Furthermore, the Standards limit the types of third parties who can request CEUD, which reduces the likelihood that released data will be deployed contrary to public purposes. Applying the exemption to community-level aggregated CEUD may provide an additional layer of protection for large customers, but a blanket exemption for all customers with high peak demand is overbroad and detrimental to the public purposes enabled by increased data access.

Additionally, the record demonstrates that some CEUD may already exist publicly due to a customer's compliance with various reporting requirements. If a customer publicly reports its energy usage elsewhere, utilities shall include a customer's CEUD in an aggregated dataset regardless of whether that customer's usage triggers a failure of the aggregation screen, so long as the time scale of the requested dataset and the public dataset are equivalent. The requesting third party has the burden to demonstrate that the relevant data requested already exists publicly and that the public dataset is equivalent.

VIII. Access to CEUD Under the Standards

The Standards outline the types of third-party people or entities that may request CEUD and authorize tax-exempt organizations based within the United States and certain domestic governmental entities to request both aggregated and anonymized CEUD.¹³ The Standards also authorize property owners and managers to request aggregated CEUD that applies to properties they own or manage. Entities that provide or seek to provide demand response, energy efficiency, or other services to a utility may access anonymized CEUD for the sole purpose of providing such services or preparing a proposal to do so for the utility; however, the Commission has not approved any use cases that apply the Standards to anonymized CEUD.

A. Positions of the Commenters

1. Providing Access to Additional Third Parties

CUB and LGTAP recommended not restricting the ability of any third party to request aggregated community-level CEUD. CUB minimized potential risks of expanding access by noting that much of the aggregated data contemplated by the Standards is already publicly

¹³ Prior to the decision in this order, the Standards authorized disclosure to U.S. federal government agencies and subdivisions; Minnesota government agencies, boards, and/or commissions; local government entities with jurisdiction within Minnesota; and government entities of federally recognized tribes that share Minnesota's geography.

distributed through initiatives such as Xcel's CERs, the Regional Indicators Initiative, and individual city benchmarking websites like the one created by Minneapolis.

CUB asserted that the current framework creates unnecessary barriers to access as entities who may be authorized to request access often partner with private consulting firms (e.g. LHB) to analyze energy use data within their jurisdictions. The Standards do not allow a for-profit, third-party consultant to request CEUD directly, and CUB argued the current framework imposes inefficiencies that increase taxpayer costs and delay access to data. If the Commission is unwilling to remove the limitations related to third parties, CUB suggested that they only apply to aggregated building-level CEUD requests.

Chan et al. advocated for providing researchers access to CEUD and explained that CEUD can be used to inform important regulatory policies including those addressing issues of just and nondiscriminatory rates. They noted that researchers operating under an institutional review board would ensure adequate protection of sensitive data.

The Department supported continuing to limit the types of third parties that can request aggregated CEUD and suggested imposing certain minimum requirements including that the third party be based in the United States and have a compelling public interest, research, or advocacy purpose for requesting the data. OAG, MERC, and CenterPoint supported the limits suggested by the Department. OAG also asserted that expanding access to any third party is overbroad and unnecessary, and that such a framework may result in ratepayers paying for production of CEUD that is then used to the ratepayers' detriment. LHB recommended ensuring that aggregated CEUD remains accessible to third parties under the Standards, but it was not opposed to the Department's recommendation to impose minimum requirements.

Minnesota Power supported maintaining the status quo on this issue. It expressed concern about increasing cyber threats and noted that customer and grid security could be adversely impacted by the dissemination of CEUD. Minnesota Power explained that many U.S.-based entities, including nonprofit organizations and corporations, can be influenced, directed, or funded by foreign interests, so the proposed U.S.-based requirement is insufficient to adequately safeguard potentially sensitive data. Minnesota Power also raised concerns about how expanding CEUD access to additional entities could inundate it with data requests and create new administrative burdens as the company would need to expend resources to determine if requesting entities meet the minimum requirements.

CUB questioned how expanded CEUD access would increase the cyber security concerns raised by Minnesota Power and stated that it was unable to identify such risks.

2. Access for Regional Units of Government

CUB proposed adding regional units of government to the list of third parties who may request CEUD. LHB, the Department, OAG, LGTAP, Xcel, and CenterPoint supported this recommendation. While MERC and Minnesota Power did not oppose this proposal, Minnesota Power requested clearly defining what constitutes a regional unit of government.

B. Commission Action

The Commission will add regional units of government to the entities authorized to request CEUD under the Standards and define regional units of government as regional planning boards, regional development commissions, and the Metropolitan Council.

Commenters in this docket broadly supported allowing CEUD access to regional units of government, which may assist them in achieving their policy goals. The Commission also recognizes concerns regarding potential burdens created by additional data requests and the potential for CEUD misuse. Continuing to restrict the types of third parties authorized to request CEUD will help to prevent misuse of potentially sensitive data and provide a mechanism to limit the number of requests utilities receive. It is important to gather insights on the impacts of other actions the Commission is taking to incrementally expand application of the Standards before allowing CEUD access to a significantly expanded pool of qualified third parties.

