STATE OF MINNESOTA

BEFORE THE PUBLIC UTILITIES COMMISSION

Katie Sieben	Chair
Joseph Sullivan	Vice-Chair
Hwikwon Ham	Commissioner
Audrey Partridge	Commissioner
John Tuma	Commissioner

In the Matter of a Commission Inquiry into Xcel Energy's Advanced Rate Design for Load Management	Docket No. E-002/CI-24-115

Comments of the Citizens Utility Board of Minnesota and the Chan Lab

The Citizens Utility Board of Minnesota ("CUB") and the Chan Lab at the University of Minnesota Center for Science, Technology, and Environmental Policy ("Chan Lab") respectfully submit these comments in response to the April 22, 2025 Notice of Extended Comment Period issued by the Minnesota Public Utilities Commission ("Commission") in the above-referenced docket.

I. Background

In August 2019, CUB petitioned the Commission to adopt Open Data Access Standards ("ODAS" or "Standards") for the sharing of aggregated and anonymized customer energy use data ("CEUD").[1] Over the next five years, the Commission adopted ODAS incrementally, with deployment being finalized when the Standards were applied to anonymized CEUD in July 2024.[2]

Following the Commission's implementation of the Standards, CUB and the Chan Lab engaged in discussions about utilizing anonymized CEUD to conduct a customer segmentation analysis to identify patterns in energy usage and the costs of serving different demographic groups within utilities' residential rate classes. This research effort was modeled on a similar study conducted by the Citizens Utility Board of Illinois ("CUB Illinois") that identified potential cross-subsidization within the residential rate class, with lower-income households being less likely to contribute to on-peak energy costs.[3] This study was consistently referred to as a primary use case for anonymized data during the ODAS

[1] *In the Matter of a Petition by the Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, Notice of Petition and Petition to Adopt Open Data Access Standards (Aug. 6, 2019).
[2] *In the Matter of a Petition by the Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, Order Refining Open Data Access Standards (Jul. 5, 2024) (hereinafter "Anonymized CEUD Order").
[3] Jeff Zethmayr & Ramandeep Singh Makhija, *Six Unique Load Shapes: A Segmentation Analysis of Illinois Residential Electricity Customers*, 32 THE ELECTRICITY JOURNAL 9 (2019).

proceedings and—together with numerous other data analyses—was identified by the Commission as a primary reason for enabling anonymized data access.[4]

Independently of these discussions between CUB and the Chan Lab, the Commission reaffirmed the value of understanding how "residential customers with different usage profiles contribute to system costs."[5] The Commission therefore authorized the Executive Secretary to issue a Notice of Comment in Docket No. E-002/CI-24-115 on whether Northern States Power Company d/b/a Xcel Energy ("Xcel" or the "Company") should perform a study for the purpose of identifying disparate cost contributions by members of the residential rate class, citing the CUB Illinois study as an example.[6]

The Chan Lab subsequently requested anonymized CEUD from Xcel under ODAS for the purpose of conducting its own customer segmentation study.[7] Xcel denied the Chan Lab's request, citing the upcoming comment period and the Company's continued concerns about customer reidentification.[8] CUB and the Chan Lab thereafter filed a Complaint, requesting that the Commission require the release of CEUD in accordance with the duly adopted Standards.[9]

The Commission issued a Notice of Comment on March 17, 2025, requesting parties to comment both on whether Xcel should conduct a customer segmentation study and whether any action should be taken on the Complaint submitted by CUB and the Chan Lab.[10] An extension to that comment period was granted on April 22, 2025.[11]

II. Analysis

As discussed below, we recommend the Commission (1) require Xcel to provide the Chan Lab with the requested anonymized CEUD; (2) not direct Xcel to conduct its own customer segmentation study; and (3) prohibit the imposition of a data access fee for this request.

A. The Commission should require Xcel to provide anonymized residential CEUD to the Chan Lab for the purpose of conducting a customer segmentation study.

Xcel's refusal to provide anonymized CEUD to the Chan Lab is premised on two primary arguments, neither of which are consistent with the Commission-approved Open Data Access Standards. First, the Company suggests the release of data should, at least in part, be made dependent on the

[4] *See generally 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, Reply Comments of Chan et al. (Sep. 6, 2022); Anonymized CEUD Order at 4.
[5] In the Matter of Xcel Energy's Petition for an Automatic Bill Credit Pilot Program, Docket No. E-002/M-24-173, Order Approving Automatic Bill Credit Pilot Program as Modified at 9 (Dec. 5, 2024).
[6] *Id*. at 11.
[7] *In the Matter of a Commission Inquiry into Xcel Energy's Advanced Rate Design for Load Management*, Docket No. E-002/CI-24-115, CUB and Chan Lab Complaint at Att. A (Mar. 5, 2025) (hereinafter "CUB and Chan Lab Data Access Complaint").
[8] *In the Matter of a Commission Inquiry into Xcel Energy's Advanced Rate Design for Load Management*, Docket No. E-002/CI-24-115, Xcel Initial Comments at 12 (Apr. 16, 2025) (hereinafter "Xcel Data Access Complaint Comments"); CUB and Chan Lab Data Access Complaint, Att. B: E-Mail from Nick Martin, Xcel Energy to Gabriel Chan.
[9] CUB and Chan Lab Data Access Complaint.
[10] *In the Matter of a Commission Inquiry into Xcel Energy's Advanced Rate Design for Load Management*, Docket No. E-002/CI-24-115, Notice of Comment Period (Mar. 17, 2025).
[11] *In the Matter of a Commission Inquiry into Xcel Energy's Advanced Rate Design for Load Management*, Docket No. E-002/CI-24-115, Notice of Extended Comment Period (Apr. 22, 2025).

