414 Nicollet Mall
Minneapolis, MN 55401

February 26, 2018

**—Via Electronic Filing—**

Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: REPLY COMMENTS
BIENNIAL DISTRIBUTION GRID MODERNIZATION REPORT
DOCKET NO. E002/M-17-776

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits the enclosed Reply Comments in response to the Comments received on February 5, 2018 to our Residential Time of Use Rate Design Pilot Petition.

Pursuant to Minn. Stat. § 216.17, subd. 3, we have electronically filed this document, and served copies on all parties on the attached service lists. If you have any questions about this filing, please contact Amber Hedlund at amber.r.hedlund@xcelenergy.com or (612) 337-2268 or me at holly.r.hinman@xcelenergy.com. or (612) 330-5941.

Sincerely,

/s/

HOLLY HINMAN
REGULATORY MANAGER

Enclosures
c: Service List

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

| | |
|---|---|
| Nancy Lange | Chair |
| Dan Lipschultz | Commissioner |
| Matthew Schuerger | Commissioner |
| Katie J. Sieben | Commissioner |
| John A. Tuma | Commissioner |

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| IN THE MATTER OF THE PETITION OF NORTHERN STATES POWER COMPANY FOR APPROVAL OF A TIME OF USE RATE DESIGN PILOT PROGRAM | DOCKET NO. E002/M-17-775 |
| | **REPLY COMMENTS** |

## OVERVIEW

Northern States Power Company, doing business as Xcel Energy, submits these Reply Comments in response to the Comments received on February 5, 2018 to our Residential Time of Use (TOU) Rate Design Pilot Petition.

We believe the Company has put forward a pilot design that is reasonable and well-supported, and that will deliver significant learnings on the operations of a TOU pilot and on future TOU rate development and implementation. The Pilot also takes a step towards reducing our system peak demand. We appreciate the engagement of many parties in the design and development of this proposal, and this constructive engagement is reflected in the high degree of consensus apparent in Comments.

We believe the engagement of stakeholders has been instrumental in striking the right balance on features of the Pilot design. By carefully identifying and ranking potential objectives of the Pilot, stakeholders provided helpful input to the Company early on about the study variables of most (and least) importance, as well as assistance in navigating the considerations to be balanced within the scope of a limited pilot.

While the questions to be explored through a pilot project are necessarily limited, we believe the engagement of stakeholders and the resulting design appropriately balances key considerations including complexity, precision, cost, administrative efficiency, and learning value. We believe the resulting design features – including who is to be studied, what technology should be used, and what rate design should be applied – achieve a balance of these key considerations.

We appreciate the comments from parties that concluded our proposal was reasonable and recommended Commission approval. Here we address the relatively minimal modifications and clarifications sought by parties in Initial Comments.

In these Reply Comments, we provide more support for our customer engagement strategy in response to parties' Comments. While we anticipate ongoing development of detailed plans for preparing and deploying the pilot, we provide a discussion of our preliminary approach to customer engagement. As discussed in our Petition, these plans leverage learnings and knowledge from within and outside of the Company's own experience.

Our Reply is organized as follows:

A. Pilot Implementation and Operation
B. Proposed Tariff and Rate Design
C. Accounting and Recovery Issues
D. Customer Data Issues
E. Compliance Reports
F. Post-Pilot Issues and Planning

## REPLY COMMENTS

In these Reply Comments, we respond to requests for clarifying detail on our Pilot proposal and we respond to proposed modifications made in Initial Comments.

## A. Pilot Implementation and Operation

The Company is enthusiastic about bringing forward an innovative new design for a TOU pilot project. The Pilot will generate learnings that can inform the development of a potential future wider rollout of TOU rates or other rate developments. A pilot that is scaled appropriately, with a simplified sample population, is key to delivering on the desired outcomes. In Initial Comments, parties raised questions about how the Pilot will be implemented and operated, including why certain customer groups are excluded, how the Company will engage with Pilot participants, and why a dedicated employee is necessary to manage the Pilot. We respond to these topics.