IX. Order of Operations in Response to a Screen Failure

Currently, the Standards provide no default practices for a utility when an aggregated data request fails a privacy screen, so each utility may respond differently in response to failed screens.

A. Positions of the Commenters

LHB and CUB explained that a utility's decisions to combine customer classes or exclude the triggering customer(s) in response to a request that failed an initial screen may create situations where subsequently pursuing an alternative approach to compiling that dataset could compromise data privacy. LHB stressed the importance of maintaining residential data separate from non-residential data to enable meaningful benchmarking in sectors that can be most impacted by community action.

CUB worked with LHB, the Metropolitan Council, Minneapolis, and Local Climate Solutions to develop a recommended order of operations that utilities could follow when attempting to provide useful data to requesters. While its proposal would provide a default process, CUB recognized that deviation from the order of operations may be warranted in situations where a requesting party would prefer that the data remain consistent with data produced in prior years.

The Department and CenterPoint recommended that utilities retain discretion to make any reasonable changes to CEUD requests to make them compliant with privacy screens.

MERC opposed mandating specific additional and potentially burdensome actions when responding to CEUD requests that fail an initial privacy screen. MERC noted that data requests vary with different circumstances, end goals, and data points, so attempting to standardize a process to troubleshoot screening failures may undermine the purpose of the Standards or, in some cases, fail to produce useful data.

OAG did not support adding an order of operations to the Standards, and it recommended mandating written customer consent for release of data if a CEUD request fails the applicable screen.

B. Commission Action

The Commission finds that including a default process for utilities to follow when an aggregated data request fails a privacy screen will further the goals of the Standards. However, rigid application in response to all requests may be counterproductive by leading to the creation of datasets that eventually pass the applicable screen, but that are ultimately not tailored to the needs of the requesters. Therefore, in addition to including an order of operations, the Commission will allow requesters to identify which solutions would work best for their needs at the time of their requests.

X. Fees and Cost Recovery

The Standards currently allow utilities to charge a fee for the actual costs incurred to create and deliver requested data; however, the November 20, 2020 order states, “Building level and public purpose data aggregation will be provided by utilities without charge to building owners/managers, to local units of government, and to non-profit organizations that use that data for public interest energy research.”¹⁴

A. Positions of the Commenters

Commenters generally expressed concerns about allocating costs of fulfilling CEUD requests to ratepayers, particularly in circumstances where the data does not provide a substantial public benefit.

Xcel argued that utilities should have the right to charge for specialized reports, which it described as any report created outside of a utility’s established reporting.

CUB recommended requiring utilities to provide data aggregated at the building, municipal, tribal nation, and county levels at no charge. If the Commission chooses to not impose fees on certain requesters, OAG recommended limiting that class to those that could not otherwise afford to access CEUD.

Minnesota Power and OAG recommended imposing limits on the number of data requests that one entity can make. Minnesota Power expressed concern about the costs of responding to complex or bulk requests and recommended limiting requests to specific, single community or multifamily dwelling aggregate series. In contrast, CUB opposed imposing what it deemed arbitrary limits on volume or frequency of requests, arguing that such restrictions could interfere with important initiatives that data access is intended to promote.

CenterPoint and MERC noted that modification of the Standards or addition of approved use cases may result in increased costs as utilities respond to more requests. Currently, CenterPoint and MERC use manual processes for releasing CEUD, and they noted that if request volumes

¹⁴ *In the Matter of a Petition by Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, Order Adopting Open Data Access Standards and Establishing Further Proceedings, p. 8, ordering para. 3 (November 20, 2020).

become sufficiently large, it may become necessary to develop automated systems with significant up-front expense that may be unrecoverable through fees.

B. Commission Action

The Commission will amend the Standards to state that utilities shall provide data aggregated at the building, municipal, tribal nation, and county levels at no charge. These types of datasets have potential to provide valuable information that can be used to implement climate action initiatives and measure their effectiveness. While the Commission understands concerns that the volume of data requests, and related costs to utilities, could increase, the types of data provided at no charge are likely to provide public benefit. The Commission will continue to monitor how the incremental changes to the Standards impact utilities, ratepayers, and other interested parties and revisit these issues if justified by the developing record.

XI. Geographic Boundaries for CEUD Requests

The Standards currently allow for aggregated and anonymized CEUD requests at the municipal, county, or ZIP code level. The Standards also permit third-party requests for aggregated data at the building level. Commenters expressed broad support for adding census boundaries to the list of geographic boundaries for which a third party may request CEUD.