Commission's decision about whether Xcel should be required to conduct a customer segmentation analysis. Second, Xcel reiterates its argument that the ODAS protections duly adopted and implemented by the Commission are insufficient to adequately guard against customer re-identification. We strongly recommend that the Commission reject Xcel's arguments and require the Company to release anonymized CEUD to the Chan Lab.

1. The Open Data Access Standards permit utilities to deny requests for CEUD in limited circumstances.

Section III.C. of the Standards provides specific circumstances in which a utility may deny a request for CEUD:

> 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 that 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.[12]

If a request for aggregated or anonymized CEUD is otherwise eligible under ODAS, a utility may deny it *only* for the reasons outlined in this paragraph. As further detailed below, the utility must have a reasonable basis for its decision that is grounded in its evaluation of the specific data request in question.

2. The Standards do not permit a utility to deny a request for CEUD due to the existence of a docketed proceeding.

Xcel suggests the current comment period warrants delaying or denying the Chan Lab's request for anonymized CEUD,[13] and that letting the instant comment period play out would prevent undue duplication of research efforts.

That a related comment period is ongoing is not a basis upon which to deny eligible data access requests. Whether a third party may conduct research similar to what is required of Xcel is irrelevant to the utility's obligation to provide anonymized data under the Standards. This argument should be dismissed.

3. Xcel fails to cite reasonable reidentification or security concerns that warrant the denial of the requested CEUD.

The second reason provided by Xcel for denying the Chan Lab's request is the potential "risk of customer re-identification."[14] The Company claims that granting any requests for anonymized CEUD could "allow a third party to re-identify customers or create a security risk for the utility, its customers,

[12] Open Data Access Standards, Section III.C.
[13] Xcel Data Access Complaint Comments at 9-10.
[14] *Id*. at 10-12.

or the public."[15] However, Xcel provides no rationale for why the Chan Lab's CEUD request poses this particular risk. Instead, the Company resurrects the same general arguments against anonymized data sharing that the Commission has already found unpersuasive.

Under Section III.C of the Standards, a utility's denial of a CEUD request must be based on its *reasonable belief* that the request would create a risk to security or customer privacy or otherwise violate the Standards. In its Order Refining Open Data Access Standards, the Commission further explained that utilities' exercise of discretion under Section III.C only allows them to "refuse *individual* data requests."[16] The Standards do not permit the blanket rejection of all requests for aggregated or anonymized data; a utility must evaluate and render a determination on each individual request based on the risks specific to that request.

Xcel provides no reasoning or evidence that the Chan Lab's request for anonymized CEUD creates any particular risk. Rather, Xcel cites the lack of "expert-level analysis of the anonymization standard" to justify its position.[17] This is the same argument that Xcel presented in the Commission's consideration of the Standards. In that proceeding, Xcel recommended the Commission not grant third-party access to anonymized CEUD unless and until a "technical assessment . . . [is] conducted by an expert in the field, and an objective basis established for assessing . . . risk."[18] Ample argument and evidence was presented in that proceeding demonstrating Xcel's position was unreasonable. The Commission rejected Xcel's argument, determining the Standards "sufficiently reduce the risk of customer reidentification" and strike the "appropriate balance" between facilitating data access and protecting customer privacy.[19] The Commission was clear that a utility's decision to deny CEUD cannot be based on generalized apprehensions but must be sufficiently related to a security or reidentification risk based on the circumstances surrounding each individual data request. In citing this rationale for denying the Chan Lab's request, Xcel disregards the Commission's Order and its clear intentions regarding public interest access to anonymized CEUD. Accepting Xcel's argument now would effectively nullify the provisions of ODAS and eliminate any practical approach to third-party access of anonymized CEUD.

We request that the Commission direct the Company to provide the Chan Lab with the requested data, subject to the protections and limitations imposed by the Standards.

[15] CUB and Chan Lab Data Access Complaint, Att. B.
[16] Anonymized CEUD Order at 5 (emphasis added).
[17] Xcel Data Access Complaint Comments at 12; CUB and Chan Lab Data Access Complaint, Att. B.
[18] *In the Matter of a Petition by the Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, Xcel Energy Comments at 1 (Feb. 16, 2024).
[19] Anonymized CEUD Order at 4.

B. The Commission should not direct Xcel to perform a study evaluating the contribution to Minnesota system costs caused by residential customers with different usage profiles.

CUB and the Chan Lab strongly support the development of a customer segmentation study but do not recommend the Commission order Xcel to conduct such an analysis. Requiring Xcel to undertake such a study would be duplicative of the Chan Lab's planned research and would result in unnecessary ratepayer costs and burden to the utility.

1. A customer segmentation analysis will provide insights on rate design and the equity of utility service beyond what can be learned from existing studies and pilots.

The value of third-party research was discussed extensively in Docket No. E,G-999/M-19-505 and was cited by the Commission as one of the primary reasons for enabling anonymized data access.[20] In explaining its decision to implement the Standards, the Commission reasoned that public interest analyses of CEUD could advance parties' understanding of energy burden, identify potential inequities in energy systems, and allow utilities and the Commission to "make better informed, evidence-based decisions."[21] The customer segmentation study proposed by CUB and the Chan Lab fits squarely within the type of analysis envisioned by the Commission when approving the Standards and would "help . . . answer fundamental questions about energy systems" by expanding understanding of potential cross-subsidization within Xcel's residential rate class and offering insights that could shape future rate design or program development decisions.[22]

CUB Illinois' customer segmentation study—upon which the Chan Lab's research proposal is modeled—provides an exemplary illustration of how disaggregated data can be utilized to better understand energy usage and costs within the residential rate class. By examining anonymized CEUD from more than 2.5 million households in the Chicago area—and correlating this data with publicly available information from the U.S. Census—CUB Illinois discovered that low-income customers generally used less on-peak electricity than the average residential customer.[23] Because on-peak electricity is typically more expensive to generate and deliver, average low-income customers charged a flat electricity rate paid more than the cost of providing their electricity, subsidizing their higher-income neighbors.[24]

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[20] *See generally In the Matter of a Petition by the Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, CUB Initial Comments at 6-8 (Mar. 4, 2024); Reply Comments of Harrington et al. at 5-7 (Apr. 29, 2024); Anonymized CEUD Order at 4-5, 11.