### *1. Appropriate Scope of Pilot Participation*

The Department of Commerce, Division of Energy Resources (Department) requested clarification about why customers, including those on Energy Controlled Service, Residential EV Service, and Limited Off-Peak Service would create additional complexity and warrant exclusion from this Pilot. The Office of the Attorney

General – Residential Utilities and Antitrust Division (OAG) and Fresh Energy and Minnesota Center for Environmental Advocacy (FE/MCEA) raised questions as to why net metering customers should not be included as well. Finally, the Suburban Rate Authority (SRA) expressed some concern about customers in certain communities being excluded from potential participation. We respond to each of these topics here.

a. Excluding Customers with Complex Service Profiles is Reasonable

The Company has proposed excluding customers on net metering service, Residential EV Service, Limited Off-Peak Service, and Energy Controlled Service from participation in the Pilot to avoid the complex process of combining these rate types with the proposed TOU Rate service. We believe these exclusions are reasonable for three primary reasons.

First, their exclusion would result in a minor impact on the Pilot because of the relatively few customers receiving these services, an estimated one to two percent of the potential Pilot population. The treatment group would be drawn from a subset of this population, resulting in even fewer customers with the excluded service profiles. Without a statistically significant sample, the Pilot would likely deliver minimal insights into customer response to the Pilot.

Second, combining TOU rates with these services is not reasonably practical, given the complexity of administration and system investments needed to serve a very small number of unique customers. In some instances there are unique meter configurations and set-ups at the customer site needed to accurately serve these customers today. The building and programming of data for each different rate that interacts with the requirements and rate application of the TOU Pilot is a further source of significant complexity, as combining rates requires melding different rules and algorithms within the billing system. The Company does not believe the complexity of the additional billing system set-up work is justified, particularly for so few customers.

Third, customers in the excluded categories have other opportunities. For example, customers already have the option to take service under our existing time-of-day (TOD) tariff. For electric vehicle (EV) customers under the Residential EV Service tariff, the customer has already opted to isolate their EV to receive favorable rates for off-peak EV charging. They have made this choice in lieu of putting their whole house on our existing TOU service. It is important to note that the TOU pilot does

not exclude all EV drivers. Customers with EVs who are not taking service under an EV-specific tariff are free to participate in the Pilot.

We would like to briefly mention medical equipment dependent customers. We intended to recommend an exclusion of this group of customers from the Pilot, but this was not specified in our Petition. The recommended exclusion of medical equipment dependent customers is a precaution to recognize that energy requirements for medical equipment may be fixed and could represent a substantial portion of total household energy usage. Although TOU could benefit customers with medical equipment that has a constant usage pattern, other usage patterns of medical equipment that vary by time or temperature could increase the risk of a TOU related bill increase. If the sample population for the Pilot included an unrepresentative level of medical equipment dependent customers, and that usage is not available for responding to TOU prices, the statistical quality of findings from the Pilot may be affected.

b. Excluding Net Metering Customers is Reasonable

For similar reasons to those discussed above, the Company also believes it is reasonable to exclude net metering customers from the pilot. FE/MCEA suggested using the pilot to learn more about the net-metered customer segment. The billing of net metering customer is already highly complex and layering a three-tiered TOU rate structure and pilot services on top of that would, in our view, tip away from the right balance of completeness and complexity for the Pilot.[1]

As currently structured, the billing of net metering customers on the currently existing TOD rate requires 11 separate meter readings. These include:

- total energy delivered by Company,
- total energy delivered by customer,
- on-peak energy delivered by Company,
- on-peak energy delivered by customer,
- off-peak energy delivered by Company,
- off-peak energy delivered by customer,
- on-peak net generated by customer,

[1] Xcel Energy has included net metering customers in its TOU Rate Pilot currently operating in Colorado. However, that Pilot is unique in that it arises through a settlement, is structured as a voluntary opt-in framework, and serves a population with a higher penetration of photovoltaic (PV) systems than in Minnesota.

- off-peak net generated by customer,
- on-peak net delivered by Company,
- off-peak net delivered by Company, and
- on-peak demand delivered by customer.