LHB and Xcel noted that while ZIP codes can change over time, census boundaries do not, so they are better suited for benchmarking geographic areas over time. Additionally, LHB explained that census boundaries align with county boundaries, provide more statistical uniformity in terms of population, and have large sets of related demographic and economic data.

Given the broad support in the record and potential benefits of CEUD datasets based on census boundaries, the Commission will add census boundaries to the Standards' list of geographic boundaries for which a third party may request CEUD.

XII. Denial of a CEUD Request

The Standards provide a utility with authority to refuse to provide requested CEUD when it reasonably believes the data release would allow the third party to reidentify customers, violate the terms of the NDA applicable to anonymized data, or otherwise use the data in violation of the Standards.

A. Positions of the Commenters

Commenters broadly supported expanding utilities' authority to refuse a CEUD request when a utility reasonably believes that the data's release would create a security risk for the utility, its customer(s), or the public.

Commenters also generally supported two measures that would increase transparency and documentation related to utilities' denials of CEUD requests. First, CUB recommended that when denying a CEUD request, the utility provide a timely, written explanation to the requester describing the reasons it denied the data request. Second, OAG recommended that the Commission implement a reporting requirement that would allow it to determine when, why, and

how frequently CEUD refusals occur. CUB recommended that these reports document, at a minimum, the entity making the request, the data requested, and the utility's reason for refusing the request. CUB and MERC suggested adding this reporting requirement to utilities' annual compliance filings in this docket. Minnesota Power found the proposed reporting requirement reasonable, but it expressed concerns about additional workload if CEUD requests to the company increased.

While not directly addressing denial of CEUD requests, OAG recommended requiring utilities to maintain a log of all CEUD requests that identifies the purpose of each request. It asserted that such a requirement, in conjunction with other measures, could help the Commission and utilities determine if CEUD is used contrary to the identified purpose and may assist in the event of a data breach. CUB supported OAG's recommendation and noted that compliance would require requesters to identify the purpose of their requests.

B. Commission Action

The Commission will adopt the commenters' recommendations to require reporting of CEUD request denials and to require the utility to provide a written explanation to the requester when denying a data request. By requiring utilities to document and report CEUD requests that they deny, the Commission will be able to assess trends that may inform future modifications to the Standards or related processes. Providing requesters with explanations of their denials may allow requesters to modify the terms of a future request and enable their access to useful data.

The Commission will also require utilities to maintain a log of all CEUD requests that identifies the purposes for each request. This requirement will impose a de minimis burden on utilities and help identify how requesters intend to utilize the data.

While third-party access to CEUD can enable benefits in the public interest, the Standards provide a framework that balances these benefits with the potential risks created by the data's disclosure. Explicitly authorizing utilities to deny CEUD requests when they perceive security risks caused by the data's disclosure provides an additional tool to limit potential risks and helps to maintain the appropriate balance. Therefore, the Commission will modify the Standards to allow a utility to refuse to provide CEUD when the utility reasonably believes that the data's release would create a security risk for the utility, one or more of its customers, or the public.

XIII. CEUD Time Intervals

The Standards specify that aggregated and anonymized CEUD should be "identified at the finest practicable time interval," and that "utilities will provide CEUD in as short intervals as practicable, with 15-minute intervals recommended where utility data collection infrastructure allows."

A. Positions of the Commenters

Commenters suggested modifying the required intervals to better align with current practices and use of data, and they explored whether it was appropriate for the same time interval to apply to both anonymized and aggregated CEUD.

Xcel recommended modifying the Standards to specify a monthly interval for CEUD, explaining that benchmarking ordinances require reporting of monthly or annual data, and benchmarking software tools such as ENERGY STAR Portfolio Manager also apply a monthly standard. Xcel argued that providing aggregated CEUD with finer-than-monthly granularity could create risks to customer confidentiality and privacy and increase data volume, which would likely increase costs as utilities would need to develop new methodologies and protocols to aggregate such granular data.

OAG, Minnesota Power, MERC, and CenterPoint supported specifying monthly data as the most granular time interval allowed for CEUD requests under the Standards. OAG asserted that there is no demonstrated need for data based on 15-minute intervals and argued that utilization of such a short interval poses significant customer privacy risks because it could reveal detailed information about household energy use. Minnesota Power, MERC, and CenterPoint referenced the logistical challenges created by the volume of data generated from data based on shorter intervals. Given the increased complexity of working with larger volumes of data, Minnesota Power expressed concerns about quality control.

LHB and CUB recognized that monthly intervals are commonly applied to create useful data and did not object to limiting aggregated data to monthly intervals; however, CUB noted that data produced on shorter intervals may eventually become more applicable to public interest uses and warrant future modifications to the monthly standard.

CUB opposed limiting anonymized data to monthly intervals. It asserted that anonymized CEUD that displays customers' daily load curves (ideally at hour-long or shorter intervals) appears to hold the most potential value.