[21] Anonymized CEUD Order at 4.

[22] *In the Matter of a Petition by the Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, Reply Comments of Harrington et al. at 2 (Apr. 29, 2024).

[23] Jeff Zethmayr & Ramandeep Singh Makhija, *Six Unique Load Shapes: A Segmentation Analysis of Illinois Residential Electricity Customers*, 32 THE ELECTRICITY JOURNAL 5 (2019) (stating that "analysis of low-income cluster assignments in ComEd showed that low-income households were significantly more likely to exhibit lower overall volumes and flatter load shapes").

[24] *Id*. at 7 (stating that "customers with high peaks relative to their overall volume likely pay less in their bills than the system costs they actually cause, while customers with flatter load shapes have higher volume relative to their peak usage, leading

In 2020, Minnesota Power voluntarily partnered with CUB Minnesota and researchers from CUB Illinois to conduct a similar analysis of the utility's northern Minnesota customers to inform their development of time-of-day rates.[25] This study did not find evidence of distinct usage patterns among low-income Minnesota Power households, possibly due to minimal air conditioning usage and the relatively homogenous demographic distribution of the population in the region.[26] However, as discussed in Docket No. E,G-999/M-19-505, similar studies conducted in other Minnesota service territories could result in materially different outcomes:

> It is possible that an analysis of anonymized electricity usage in central or southern Minnesota—areas with widespread central air conditioning and sometimes more segregated communities—could illuminate demographically distinct usage patterns similar to those seen in the Chicago area. If so, such an analysis could help identify regulatory actions that could be taken to generate more just and more reasonable rates.[27]

Xcel serves residential customers across the Twin Cities metro region and much of southern Minnesota. Given the geographic and demographic differences between the Company's service territory and that of Minnesota Power, we expect that a customer segmentation analysis may result in more statistically significant outcomes that could help inform future decisions about rate design, utility programs, and community outreach.

Xcel claims the results of its time-of-use ("TOU") pilot are equivalent to what would be discovered through customer segmentation: that "low-income customers . . . have generally lower and flatter usage profiles than customers overall."[28] While we appreciate the insights provided by the TOU pilot, it does not provide a full picture of residential energy usage patterns across the Company's customer base. The pilot's scope was limited to 17,500 customers over a narrow geographic region that was neither representative of the Company's entire service territory nor its most economically disadvantaged customers.[29] The pilot's primary focus was to identify the extent to which time-varying rate designs impact consumption and bills by customer segment. This is a distinct question from how those customer segments contribute to utility system expenses. While time-varying rates theoretically seek to better allocate costs to the customers that cause them, the seasonal, annual, or even multi-year peaks that drive those expenses are, at best, imperfectly captured by the Company's pilot. A more

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them to overpaying. The high correlation between flat usage and lower incomes suggests this cross-subsidization has particularly harmful consequences . . .").

[25] *See In the Matter of Minnesota Power's Compliance Report for a Residential Time-of-Day Rate for Participants of the Smart Grid Advanced Metering Infrastructure Pilot Project*, Docket No. E015/M-12-233, Petition for Approval, Appx. E (Dec. 1, 2020) (hereinafter "Customer Segmentation of Minnesota Power Residential Customers").

[26] Customer Segmentation of Minnesota Power Residential Customers at 10; *In the Matter of a Petition by the Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, CUB Initial Comments at 8 (Mar. 4, 2024).

[27] *In the Matter of a Petition by the Citizens Utility Board of Minnesota to Adopt Open Data Access Standards*, Docket No. E,G-999/M-19-505, CUB Initial Comments at 7 (Mar. 4, 2024).

[28] Xcel Data Access Complaint Comments at 5.

[29] *In the Matter of Xcel's Residential Time of Use Rate Design Pilot*, Docket No. E-002/M-17-775, Compliance Filing – Pilot Completion, Att. A at 11 (Feb. 10, 2023) (hereinafter "Final TOU Pilot Report").

holistic study of the contributions to utility system costs by different residential customer segments is therefore needed to better understand the full scope of potential cross-subsidization.

In Xcel's TOU pilot, about 20 percent of customers were identified as low income.[30] Of this percentage, a significant number of customers fell into multiple studied segments (i.e., they were both low-income and seniors, renters, or had smart thermostats), which made it difficult to isolate rate impacts or peak demand usage patterns for any given customer group.[31] The pilot also occurred between 2020 and 2022, during the height of the COVID-19 pandemic, which impacted customer energy usage patterns and complicated pilot analysis. Altogether, the combination of small sample sizes and statistically insignificant outcomes led Xcel's third-party evaluator to urge parties to use caution when interpreting pilot results.[32]

Xcel further suggests that, even if the customer segmentation study were to identify residential cross-subsidization, then its existing pilots and rate structures are sufficient to address the issue.[33] Specifically, Xcel points to its Low-Income, Low-Usage rate, its voluntary TOU rate offering, and its Automatic Bill Credit ("ABC") pilot.[34] Each of these programs are valuable in their own right, and are designed to either assist low-income residential customers and/or facilitate lower peak demand usage by aligning utility charges with generation costs. But the existence of these offerings does not detract from the value of a customer segmentation study.