Each of the items listed have associated tariff calculations that are required for proper billing. Under a three-tiered TOU rate structure, the list would go up to 16 separate meter readings, at a minimum, with all new needed readings associated with the mid-peak period that does not exist under our existing TOD tariff. It is possible that certain customers would require an even greater amount of meter readings, based on their specific circumstances.

Any new meter readings that are required would necessitate new system algorithms to be determined and applied through every calculation. This added complexity would only be compounded by the fact that the bill protections would require an analysis of data going back into the past, including calculating monthly net generated and delivered amounts. These become even further complicated when comparing the on-peak and off-peak periods of our current TOD rate to our proposed three-tiered TOU rate structure. Net metering customers already represent a very small subset of total customers. Their inclusion would result in a large amount of complexity for a small amount of additional learnings, due to the small population.

In addition, the customer sample size would limit any firm conclusions as would the different sizes of the PV systems. For instance, some customers may have large systems, as compared to their load, that allow the household to essentially bank credits from one season to another, while other customers may have small systems that do not produce large monthly excesses. The various economic impacts and customer motivations would further limit any credible findings.

Further, FE/MCEA advocate for the Company to engage net-metered solar customers to determine the impact of the TOU rate on the solar market. To interpret potential market impacts, the advanced TOU rate being proposed should be mixed with equally advanced price signals for rooftop solar exports. That is one of the reasons why states around the country have made moves to send more accurate price signals to rooftop solar exports. To start, obtaining full distribution credit for exports when those exports do not align with top distribution related hours does not send an accurate price signal. A compensation structure with the real time netting out of distribution credits during non-peak hours would start to send more accurate price signals and it would encourage a better matching of load to production. We respond

to this issue as it was raised by FE/MCEA, but addressing the structure of solar compensation is out of scope in this pilot.

c. Geographic Areas of Pilot

We appreciate that the Department and the OAG have concluded that the Pilot's focus on specific geographic areas is reasonable. As the Department notes, the areas identified are sufficiently diverse and representative for the purposes of the Pilot, and the method for selecting customers is reasonable.

We appreciate the enthusiasm of communities about the Pilot and we are continuing discussions with our key community partners in advance of Pilot implementation. We would like to correct a statement made in Initial Comments. The SRA states, "despite the Westgate substation boundaries encompassing portions of Chanhassen and Minnetonka, neither city has any residential customers within the pilot test area." Citing this, the SRA claims that those communities have been misled about potential participation in the Pilot. To be clear, within the proposed pilot service boundaries, our records show upwards of 2,500 residential customers in Minnetonka and 2,300 residential customers in Chanhassen. As stated in our filing, in stakeholder discussions, and to the representatives in the communities we work with, it is not yet known how many customers from these communities will be selected for participation in the Pilot. There have been no direct communications to customers yet, as the Pilot is still pending regulatory review.

*2. Customer Engagement*

As the Company prepares to roll out the installation of meters and select treatment and control groups for the Pilot, it will be important to have a transparent, proactive communications plan to help ensure customer trust and comfort with the new meters and Pilot rate offering. We are pleased to provide additional context surrounding our customer engagement strategy in these Reply Comments.

The Company has developed a detailed Customer Engagement and Education plan, which provides specific activities to be taken on in each phase, engagement and communication methods, and other details. This plan is presented as Attachment A to these Reply Comments. It is important to note that this is a preliminary, working plan that presents a cost-effective, yet wide-reaching customer education and communication plan. It is a preliminary plan subject to change based on additional research, testing and plan refinement as we get closer to launch, as well as consideration of new tools and customer insights platforms. We provide a summary of the engagement plan here.

Based on Company experience and knowledge of industry best practices, we have identified four main outreach categories. The first is audience, ensuring that communications are targeted and designed in a way that reaches the relevant customer segments. The second is channels, using prime channels to reach the targeted audience. The third is timing, addressing the frequency, duration and sequencing of messaging in preferred channels to reach the target audience. The fourth is packaged content, the actual messaging content that is delivered to customers at each stage of the engagement.