B. Commission Action

The Commission finds that the record supports changing the Standards' time intervals for aggregated CEUD to require reporting in intervals no shorter than monthly. Aggregated CEUD datasets produced from monthly time intervals are commonly used for benchmarking purposes, and no commenters demonstrated current applications of aggregated CEUD based on shorter intervals. Requiring production of aggregated CEUD at intervals no shorter than monthly will allow access to valuable data used for public purposes while minimizing unnecessary burdens on utilities to produce the voluminous datasets generated through application of shorter intervals.

Considering the differences between aggregated and anonymized CEUD, the Commission finds that limiting anonymized CEUD access to data based on monthly intervals could significantly diminish the usefulness of that data. Chan et al. referenced several studies that utilized anonymized CEUD based on hour-long intervals. While commenters have expressed concerns about risks and challenges presented by anonymized CEUD and CEUD generated from short intervals, the Commission notes that it has yet to apply the Standards to any use cases for anonymized CEUD. Given that the Commission anticipates addressing issues related to anonymized CEUD based on a more developed record, it will modify the Standards so that utilities provide anonymized CEUD reported in intervals no shorter than one hour.

XIV. Technical Corrections to the Standards

CUB proposed two technical corrections to the Standards. First, it requested removing the “/or” from the “and/or” in paragraph III.B.(1)(ii). Second, it suggested removal of the word “area” in an instance of “U.S. postal code area” at III.B.(2)(iii) of the Standards. Xcel supported adopting CUB’s suggested technical corrections.

The Commission will implement CUB’s recommended technical corrections as they provide the Standards additional clarity and consistency.

XV. Additional Commission Action

In furtherance of the Commission’s previously stated objective of incrementally applying the Standards, the Commission will continue to develop the record related to CEUD use by requesting comments addressing topics related to anonymized data under the Standards.

ORDER

1. Consistent with the modifications authorized in the preceding sections, the Commission modifies the Open Data Access Standards (the Standards) as reflected in the updated version of the Standards (attached to this order).¹⁵
2. The Commission will expand application of the Open Data Access Standards to requests for aggregated CEUD including municipal boundaries and county boundaries.
3. The Commission will retain the 5-MW peak demand exemption for large industrial and commercial customers in Ordering Paragraph 2 of the Commission’s November 20, 2020 Order only for aggregated building-level and anonymized CEUD datasets.
4. Utilities subject to the Open Data Access Standards shall:
 - a. maintain a log of all CEUD requests, as well as the purpose for such requests; and
 - b. report any CEUD requests that they refuse to grant under the Standards in their CEUD annual reports, including, at a minimum: the entity making the request, the data requested, and the utility’s reason for refusing the request.
5. The Commission delegates authority to the Executive Secretary to establish a comment period to further develop the record on the following topics regarding anonymized data under the Commission’s approved Open Data Access Standards:
 - a. Identification of anonymized CEUD use-cases;

¹⁵ A redlined version that shows the modifications to the Standards approved by this order is also attached.

- b. Refinement of specific provisions of the contract requirements for anonymized data access for identified use cases;
 - c. Ascertaining the appropriate threshold for limiting the application of the Standards to commercial and industrial natural gas and electric customers for anonymized CEUD requests;
 - d. Establishing the shortest data time interval for anonymized CEUD requests under the Standards;
 - e. Ascertaining the preferred method by which to apply the 15/15 anonymization screen to CEUD at 15-minute and hourly time intervals; and
 - f. Ascertaining the ability of Utilities to respond to anonymized CEUD requests at varying time-scales.
6. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Will Seuffert
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing or speech impairment may call using their preferred Telecommunications Relay Service or email consumer.puc@state.mn.us for assistance.

Open Data Access Standards¹

I. Purpose and Scope

- A. These standards apply to investor-owned electric or gas public utilities with greater than 50,000 customers within the state of Minnesota. They are intended to set standards for the collection and sharing of customer energy use data (CEUD) for use by third parties, as defined below. In particular, these standards are designed to ensure that:
- (1) Third parties may access aggregated or anonymized, disaggregated CEUD;
 - (2) The data be identified at the closest level of geographical specificity possible to maintain customer anonymity and at the finest practicable time interval;
 - (3) The utility, to the best of its ability, shall in a timely manner furnish this data in a consistent, standard format aligned with industry best practices regarding ease of access and granularity of data; and
 - (4) Unless authorized by a customer, a third party shall not have access to any personally identifiable information for a customer.