As the Commission recognized in its discussion of Xcel's ABC pilot, a customer segmentation analysis would bolster ongoing efforts to address systemic inequities and ensure utility rates are affordable for residential households throughout Xcel's service territory.[35] The breadth of information and insights provided by the study could be used in a variety of proceedings to evaluate the efficacy of utility programs, identify ways to improve rate design and program offerings, or bolster utilities' ability to reach customers in need of assistance. Study results could support rate design modifications to more accurately reflect cost causation within the residential rate class or facilitate better utilization of existing rate options. For example, if the study confirms that low-income customers generally have lower on-peak usage, that evidence could be used to encourage households to enroll in TOU rates as a more affordable way of meeting their energy needs. Segmented load shapes could also inform the approach to cost allocation more generally in future rate cases or in the creation of new programs that offer utility rebates or discounts based on cost causation principles. Further, identifying the typical load shapes of residential households could help Xcel design more effective Energy

[30] Final TOU Pilot Report, Fig. ES-2 at 12, Fig. B-1 at 156; *see also* Final TOU Pilot Report, n. 6 (stating that customers were assigned to the low-income segment if Xcel's records showed they were enrolled in LIHEAP, if they responded to a survey indicating they were eligible for LIHEAP, or if a machine learning algorithm categorized them as low-income).
[31] *Id*. at 71-72 (stating that segment overlaps "present[] a challenge for the display of segment-specific impacts in a way that avoids confounding the effects of one segment with another."
[32] *Id*. at 72-74.
[33] Xcel Data Access Complaint Comments at 5-6.
[34] *Id*.
[35] *See generally* Minnesota Public Utilities Commission, Recorded Webcast of October 10, 2024 Hearing, beginning at 45:40, available at https://minnesotapuc.granicus.com/player/clip/2430?view_id=2&redirect=true.

Conservation and Optimization offerings, with communications and resources that are better tailored to specific customer segments.

Altogether, a customer segmentation study has the potential to provide substantial benefits and pave the way for additional research, rate design, and program modifications that will serve the public interest.

2. The Commission need not, and should not, direct Xcel to conduct such a study.

Despite the benefits of a customer segmentation analysis, we do not believe that it is necessary—nor a prudent use of ratepayer funds—for Xcel to conduct such a study. The Chan Lab stands ready and willing to evaluate these issues and welcomes the opportunity for stakeholders, the Commission, and Xcel to inform the study process. The Chan Lab has engaged Dr. Destinie Nock (Carnegie Mellon University) and Dr. Lucy Qiu (University of Maryland), who are experienced in conducting similar studies using anonymized CEUD provided by other utilities.[36] Aside from any costs related to Xcel's provision of the underlying data, the researchers will conduct this study at their own expense. In contrast, if the Commission were to direct Xcel to conduct a similar analysis, those costs would ultimately be passed onto ratepayers. The Chan Lab and CUB have committed to collaborating with interested stakeholders to design the study and will release the results of the analysis publicly.[37] We would be happy to file the study with the Commission, present at a Commission planning meeting, or otherwise share the analysis and conclusions with the utility, the Commission, and stakeholders.

Furthermore, we respectfully note that the Company's initial comments are neither supportive of conducting nor learning from the customer segmentation analysis. We believe this study will be best conducted by researchers who are genuinely curious about the research question it presents and who will pursue the analysis through a public interest lens, subject to the rigors of academic peer review.

The Commission should not direct Xcel to conduct a customer segmentation study. Instead, the Commission should direct Xcel to cooperate with the Chan Lab throughout project development and provide its researchers with the data necessary to carry out the proposed analysis.

3. Delaying a study until AMI implementation is completed is unnecessary.

Xcel suggests that, if the Commission approves a customer segmentation study or orders the release of CEUD to the Chan Lab, a study should not be conducted until AMI rollout is completed and a full year of data is available for all customers in the Company's service territory.[38] First, the question of

[36] See, e.g. *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, Reply Comments of Elise Harrington at 5-9, 12-13 (Apr. 29, 2024) (detailing CEUD studies conducted by Drs. Nock and Qiu).
[37] *In the Matter of a Commission Inquiry into Xcel Energy's Advanced Rate Design for Load Management*, Docket No. E002/CI-24-115, Letter of the Citizens Utility Board of Minnesota and Chan Lab at 3 (Feb. 13, 2025).
[38] Xcel Data Access Complaint Comments at 7.

study timing is irrelevant to Xcel's obligation to release anonymized CEUD to the Chan Lab. Second, such delay is unnecessary.

While as large a data set as possible is beneficial for any analysis, Xcel now has ample data for a robust study. When Minnesota Power chose to partner with CUB to conduct a similar analysis, it had 12 months of interval CEUD for approximately 41,900 households – just shy of 40 percent of its total residential customers at the time.[39] Both Minnesota Power and the research partners were confident that learnings could be gleaned from analyzing this significant share of the customer base.

As of April 2025, 12 months of AMI data was available for nearly 65 percent of Xcel customers;[40] 12 months of data will be available for thousands more customers by the time this proceeding concludes.[41] That Xcel does not have an entire year of data for all residential customers does not merit delaying the study and depriving the Commission of valuable insights relevant to setting just and reasonable rates.

C. The Commission should prohibit the imposition of a data access fee for this request.

Xcel indicates that if it is required to provide anonymized CEUD, it intends to "charge [a] data access fee for [the] request."[42] In an email to CUB, the Company initially estimated that cost to be approximately $20,000.[43] CUB and the Chan Lab attempted to engage in discussions with the Company to better understand these costs. Xcel denied a meeting with the Company's subject matter experts, citing the pending nature of the issue and uncertainty about how the Commission would rule on anonymized data access. However, Xcel did share additional information via email and, in response to an information request from CUB, increased its estimated data access fee to $34,000.[44]

1. Xcel has provided a high-level explanation of its estimated $34,000 fee.

Xcel's estimates are driven by three primary factors: (1) the anonymization of CEUD; (2) the grouping of data by census block group; and (3) legal expenses associated with executing Non-Disclosure Agreements ("NDAs") with the requesting parties.[45] The costs and timelines provided by the Company for each of these steps are summarized below:

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[39] Customer Segmentation of Minnesota Power Residential Customers at 7; *see also In the Matter of Cold Weather Rule Reports (CWR) – Regulated Gas & Electric Companies*, Docket No. E,G-999/PR-20-02, Minnesota Power December 2020 CWR Compliance Filing (Jan. 15, 2021) (placing the total number of residential accounts for the company at 107,026).
[40] Xcel Data Access Complaint Comments at 7.
[41] *See In the Matter of the Petition of Northern States Power Company for Approval of the Transmission Cost Recovery Rider Revenue Requirements for 2025, Tracker True-Up, and Revised Adjustment Factors*, Docket No. E-002/M-24-371, Annual Report, Att. A at Tab 3: Install and Deployment (Nov. 1, 2024) (reporting that Xcel had installed 1,047,481 AMI meters, or 74.8% of total planned deployment as of November 1, 2024, with 131,733 of those meters being installed in Q2 2024 and a further 133,174 being installed in Q3 2024).
[42] Xcel Data Access Complaint Comments at 13.
[43] Email from Nick Martin, Xcel Energy to Brandon Crawford (May 12, 2025) (included and hereinafter referred to as "Attachment C").
[44] Xcel Response to CUB Information Request 002 (May 15, 2025) (included and hereinafter referred to as "CUB IR-002"); *see also* Attachment C.
[45] CUB IR-002 at 2-3.

Step 1. Anonymization of CEUD - $10,000

Xcel estimates that compiling thirty-minute interval data from deployed AMI meters, applying the 15/15 standard to the requested data set, and assigning a unique identification code to each residence will take its Data & Analytics team approximately 60 person-hours over the course of 8-10 weeks.[46]

Step 2. Identify CEUD by Census Block Group - $4,000 - $10,000

To provide CEUD by census block grouping, Xcel estimates that its Geospatial Analysis team will spend approximately 40 person-hours over a period of 5-6 weeks at a cost of $4,000.[47] Notably, the cost estimate for this element of the request was originally much higher, with the Company quoting $10,000 for census block identification.[48]

Step 3. Legal Review of Data and Execution of Contracts - $20,000

Lastly, Xcel indicates that it plans to include legal expenses in the data access fee. Specifically, the Company states it will charge requesters for the time taken by its legal team to "review the release . . . to ensure customer re-identification risk is minimized and the release complies with ODAS."[49] Further, the Company states that it has "never executed an anonymized CEUD contract under these ODAS provisions" and expects the requesters to cover the costs associated with the negotiation and execution of contracts.[50] No timeline is provided for this step.

The Company admits that these are "rough estimates" but provides little explanation of how the costs were calculated, or about the timeframes associated with each aspect of the CEUD preparation process.[51] This is concerning, as the Standards require the utility to "collect the [data access] fee before preparing or supplying the requested data."[52] If the Company is allowed to require unsupported—and potentially overinflated—payments as a prerequisite of accessing data under ODAS, it will create an economic barrier to public interest research that works against the intent and purpose of the Standards.

2. <u>Xcel's cost estimates appear unreasonable and include certain expenses not allowed under the Standards.</u>

Based on its most recent estimations, Xcel intends to charge the Chan Lab a data access fee of approximately $34,000 prior to compiling and releasing the data necessary to conduct a customer segmentation study.[53] These costs are excessive when compared against other utilities' data fees. For

[46] *Id*.
[47] *Id*. at 3.
[48] *See* Attachment C.
[49] CUB IR-002 at 3.
[50] *Id*. at 3-4.
[51] *See* Attachment C (noting that costs are "rough estimates" and may be refined at a later date).
[52] Open Data Access Standards, Section VI.A(4)
[53] CUB IR-002.

example, Commonwealth Edison ("ComEd") anonymizes CEUD under the 15/15 standard at 30-minute intervals and charges access fees between $900 for five-digit zip code data and $1,300 for nine-digit zip code data.[54] A 50 percent discount is applied to data requests from non-profits, government agencies, and grant-based researching entities, mitigating expenses for public interest research purposes.[55] Based on conversations with ComEd personnel, it is our understanding that the process for anonymizing CEUD is nearly entirely automated; the only step requiring manual review is to ensure compliance with the 15/15 standard. Ameren Illinois has chosen to forgo any charge and provides anonymized CEUD to qualified requesters at no fee.[56]

We find the Company's proposed data access fee to be unreasonable. After applying the public interest discount, 24 months of nine-digit zip code data for the entirety of ComEd's Illinois service territory would cost the Chan Lab $650. We acknowledge that the Chan Lab's request for 36 months of data—rather than 24 months—could contribute to slightly higher expenses. However, it is unreasonable to conclude that this additional information justifies costs that are more than 50 times higher than ComEd's, particularly considering how ComEd's data includes millions more customers than Xcel's.[57]

Our concerns about the accuracy and reasonableness of expenses are further amplified by the changes between the Company's first and second cost estimations. Originally, Xcel stated that grouping CEUD by census block would take 40 hours over 5-6 weeks at a cost of $10,000.[58] In response to an information request submitted by CUB, this estimate was reduced to $4,000, despite the timeline and the number of person-hours remaining unchanged.[59] Although no explanation was provided for this variation, the significant reduction suggests the Company's original estimates were inflated.

Lastly, Xcel's inclusion of $20,000 in legal fees is beyond the permissible scope of recovery under ODAS. Pursuant to Section VI.A(1) of the Standards, data access fees must be based on the "actual costs incurred by the utility to create and deliver the requested data."[60] By its plain language, this provision contemplates potential expenses associated with compiling and anonymizing data but does not include legal fees.