Customer information and engagement efforts will be grouped into two phases that will create a positive customer experience and help the Company better understand customers' interests, concerns and response to meter installations and the TOU rates. Phase one will focus on raising awareness of the meter installation and ensuring effective change management, customer satisfaction and engagement. This phase will target all customers in the Pilot areas receiving new meters. Phase two will focus on educating and advising those customers in the TOU Pilot treatment group on when to use energy to optimize savings, and sharing communication, tools and insights regarding how to successfully participate in the Pilot and what options exist.

Phase one of the customer engagement plan will be rolled out to focus on early awareness with an aim to build understanding among impacted customers as to why they are receiving a new meter, with a focus on customer benefits. All customers receiving new meters, including those in the treatment and control groups will be included in this effort. As the scheduled meter installations get closer, the engagement focus will shift to meter installation awareness and outreach, with an aim to ensure customers understand the installation process and limit communication before the installations occur. Post-meter installation, the Company will continue to engage with customers, and will aim to educate customers on the Pilot and whether they have been selected for the treatment or control groups, along with answering questions and ensuring customer satisfaction.

While phase one of the engagement plan is focused on the time period before, during, and immediately following the installation of the advanced meters, phase two will last the duration of the Pilot. It will be an on-going effort to engage with and educate those customers selected for the treatment group, and will be focused on ensuring that customers understand the Pilot details and what they need to do. It will include information that will help customers remain aware of opt-out options and what happens after the Pilot concludes.

*3. Dedicated resource is necessary to properly manage pilot activities*

The Company anticipates that the Pilot will require the services of one full-time equivalent and one part-time marketing assistant in order to manage the Pilot activities. Having resources dedicated to the work will ensure a focus of effort that will benefit the success of the Pilot operations.

The full-time program manager will be responsible for the overall customer experience, from initial awareness through the end of the Pilot experience. They will use education tools, communications, budget management, and various internal contacts to create and deliver a robust customer experience. Daily and monthly tasks for the position will include:

- checking enrollment and opt-out rates daily, weekly, and monthly and adjusting marketing outreach, customer experience, and education tactics to maintain adequate participation to meet our measurement and validation (M&V) goals;
- tracking the budget and reporting regularly on pilot participation, attrition, and milestones of the Pilot;
- receiving and addressing any customer issues arising from the call center, metering, and any other customer facing organization;
- providing oversight of the M&V contractor, including attending regular status meetings and gathering data; and
- general program management and administration.

The marketing assistant will be responsible for implementation, communication and tracking tasks, delivering escalated customer support, and ensuring data accuracy and timely customer response. Daily and monthly tasks for the position will include:

- align and implement education campaigns associated with bill triggers, support marketing events and coordinate all web and communication campaigns with the existing communication teams;
- send "welcome packet" email or direct mail campaign to all new participants timed around their first bill;
- manage program inbox and respond to customer concerns;
- provide regular status updates with the billing and metering areas and addressing ad-hoc issues as they arise;
- manage inquiries, customer support, and fulfill customer needs; and
- gather customer list and manage process to deliver customer surveys on a regular basis.

These positions will be filled by outside contractors, as the Pilot is time-limited and internal resources are fully utilized. Additionally, the work-flow for temporary positions is more fluid and using outside contractors will allow for nimble responses to ensure there are resources to meet the work demands.

## B. Proposed Tariff and Rate Design

Our proposed tariff and rate design are intended to study how best to incorporate a TOU rate into our electric service. The goal is to gauge how the TOU rate impacts different types of customers and how customers are able to respond to the price signals established in the rate structure. The tariff includes bill protections for customers in the event that their situation does not provide opportunities to respond to the established price signals or the price signals are structured in a way that increases a customer's bill.

In this section we will provide additional clarification on the proposed tariff language for bill protections for LIHEAP recipients and how the bill repayment and low income customer discounts will be handled under the proposed tariff language. Finally, we will discuss our proposed peak time period and why it is the appropriate representative of the on-peak period for our electric system.