II. Definitions

- A. “Aggregated customer energy use data” refers to the data of individual customers located in a defined geographical area, which is combined into one collective data point per time interval.
- B. “Anonymized customer energy use data” refers to the data of individual customers, which has been modified sufficiently to prevent the release of personally identifiable information, collected over a number of time intervals from a defined geographical area.
- C. “Customer” means a person contracting for or purchasing electric or natural gas service at retail from an investor owned electric or gas public utility with customers greater than 50,000 within the state of Minnesota.
- D. “Customer energy use data” (CEUD) refers to data collected from the utility customer meters that reflect the quantity, quality, or timing of customers’ natural gas or electric usage or electricity production. For the purposes of these Open Data Access Standards, CEUD includes data regarding:

¹ This version of the open data access standards reflects changes authorized in the March 13, 2023 order issued in dockets E,G-999/M-19-505 and E,G-999/CI-12-1344.

- (1) the amount and timing of energy use and production;
 - (2) peak load contributions and the amount and timing of demand; and
 - (3) rate class.
- E. “Interval data” means CEUD that is collected and compiled for a particular interval of time—including but not limited to intervals of minutes, hours, or day, but no greater than one month—for an individual customer or for a collective data set.
- F. “Personally identifiable information” (PII) means customer data which can be used to distinguish or trace the identity of an individual (e.g., name, social security number, biometric records, etc.) alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual (e.g., date and place of birth, mother’s maiden name, etc.).
- G. “Regional Unit of Government” means a regional planning board, regional development commission, and the Metropolitan Council as defined by Minnesota Statute Chapters 462 and 473.
- H. “Tax exempt organization” means a business entity organized in the United States for a nonprofit purpose and that is exempt from paying federal income tax pursuant to the Internal Revenue Code.
- I. “Third party” means a person or entity who requests CEUD other than their own from the utility that maintains the data.
- J. “Utility” means an investor-owned electric or gas public utility with customers greater than 50,000 within the state of Minnesota.

III. Third Party Access to Customer Energy Use Data and Customer Privacy Protection

- A. A utility must prepare and make available aggregated and/or anonymized CEUD upon the written or electronic request of any qualifying third party. The procedure a utility uses to allow a person to request this data must be (1) convenient for the typical third party, and (2) available on the utility's website. Additionally, a utility will make available the contact information for third-party CEUD requests and inquiries on the utility’s website. Such sets must consist of the past 24 months of historical CEUD in the smallest interval practicable unless otherwise requested by the customer or authorized third party.

- B. CEUD provided may include aggregated and anonymized sets of customer energy use data.

(1) Aggregated CEUD

(i) Aggregation standard: An aggregated customer energy use data set may include CEUD from no fewer than 4 customers. A single customer's energy use must not constitute more than 50 percent of total energy consumption for the requested data set.

(ii) CEUD data sets containing 3 or fewer customers or with a single customer's energy use constituting more than 50 percent of total energy consumption may be provided upon the written consent of (1) all customers included in the requested data set, in cases of 3 or fewer customers, and (2) any customer constituting more than 50 percent of total energy consumption for the requested data set.

(iii) Aggregated CEUD may be requested by customer class and/or building or property, defined municipal boundary, county boundary, U.S. Census boundary, or U.S. postal code, provided that no data set violates paragraphs (i) and (ii).

(iv) Aggregated CEUD may be requested by:

(a) Tax-exempt organizations based within the United States;

(b) U.S. Federal Government agencies and subdivisions thereof; State of Minnesota government agencies, boards, and/or commissions; regional or local government entities with jurisdiction within Minnesota; and government entities of federally recognized tribes that share Minnesota's geography; and

(c) Property owners or managers, so long as the CEUD requested applies only to the property the requestor owns or manages.

(v) Aggregated CEUD at other than whole building level shall be provided in a machine-readable format including (at a minimum):

(a) Customer class including, at a minimum, commercial, industrial, and residential. (These classes shall be inclusive of all customers served. Classes may be combined if a dataset violates the privacy screen).

(b) Number of customers by customer class.

(c) Energy consumption (kWh or therms) by customer class.

(d) Number of customers removed from the dataset by customer class.

(vi) A utility will follow this order of operations when applying the aggregation standard. At any point, when the data meets the privacy screen it will be released. Requesters may identify which solutions work for their needs at the time of request.

(a) First seek to report the aggregated CEUD of residential, commercial, and industrial classes separately. These classes shall be inclusive of all customers served.

(b) Notify any customer whose CUD triggers a privacy screen failure of the data request, the name and contact information of the entity making the request, and the purpose of the entity's request, and allow the customer to give written permission to include their data in the data set.

(c) Combine commercial and industrial classes into one class (nonresidential).

(d) Remove the CEUD of each customer that triggers a failure of the aggregation screen, and report the number of customers excluded from the data set.

(e) If the nonresidential class still fails the privacy screen, report residential customer CEUD only.

(f) If the residential customer class still fails the privacy screen, exclude the residential class and report only commercial and industrial (or nonresidential).

(g) If all classes fail, combine all classes (total energy).

(vii) Notwithstanding paragraphs (i) and (ii), individual customer CEUD that is publicly reported will be included in aggregated data sets, regardless of whether the customer's usage triggers a failure of the aggregation standard, so long as the time scale of the requested data set and the public data set are equivalent.