There may be ways to reduce the burden on Xcel of providing CEUD—both to the Chan Lab and future requesters—such as automating the anonymization process. This would entail a one-time expense which is not appropriately borne by a single requester. Another method of streamlining data access

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[54] ComEd, *Anonymous Data FAQs: How Much Does it Cost[] to Access the Anonymous Data?*, https://www.comed.com/smart-energy/innovation-technology/anonymous-data-service/anonymous-data-faqs (last accessed Jun. 16, 2025).
[55] *Id*.
[56] *See In the Matter of a Petition by the Citizens Utility Board of Minnesota to Adopt Open Access Data Standards*, Docket No. E,G-999/M-19-505, Initial Comments of the Citizens Utility Board of Minnesota at 12 (Oct. 15, 2019) (noting that Ameren's data request process is "less formalized" and that the Illinois CUB reports not having received an invoice from Ameren for anonymized utility data).
[57] *See* ComEd, *About Us: We Are the Largest Electric Utility in Illinois*, https://www.comed.com/about-us/company-information (last accessed Jun. 17, 2025) (stating that ComEd "powers the lives of more than 4 million customers across northern Illinois, or 70 percent of the state's population").
[58] Attachment C.
[59] CUB IR-002 at 3.
[60] Open Data Access Standards, Section VI.A(1).

would be to develop a contract framework as envisioned and required by the Standards.[61] We are open to discussions about how to facilitate these improvements. Unfortunately, without the chance to speak with the Company's subject matter experts, we were unable to evaluate such opportunities.

3. Xcel should charge no fee for the provision of data to the Chan Lab.

Xcel has failed to provide an explanation for why its proposed $34,000 data access fee is reasonable. The Company's estimates are unsupported and far exceed similar charges assessed by other utilities providing anonymized data to public interest researchers.[62] Further, Xcel's inclusion of legal expenses in the data access fee is inconsistent with the Standards adopted by the Commission and would inappropriately shift costs to the requesting entity. Given these numerous shortcomings, the Commission should prohibit Xcel from imposing a data access fee in this instance.

This approach is consistent with Section VI.A(2) of the Standards, which requires utilities charging a data access fee to "consider the reasonable value of the data prepared to the utility and, if appropriate, reduce the fee assessed to the requesting person."[63] As discussed above, the value of a customer segmentation study is significant, not only to Xcel but also to the Commission and the Company's customers. Utility regulation relies on the appropriate and reasonable allocation of costs among ratepayers; if there are aspects of customers' energy usage that contribute to residential cross-subsidization, the Chan Lab's research could uncover those inequities. Furthermore, if the Chan Lab conducts this analysis instead of Xcel, ratepayers will be saved the expense associated with the study. For these reasons, we do not believe it is appropriate for Xcel to charge the Chan Lab for the costs of preparing and delivering the requested data.

If the Commission—despite the customer segmentation study's significant value and Xcel's failure to provide reliable cost estimates—nonetheless determines the Company may assess a fee for the requested data, we recommend a cap of $1,300 be instituted. This is twice the amount ComEd charges public interest researchers for nine-digit zip code data.

D. Xcel should be required to provide data in a timely manner.

Lastly, the Commission should establish parameters around when the requested data must be provided to the Chan Lab. The Standards require that utilities "work with third parties to facilitate timely and secure delivery of CEUD," and permits disputes to be brought before the Commission for resolution.[64] Rather than waiting for a dispute to arise, we respectfully request the Commission hold Xcel to the high-end of its initially estimated timeline. The Company anticipates data anonymization will take between 8 to 10 weeks, and that grouping CEUD by census block group will take an additional

[61] *See* Open Data Access Standards, Section III.B(3) (stating that "[e]ach utility covered under these standards must file their contract form developed pursuant to 2(v) above with the Commission").
[62] *See generally* ComEd, *Anonymous Data FAQs: How Much Does it Cost[] to Access the Anonymous Data?*, https://www.comed.com/smart-energy/innovation-technology/anonymous-data-service/anonymous-data-faqs (last accessed Jun. 16, 2025).
[63] Open Data Access Standards, Section VI.A(2).
[64] *Id*. at Section V.A.

5-6 weeks.[65] Altogether, Xcel's estimates place data compilation and delivery on a 16-week timeline. Although this appears long at first glance, we recognize this is the first request for anonymized data under the Standards, and that internal processes may need to be worked out to facilitate data access. We recommend the Commission formalize this timeline and require Xcel to deliver the requested CEUD to the Chan Lab within 16 weeks of its Order in this docket.

III. Conclusion

CUB and the Chan Lab appreciate the Commission's careful consideration of this matter. We respectfully request the Commission:

(1) Require Xcel to provide the Chan Lab with the requested data in a timely manner, not to exceed 16 weeks from the date of this Order.

(2) Prohibit the assessment of a data access fee against the Chan Lab for the instant request.

OR, as an alternative to Decision Option 2,

(3) Establish a $1,300 cap for the data access fee.

Sincerely, June 20, 2025

/s/ Annie Levenson-Falk
Executive Director
Citizens Utility Board of Minnesota
332 Minnesota Street, Suite W1360
St. Paul, MN 55101
annielf@cubminnesota.org
651-300-4701, ext. 1

/s/ Gabriel Chan
Associate Professor, University of Minnesota
Principal Investigator, Chan Lab
301 19th Ave S.
Minneapolis, MN 55455
gabechan@umn.edu
612-626-3292

/s/ Brandon Crawford
Brandon Crawford
Regulatory Advocate
Citizens Utility Board of Minnesota
332 Minnesota St., Suite W1360
St. Paul, MN 55101
brandonc@cubminnesota.org
651-300-4701, ext. 7

[65] CUB IR-002 at 2-3.