### *1. Clarifying LIHEAP Protection under Tariff*

The Department proposed modifications to the Company's tariff to ensure it was in clear alignment with the Pilot proposal with respect to treatment of LIHEAP recipients. We agree with the Department and include an updated version of the modified language as Attachment B to these Reply Comments. We adopted the Department's recommendation and we also provide additional tariff language to address what happens if the customer starts to receive energy assistance after the pilot has begun. We have included only the tariff page that is being further refined with these Reply Comments.

### *2. No Change to Arrearage Policies*

The Department also requested clarification about how customers who fall behind on their bills will be treated when it comes to bill protections. The Pilot will have no effect on customer options or Company response to non-payment. The bill protection mechanism will true-up the customer to flat rates (if flat rates would have been favorable) according to the terms described in the proposed tariff, but the true-up will not provide any bill forgiveness.

If a customer falls behind on bills and is LIHEAP-enrolled, they can also apply for Power ON benefits, which provide bill repayment assistance. Customer participation in the pilot will have no impact on this option. Customers retain the option to opt out of the pilot at any time.

*3. Customers must be LIHEAP recipients to receive extra bill protections*

The OAG proposed a modification that would extend the enhanced level of bill protections to all customers who identify as LIHEAP eligible during the surveying process. We do not support this approach for five primary reasons.

First, LIHEAP provides a low-cost, independent verification process. This process is important to ensure that those that need electric assistance receive it. LIHEAP accepts applications from September through May each year and this provides a reasonable period of time for customers to be certified as income eligible. The Department, contracted agencies, and utilities, promote LIHEAP as a program to become eligible for financial assistance, federal weatherization, and company-managed programs. A customer self-declaring eligibility in a pre-Pilot survey would not be afforded any of these programs benefits. Doing so in the Pilot goes against the well-established LIHEAP process and could raise questions around overall Pilot integrity.

Second, all customers in the Pilot will receive bill protection, not just LIHEAP recipients. While LIHEAP customers will receive the highest amount of protection, non-LIHEAP customers will also receive the true-up for bill impacts that exceed a 10 percent variance from flat rates at the end of year one.

Third, as discussed in our Petition, it is expected that overall impacts will be low, as the rates are designed to be neutral, with savings opportunities off peak offsetting higher priced peak periods.

Fourth, the Company is taking the extraordinary step in this instance of assessing potential eligibility for LIHEAP in the pre-Pilot phase and directing those identified to LIHEAP application materials. As discussed in our Petition, during the pre-survey process, customers will be asked to provide the Company with income and household size information. Based on that information, the Company will be able to identify potentially eligible customers who are not already enrolled and direct those customers to our LIHEAP program for verification and enrollment.

Finally, the customer retains the ability to opt out at any time. In light of all these circumstances, we do not believe it is reasonable to offer treatment reserved for a verified customer group to unverified customers.

*4. Proposed on-peak period best represents system peaks*

The proposed 3 PM – 8 PM on-peak period considered and balanced several factors to determine what would be the most appropriate and cost-effective design for the eventual application to all or most residential customers. Two key factors are reducing contributions to peak demand at that time and accurately recognizing the increasing integration of renewable energy resources. These factors are intimately affected by a mix of energy supply resources that is quickly changing. Selecting an on-peak period using system peak loads from several years prior (e.g. 2012 -2016 peak day figures) to the possible wide-spread application of the residential TOU tariff is not reasonable, severely limits actionable findings from the pilot, and provides relatively no recognition of the influence of renewable energy resources. This approach misses an opportunity to achieve price signals that more effectively discourage the use of non-renewable resources. The forecast net system basis for the proposed TOU Pilot was designed to focus price signals and customer incentives to minimize reliance on non-renewable generation resources for the supply of system peak loads - this was a primary stakeholder objective.

FE/MCEA recommendations would defeat one of the main purposes of the Pilot as defined by stakeholders, is counter to their stated goals, and prevents learnings from the pilot to be translatable for post pilot possibilities. A key stakeholder goal was renewable integration including making the best use of those resources. An important feature of the proposed TOU Pilot rate design is its relatively low midnight to 6 AM off-peak rate, which was a stated goal of FE/MCEA. This goal would be substantially undermined with a rate design process based on year 2016 gross system loads in place of the proposed year 2024 net system loads. This change would reduce the proposed on-peak rate by 3.2 cents per kWh and increase the off-peak rate by 2.4 cents per kWh. A revised on-peak period of 2 PM – 6 PM would further reduce the on-peak rate by 1.2 cents per kWh.