(2) Anonymized CEUD

(i) Anonymization standard: Anonymized data sets may include CEUD from no fewer than 15 customers. A single customer's energy use must not constitute more than 15 percent of total energy consumption for the data set.

(ii) A unique customer identification code shall be assigned to each anonymous customer in a data set. The customer identification code shall remain consistent within the data set.

(iii) Anonymized data sets may be requested by customer class and/or defined municipal boundary, county boundary, U.S. Census boundary, or U.S. postal code provided that no data set violates paragraph (i).

(iv) Anonymized CEUD may be requested by:

(a) Tax-exempt organizations based within the United States;

(b) U.S. Federal Government agencies and subdivisions thereof; State of Minnesota government agencies, boards, and/or commissions; regional or local government entities with jurisdiction within Minnesota; and government entities of federally recognized tribes that share Minnesota's geography.

(c) Entities that provide or seek to provide demand response, energy efficiency, or other services to a utility may access anonymized data for the sole purpose of providing such services or preparing a proposal to the utility to do so.

(v) A utility may refuse to provide CEUD to a third party requesting anonymized data if the third party does not sign a contract with the utility that must at a minimum:

(a) Prohibit the third party from attempting to reverse engineer data or reidentify customers included in a data set;

(b) Require a third-party to disclose all of the third party's employees, subcontractors, or agents with access to the data set at the time of the contract and require this to be updated if it changes during the life of the contract;

(c) Prohibit the third party from disclosing anonymized data except to the third party's personnel or to entities with whom the third party has a contractual relationship for the purpose of conducting an investigation with the anonymized data;

(d) Require the third party to have contractual terms for disclosure with contracted entities noted in paragraphs (b) and (c) above that are equivalent to utilities contract here in and provide executed copies of those agreements in advance or when they're made;

(e) Hold the third party responsible for its actions with the data;

(f) Require the third party to promptly delete data and notify the utility if it discovers any PII contained in the data set; and

(g) Require the third party to state its intended use for the data.

(3) Each utility covered under these standards must file their contract form developed pursuant to 2(v) above with the Commission.

(4) The Commission may set alternative aggregation or anonymization standards upon the petition of any party, as long as those new standards do not restrict public access to energy data deemed in the public interest nor allow for the identification of individual customers within a data set.

C. Notwithstanding section III.B, a utility may refuse to provide aggregated or anonymized CEUD when it reasonably believes the data release would create a security risk for the utility, its customer(s), or the public, or that the release would allow the third party to re-identify customers, violate the terms of the contract in 2(v) above, or otherwise use the data in violation of these standards.

D. A utility that refuses to provide requested CEUD for any reason must provide a timely, written explanation to the requester explaining the utility's reason(s) for refusing to provide the requested CEUD.

IV. Data Type and Format

A. Utilities will provide CEUD in as short intervals as practicable, with aggregated CEUD reported in intervals no shorter than monthly, and anonymized CEUD reported in intervals no shorter than hourly.

- B. Utilities will work with third parties to provide CEUD in a manner that reasonably facilitates ease of access, ease of CEUD preparation, and comports with accepted data handling standards.
- C. Utilities will clearly indicate how the utility defines which class a customer belongs to when providing CEUD and how customer location is determined.

V. Delivery of Data

- A. Utilities shall work with third parties to facilitate timely and secure delivery of CEUD. Disputes may be brought to the Commission for resolution.

VI. Fees and Cost Recovery

- A. A utility may charge the requester a fee to prepare and supply CEUD. A utility charging a data access fee authorized by this section must:
 - (1) base the fee amount on the actual costs incurred by the utility to create and deliver the requested data;
 - (2) consider the reasonable value of the data prepared to the utility and, if appropriate, reduce the fee assessed to the requesting person;
 - (3) provide the requesting person with an estimate and explanation of the fee; and
 - (4) collect the fee before preparing or supplying the requested data.
- B. Notwithstanding section VI.A, utilities shall provide data aggregated at the Native nation, county, municipal, and building levels at no charge.

Open Data Access Standards

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- (1) Third parties may access aggregated or anonymized, disaggregated CEUD;
 - (2) The data be identified at the closest level of geographical specificity possible to maintain customer anonymity and at the finest practicable time interval;
 - (3) The utility, to the best of its ability, shall in a timely manner furnish this data in a consistent, standard format aligned with industry best practices regarding ease of access and granularity of data; and
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- (1) the amount and timing of energy use and production;

- (2) peak load contributions and the amount and timing of demand; and
- (3) rate class.

E. "Interval data" means CEUD that is collected and compiled for a particular interval of time— including but not limited to intervals of minutes, hours, or day, but no greater than one month—for an individual customer or for a collective data set.