Gmail

24-115 Data Access - Estimations of Cost

5 messages

Brandon Crawford <brandonc@cubminnesota.org> Thu, Apr 24, 2025 at 8:44 AM
To: "Martin, Nick" <nicholas.f.martin@xcelenergy.com>
Cc: Gabriel Chan <gabechan@umn.edu>, Annie Levenson-Falk <annielf@cubminnesota.org>

Good morning Nick,

CUB and the Chan Lab reviewed Xcel's response to our complaint in Docket No. E-002/CI-24-115 and have a follow-up question for the Company. Specifically, Xcel states that if the Commission orders the Company to provide the Chan Lab with anonymized data, then it will charge a data access fee for the request. Can you please provide an estimate for how much it would cost to deliver the requested data? Please note that the Chan Lab is solely requesting anonymized data for the Company's Minnesota service territory, and not for the other jurisdictions in which Xcel conducts business.

Thank you,
Brandon Crawford | Regulatory Advocate
Citizens Utility Board of Minnesota
332 Minnesota St., Suite W1360, St. Paul, MN 55101
563-663-3519 (cell) | 651-300-4701, ext. 7 (main)

Martin, Nick <Nicholas.F.Martin@xcelenergy.com> Fri, Apr 25, 2025 at 12:23 PM
To: Brandon Crawford <brandonc@cubminnesota.org>
Cc: Gabriel Chan <gabechan@umn.edu>, Annie Levenson-Falk <annielf@cubminnesota.org>

Hi Brandon,

Thanks for that clarification. We are looking at the ODAS section VI.A, which says the data access fee should be “based on actual costs incurred to create and deliver the requested data.” It’s a lot of data – as we estimated in our comments, at least 19.3 billion individual data points, if we assume 30-minute interval data for ~1.1 million AMI meters currently deployed; likely more considering that more meters will be deployed by the time we were fulfilling this request. So we have made what for now is a very preliminary estimate of staff time, costs and turn-around time. We think it would be around $20k, and take 13-16 weeks to compile, anonymize, and geographically organize this data by Census Block Group. If the Commission were to order us to do so, we would attempt to further refine those estimates to ensure the fee represents actual costs.

Nick

From: Brandon Crawford <brandonc@cubminnesota.org>
Sent: Thursday, April 24, 2025 8:44 AM

To: Martin, Nick <Nicholas.F.Martin@xcelenergy.com>
Cc: Gabriel Chan <gabechan@umn.edu>; Annie Levenson-Falk <annielf@cubminnesota.org>
Subject: 24-115 Data Access - Estimations of Cost

[Quoted text hidden]

Martin, Nick <Nicholas.F.Martin@xcelenergy.com> Mon, May 12, 2025 at 5:52 PM
To: Brandon Crawford <brandonc@cubminnesota.org>
Cc: Gabriel Chan <gabechan@umn.edu>, Annie Levenson-Falk <annielf@cubminnesota.org>, "Liberkowski, Amy A" <amy.a.liberkowski@xcelenergy.com>, "Steinhaeuser, Lauren" <Lauren.Steinhaeuser@xcelenergy.com>

Hi Brandon,

OK, here's my best effort, based on what I was able to gather from our SMEs.

As noted in our comments, the University's Feb 13 Data Request is for at minimum 19.3 billion individual data points – more, if the Commission agrees with our position that this data should be compiled after 1 year of full deployment of AMI to be valid for any policy recommendations. At that point, there would be more than 1.1 million meters installed, and some meters would have more than 12 months of 30-minute interval data.

That large volume of data would need to be 1) compiled by our Data & Analytics team, 2) anonymized by same, and 3) identified by U.S. Census Block Group by our Geospatial team. We would also need to execute NDAs with the 3 universities.

The Data & Analytics team estimated 60+ person-hours and a turnaround time of 8-10 weeks for their part. They caveated this would depend on data availability in the Databricks environment. They also noted some data is only available for the 2010 Census blocks, so they would need to work with the GIS team to get updated Census block information. In anonymizing, they would first apply the 15/15 rule, then would have to assign some sort of numeric ID that cannot be re-identified to each customer. That's per the customer privacy and ODAS rules. Because of the size of the query, there could be additional charges for this size computational lift in Databricks. All told, they estimated about $10k for this piece.

For the Geospatial team component – assigning the anonymized interval data by Census Block Group – that team estimated 40 person-hours and about $10k in labor costs. This part would take a 5-6 week runway, they estimated.

Please note these are *rough estimates* – they would need to be re-examined and updated once we know what the Commission has ordered.

Another wrinkle is that we have never transferred this volume of data externally, and would need to investigate how to do that securely.

Finally, not included in the above estimates, I imagine there would need to be some amount of Legal review of the data as well, and Legal time to review and execute NDAs with the 3 universities. If any of those universities are unfamiliar with handling CEUD securely or with Minnesota's ODAS – as I would guess Carnegie Mellon and University of Maryland would be – they would likely have questions, which would add more time for back and forth.

So, that's a rough sense how we would come up with the Data Access Fee per ODAS section IV.A. Not trying to throw up barriers here – that's just our best guess at actual costs, which IV.A says the Data Access Fee should represent. We don't think our customers should bear these costs since, as we noted, the tariff options that we think such a study might point to are already available and/or approved by the PUC and will shortly be available to all customers.

Thanks

Nick

☐ **Not-Public Document – Not For Public Disclosure**
☐ **Public Document – Not-Public Data Has Been Excised**
☒ **Public Document**

Xcel Energy		Information Request No.	2
Docket No.:	E002/CI-24-115		
Response To:	Citizens Utility Board of Minnesota		
Requestor:	Brandon Crawford		
Date Received:	May 15, 2025		

Question:
Please copy the following individuals on all responses to CUB information requests: Annie Levenson-Falk (annielf@cubminnesota.org), Brandon Crawford (brandonc@cubminnesota.org), and Gabriel Chan (gabechan@umn.edu).