FE/MCEA advocates using peak days and peak hours to select an on-peak period. The Company reviewed both peak and average weekdays, finding that the peak day does not adequately represent the top several days, such as the top five days in a month. Giving August the same weight as July is also inconsistent with the peak day focus, as July forecast loads are consistently and considerably higher. Additionally, an exclusive reliance on only summer peak days also gives no consideration or balance to

the 12-month application of the on-peak period, including peak winter months with peak load hours often extending until 8 PM.

Even with the forecast single peak day perspective provided in Appendix Figure A-1 to FE/MCEA Comments, for year 2024 the peak hour is the hour following their recommended 2 PM – 6 PM on-peak period, occurring from 6PM – 7PM. The focus on year 2024 information is important and was a primary focus for the proposed rate design, and is conservative as the year 2030 forecast includes considerably more renewable energy resources and even later peak hours. Rather than attempting to dismiss forecast year 2024 information as introducing uncertainty, it is important to recognize that 2024 is the most realistic basis for a forward-looking rate design that has potential to be the most appropriate for general application. Finally, the suggestion that MISO capacity requirements will be triggered ignores the fact that over 2000 MW of additional renewable system capacity is planned between now and 2024.

A four-hour on-peak period in place of the proposed five-hour on-peak period has several disadvantages. It does not adequately recognize variations in the net peak hours throughout the year and more importantly, peak loads do not rise and fall that quickly or consistently. The price and timing of the peak period serve as a customer incentive to shift load out of the peak period to reduce system peak loads and reduce power supply costs. A critical concern with selecting a peak period is an excessive amount of load shifting immediately before and after the defined time period, to the point of driving a new peak time outside of an established peak period. This is especially a concern when loads during the hours shouldering the peak period are not substantially lower, as with the Company's system load profile. This concern and possibility is substantially greater with four-hour peak duration than with the proposed five-hour on-peak period. For the top five July 2024 days, each of the two hours following the FE/MCEA recommended four hour on-peak period are within the top two percent of indexed hours for the month. No comprehensive analysis would suggest shrinking the peak duration to four hours.

A decision on the number of on-peak hours must be driven by the facts. Ease of customer response is a reasonable consideration, but it cannot be relied on independently without supporting load and cost profiles. The proposed 3 PM – 8 PM on-peak period provides a focused and well-supported price signal in balance with providing customers a reasonable opportunity for price response. In fact, the results of the Cost Duration Method illustrate that the FE/MCEA suggested timeframe and duration do not capture the appropriate hours. Shrinking the peak period duration should not lead to a decrease in the peak rate, but it does under their rate suggestion.

The choice of an on-peak period also links back to our earlier net metering conversation. FE/MCEA state that valuable learnings can be had regarding the economics of rooftop solar on the TOU rate. However, fixed tilt rooftop solar is a non-dispatchable production technology. A simple spreadsheet model using NREL's PVWatts data for Minnesota will be able to provide an accurate assessment of the value proposition of rooftop solar on the TOU rate.[2] One can even examine the economics with different orientations of panels, all without incurring the expense of installing different PV systems. In fact, the FE/MCEA proposal to move the peak time frame to 2 PM – 6 PM could clearly be modeled to show a direct increase in solar compensation. This is likely the goal of such a suggestion which would place compensation above the current retail rate and further above the Value of Solar rate. Increasing the cost shift to meet a narrow goal that did not come up in the various stakeholder meetings is not appropriate for this pilot.