F. "Personally identifiable information" (PII) means customer data which can be used to distinguish or trace the identity of an individual (e.g., name, social security number, biometric records, etc.) alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual (e.g., date and place of birth, mother's maiden name, etc.).

G. "Regional Unit of Government" means a regional planning board, regional development commission, and the Metropolitan Council as defined by Minnesota Statute Chapters 462 and 473.

~~G.H.~~ "Tax exempt organization" means a business entity organized in the United States for a nonprofit purpose and that is exempt from paying federal income tax pursuant to the Internal Revenue Code.

~~H.I.~~ "Third party" means a person or entity who requests CEUD other than their own from the utility that maintains the data.

~~H.J.~~ "Utility" means an investor-owned electric or gas public utility with customers greater than 50,000 within the state of Minnesota.

III. Third Party Access to Customer Energy Use Data and Customer Privacy Protection

A. A utility must prepare and make available aggregated and/or anonymized CEUD upon the written or electronic request of any qualifying third party. The procedure a utility uses to allow a person to request this data must be (1) convenient for the typical third party, and (2) available on the utility's website. Additionally, a utility will make available the contact information for third-party CEUD requests and inquiries on the utility's website. Such sets must consist of the past 24 months of historical CEUD in the smallest interval practicable unless otherwise requested by the customer or authorized third party.

B. CEUD provided may include aggregated and anonymized sets of customer energy use data.

(1) Aggregated CEUD

(i) Aggregation standard: An aggregated customer energy use data set may include CEUD from no fewer than 4 customers. A single customer's energy use must not constitute more than 50 percent of total energy consumption for the requested data set.

(ii) CEUD data sets containing 3 or fewer customers or with a single customer's energy use constituting more than 50 percent of total energy consumption may be provided upon the written consent of (1) all customers included in the requested data set, in cases of 3 or fewer customers, and ~~or~~ (2) any customer constituting more than 50 percent of total energy consumption for the requested data set.

(iii) Aggregated CEUD may be requested by customer class and/or building or property, defined municipal boundary, county boundary, U.S. Census boundary, or U.S. postal code, provided that no data set violates paragraphs (i) and (ii).

(iv) Aggregated CEUD may be requested by:

(a) Tax-exempt organizations based within the United States;

(b) U.S. Federal Government agencies and subdivisions thereof; State of Minnesota government agencies, boards, and/or commissions; regional or local government entities with jurisdiction within Minnesota; and government entities of federally recognized tribes that share Minnesota's geography; and

(c) Property owners or managers, so long as the CEUD requested applies only to the property the requestor owns or manages.

(v) Aggregated CEUD at other than whole building level shall be provided in a machine-readable format including (at a minimum):

(a) Customer class including, at a minimum, commercial, industrial, and residential. (These classes shall be inclusive of all customers served. Classes may be combined if a dataset violates the privacy screen).

(b) Number of customers by customer class.

(c) Energy consumption (kWh or therms) by customer class.

(d) Number of customers removed from the dataset by customer class.

(vi) A utility will follow this order of operations when applying the aggregation standard. At any point, when the data meets the privacy screen it will be released. Requesters may identify which solutions work for their needs at the time of request.

(a) First seek to report the aggregated CEUD of residential, commercial, and industrial classes separately. These classes shall be inclusive of all customers served.

(b) Notify any customer whose CUD triggers a privacy screen failure of the data request, the name and contact information of the entity making the request, and the purpose of the entity's request, and allow the customer to give written permission to include their data in the data set.

(c) Combine commercial and industrial classes into one class (nonresidential).

(d) Remove the CEUD of each customer that triggers a failure of the aggregation screen, and report the number of customers excluded from the data set.

(e) If the nonresidential class still fails the privacy screen, report residential customer CEUD only.

(f) If the residential customer class still fails the privacy screen, exclude the residential class and report only commercial and industrial (or nonresidential).

(g) If all classes fail, combine all classes (total energy).

(vii) Notwithstanding paragraphs (i) and (ii), individual customer CEUD that is publicly reported will be included in aggregated data sets, regardless of whether the customer's usage triggers a failure of the aggregation standard, so long as the time scale of the requested data set and the public data set are equivalent.

(2) Anonymized CEUD

(i) Anonymization standard: Anonymized data sets may include CEUD from no fewer than 15 customers. A single customer's energy use must not constitute more than 15 percent of total energy consumption for the data set.

(ii) A unique customer identification code shall be assigned to each anonymous customer in a data set. The customer identification code shall remain consistent within the data set.

(iii) Anonymized data sets may be requested by customer class and/or defined municipal boundary, county boundary, U.S. Census boundary, or U.S. postal code ~~area~~, provided that no data set violates paragraph (i).

(iv) Anonymized CEUD may be requested by:

(a) Tax-exempt organizations based within the United States;

(b) U.S. Federal Government agencies and subdivisions thereof; State of Minnesota government agencies, boards, and/or commissions; regional or local government entities with jurisdiction within Minnesota; and government entities of federally recognized tribes that share Minnesota's geography.