Reference page 13 of Xcel's April 16, 2025 Comments in Docket No. E002/CI-24-115. The Company states that it intends to charge requesters a "data access fee" based on the costs incurred to create and deliver the requested data.

a. Assuming the Commission orders the release of anonymized data, please provide an itemized calculation of the costs expected to be incurred for the preparation of the Chan Lab's request.

    i. Please provide any written estimates, communications, or quotes relevant to, or used in the creation of, this calculation.

    ii. Identify which of these costs are fixed and which are variable.

b. Please identify whether any of the costs identified in (a) are one-time expenses (i.e. those associated with the development of data processing tools, anonymization protocols, etc.).

    i. If yes, please identify which costs fit this criterion.

    ii. If yes, please explain whether these expenses are expected to be charged to subsequent data requesters, or if the costs will be lowered or eliminated.

Response:

a. The data access fee identified in the Company's Comments is expressly authorized by the Open Data Access Standards (ODAS), Section VI, Fees and Cost Recovery, which stipulates that:

> *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.*

Subject to refinement as this Docket and the Company's understanding of the work required to fill the February 13, 2025 Data Request (Data Request) evolves, we here attempt to provide our current estimate of those costs. The Data Request is for, conservatively, 19.3 billion individual data points: 12 months or more of 30-minute interval data from around 1.1 million Advanced Metering Infrastructure (AMI) meters deployed as of the date of the request. That number will be larger if the Commission agrees with the Company's position, stated in our April 16, 2025 Comments, that this data should be compiled after one year of full deployment of AMI in order to be representative of all of the Company's Minnesota residential customers. With full deployment of AMI, there would be more than 1.1 million meters installed, and some meters would have more than 12 months of 30-minute interval data. Fulfilling this request under the provisions of the ODAS would require the following actions. As required by ODAS, the Data Access Fee will be based on actual costs incurred to create and deliver the requested data, which could be more or less than these estimates.

Step 1: Compile and anonymize 12 to 36 months of 30-minute data from individual AMI meters. Thirty-minute interval data from all deployed AMI meters would be compiled by the Company's Data & Analytics team. To anonymize the CEUD per ODAS Section III.B(2), the team would apply the 15/15 rule: anonymized data sets may include CEUD from no fewer than 15 customers, and any single customer's energy use must not constitute more than 15 percent of total energy consumption for the data set. They would then assign a unique customer identification code to each anonymous customer in the data set, which must remain consistent within the data set and shall not be used in other data sets.[1] The Data & Analytics team has estimated around 60 person-hours for

[1] ODAS Section III.B(2).

these steps, with a turnaround time of 8-10 weeks. Their estimate is roughly $10,000 in labor costs. The data would be managed in the Databricks environment, and there may be additional charges for a computational request of this size in Databricks; any such charges or fees are not included in the above estimate.

Step 2: Identify CEUD by Census Block Group. Once compiled and anonymized, the AMI interval data would need to be identified by U.S. Census Block group to fulfill part 4 of the Data Request. For this step, the Company's Geospatial Analysis team has estimated around 40 person-hours, with a turnaround time of 5-6 weeks. Our estimate for this step is roughly an additional $4,000 in labor costs.

Step 3: Legal review of data, and execution of contracts with the three requesters. The Company takes customer privacy very seriously, which is part of the reason we have denied this request for CEUD. We indicated that per ODAS Section III.C, the Company would refuse requests for CEUD when we believe "the data release would create a security risk for the utility, its customer(s), or the public, or the release would allow a third-party to re-identify customers."[2] We do not imply that the three universities intend to re-identify customers – simply that once CEUD leaves the Company, we have no further control over how it is used. We believe the risk of re-identification cannot be fully mitigated until such time as objective standards are developed for sharing anonymized customer data without the risk of re-identification.[3] If the Commission nonetheless orders the Data Request to be fulfilled, our Legal team would need to review the release carefully to ensure customer re-identification risk is minimized and the release complies with the ODAS.

Second, our Legal team would need to negotiate and execute contracts under ODAS Section III.B(2)(v) with any third party receiving the anonymized data. That section specifies detailed requirements for such contracts, including: prevention of reverse engineering for re-identification; disclosure of all employees, subcontractors, or agents who will have access to the data; prohibitions on disclosure of CUED to other parties; prohibitions on sharing with other parties unless they too have executed a non-disclosure agreement with the Company (this provision would require all three universities to sign non-disclosure agreements); holding the third party responsible for its actions with the CEUD; deletion and notification to the Company if any Personally Identifiable Information is discovered in the data set; disclosure of intended use(s) of the data; and data

[2] ODAS Section III.C.
[3] Company's April 16, 2025 Comments *In the Matter of a Commission Inquiry into Xcel Energy's Advanced Rate Design for Load Management*. Docket No. E002/CI-24-115. Pages 10-12.

retention and deletion timeframes.[4] The Company has never executed an anonymized CEUD contract under these ODAS provisions, and numerous variables could make negotiation with multiple different universities time consuming. In addition, depending on how the data is made available to the receiving parties, additional legal documentation may need to be negotiated and executed. Together, this makes an estimation of legal costs difficult. As a preliminary matter, we estimate approximately $20,000 in associated labor costs.

i. The Company prepared these cost estimates internally; no quotes from external parties were used.

ii. Steps 1 and 2 would represent variable costs (proportional to the volume of CEUD requested). Step 3 is a fixed cost, assuming no additional third parties are added to the Data Request.

b. We do not believe any of the costs described above are one-time expenses. Each of the three steps would need to be repeated for a subsequent request for anonymized CEUD.

Preparer:	Nicholas F. Martin
Title:	Director, Strategic Outreach & Advocacy
Department:	NSPM Regulatory
Telephone:	(612) 330-6255
Date:	May 29, 2025

[4] ODAS Section III.B(2), parts (v) and (vi).