(c) Entities that provide or seek to provide demand response, energy efficiency, or other services to a utility may access anonymized data for the sole purpose of providing such services or preparing a proposal to the utility to do so.

(v) A utility may refuse to provide CEUD to a third party requesting anonymized data if the third party does not sign a contract with the utility that must at a minimum:

(a) Prohibit the third party from attempting to reverse engineer data or reidentify customers included in a data set;

(b) Require a third-party to disclose all of the third party's employees, subcontractors, or agents with access to the data set at the time of the contract and require this to be updated if it changes during the life of the contract;

(c) Prohibit the third party from disclosing anonymized data except to the third party's personnel or to entities with whom the third party has

a contractual relationship for the purpose of conducting an investigation with the anonymized data;

(d) Require the third party to have contractual terms for disclosure with contracted entities noted in paragraphs (b) and (c) above that are equivalent to utilities contract here in and provide executed copies of those agreements in advance or when they're made;

(e) Hold the third party responsible for its actions with the data;

(f) Require the third party to promptly delete data and notify the utility if it discovers any PII contained in the data set; and

(g) Require the third party to state its intended use for the data.

(3) Each utility covered under these standards must file their contract form developed pursuant to 2(v) above with the Commission.

(4) The Commission may set alternative aggregation or anonymization standards upon the petition of any party, as long as those new standards do not restrict public access to energy data deemed in the public interest nor allow for the identification of individual customers within a data set.

C. Notwithstanding section III.B, a utility may refuse to provide aggregated or anonymized CEUD when it reasonably believes the data release would create a security risk for the utility, its customer(s), or the public, or that the release would allow the third party to re-identify customers, violate the terms of the contract in 2(v) above, or otherwise use the data in violation of these standards.

D. A utility that refuses to provide requested CEUD for any reason must provide a timely, written explanation to the requester explaining the utility's reason(s) for refusing to provide the requested CEUD.

IV. Data Type and Format

A. Utilities will provide CEUD in as short intervals as practicable, with aggregated CEUD reported in intervals no shorter than monthly, 15-minute intervals recommended and anonymized CEUD reported in intervals no shorter than hourly. where utility data collection infrastructure allows.

B. Utilities will work with third parties to provide CEUD in a manner that reasonably facilitates ease of access, ease of CEUD preparation, and comports with accepted data handling standards.

C. Utilities will clearly indicate how the utility defines which class a customer belongs to when providing CEUD and how customer location is determined.

V. Delivery of Data

- A. Utilities shall work with third parties to facilitate timely and secure delivery of CEUD. Disputes may be brought to the Commission for resolution.

VI. Fees and Cost Recovery

- A. A utility may charge the requester a fee to prepare and supply CEUD. A utility charging a data access fee authorized by this section must:

- (1) base the fee amount on the actual costs incurred by the utility to create and deliver the requested data;
- (2) consider the reasonable value of the data prepared to the utility and, if appropriate, reduce the fee assessed to the requesting person;
- (3) provide the requesting person with an estimate and explanation of the fee; and
- (4) collect the fee before preparing or supplying the requested data.

- B. Notwithstanding section VI.A, utilities shall provide data aggregated at the Native nation, county, municipal, and building levels at no charge.

CERTIFICATE OF SERVICE

I, Robin Benson, hereby certify that I have this day, served a true and correct copy of the following document to all persons at the addresses indicated below or on the attached list by electronic filing, electronic mail, courier, interoffice mail or by depositing the same enveloped with postage paid in the United States mail at St. Paul, Minnesota.

Minnesota Public Utilities Commission
ORDER REFINING OPEN DATA ACCESS STANDARDS

Docket Numbers: **E,G-999/M-19-505 and E,G-999/CI-12-1344**

Dated this **13th** day of **March, 2023**

/s/ Robin Benson

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Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_19-505_Official
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Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_12-1344_Official
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Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_12-1344_Official
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Caitlin	Straabe	caitlin.straabe@mdu.com	Great Plains Natural Gas Co.	400 N 4th St Bismarck, ND 58501	Electronic Service	No	OFF_SL_12-1344_Official
Jason	Topp	jason.topp@lumen.com	CenturyLink Communications, LLC	200 S 5th St Ste 2200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_12-1344_Official
Patricia	Whitney	patricia@pwhitneylaw.com	St. Paul Assn of Responsible Landlords	627 Snelling Avenue South St. Paul, MN 55116	Electronic Service	No	OFF_SL_12-1344_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Elizabeth	Wilson	ewilson@umn.edu	University of Minnesota	301 19th Ave South Minneapolis, Minnesota 55455	Paper Service	No	OFF_SL_12-1344_Official
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	OFF_SL_12-1344_Official