## C. Accounting and Recovery Issues

In its Petition, the Company has set forth a plan to implement a TOU Pilot, and we have provided an estimate of Pilot costs. Separately, in the Grid Modernization and biennial report proceeding (Grid Modernization docket)[3], the Company has sought certification of the pilot under the Grid Mod statute. As we have stated, the Company will not make a cost recovery proposal until and unless the pilot is first certified by the Commission. We anticipate seeking recovery of eligible costs through the TCR Rider. We maintain that, to the extent Pilot costs are not approved for recovery, the Company would stop the Pilot process and wait for a future rate case to bring the Pilot and any remaining costs forward.

While we appreciate the interest of the DOC and OAG in working through cost recovery questions at this stage, we believe it is premature prior to certification and in the absence of a recovery proposal. That said, we believe these are new and legitimate costs and the Commission will continue to develop its guidance on certification. We also believe rider mechanisms are important tools that allow for efficient recovery of costs to encourage the development of projects that deliver important economic, environmental, and societal goals. We believe the Pilot proposed by the Company fits squarely within the cost recovery mechanism as set forth in statute.

[2] http://pvwatts.nrel.gov/
[3] Docket No. E002/M-17-776

*1. Enrollment Targets are Unnecessary*

We would also like to briefly address the possibility of the Commission setting an enrollment target in order to incentivize the Company to commit to customer outreach and engagement.

The Company is confident that it will have strong participation in the Pilot. Opt-out proposals are known to be an efficient means of acquiring and retaining a statistically significant sample for evaluation purposes. Pairing the opt-out proposal with the customer engagement plan should deliver a useful data set. We do not believe a target is necessary, as the Pilot is designed to deliver meaningful results.

Focusing on a specific participation target may take focus away from learning how the TOU rate structure impacts peak demand, testing approaches to engage with customers, and other issues of Pilot operation that are essential prior to the ability to scale. That knowledge will be more useful for a potential wider rollout of TOU rates than ensuring a certain participation level in this limited Pilot. Accordingly we do not support participation targets in the pilot or conditioning cost recovery on target attainment.

## D. Customer Data Issues

Customer data will be a critical component in the success of this Pilot, both for the Company and customers. On the Company side, the customer data will inform our analysis of the success at reducing peak demands and will allow us to analyze how different customer segments react to the price signals built into the TOU rate structure. With access to their usage data, customers will be better equipped to respond to the price signals and gain the full benefits they can from the Pilot.

With such an important topic, we appreciate the opportunity to address a few questions and issues raised by parties. The Department requested additional clarification on how we will gather the proper amount of baseline data, which we provide below. We also respond to the Citizen Utility Board of Minnesota's (CUB) recommendation that individual customer data usage should be made available to third parties.

*1. Control group will provide baseline data for analysis*

We are pleased that the Department reviewed the timing of our Pilot development, meter installation, and baseline data collection and determined that our timeline is generally reasonable. As a part of their analysis, the Department has requested some

clarification of how we expect to collect the proper amount of baseline data between our meter rollout and the start of the Pilot. This is an important issue and we appreciate the opportunity to provide additional clarity.

Based on our current Pilot work timeline, we expect to begin the installation of advanced meters in Q3 or Q4 of 2019. We will be staggering our meter rollout and will begin collecting baseline data as soon as the new meters are installed and online. This will provide a few months of pre-TOU data from customers who are first to receive meters before the Pilot begins in Q1 of 2020. This information is essentially bonus data, however, as the driver of baseline data is the large control group of 7,500 customers that will provide the data to measure against throughout the length of the Pilot.

*2. Customer data should not be shared at this time*

CUB observes that the Pilot will generate a wealth of new data about how individual customers use energy – and asserts that this data should be made available to the public and to stakeholders. CUB has specifically requested that,

> *anonymized, individual customer usage data from pilot participants be made available in increments of one hour or smaller and associated with each customer's ZIP+4 as well as income, household size, and any additional characteristics that will be learned through pilot surveys.*[4]

The approval of CUB's recommendation would result in the release of Customer Energy Usage Data (CEUD) to third parties. We do not believe this is a reasonable position and we do not support CUB's recommendation.

We take our responsibility to secure and protect our customers' data and information about our grid very seriously. With respect to customer data, while we believe there is an appropriate balance between customer privacy and confidentiality and access to further public policy objectives, we believe *customer control* and *consent* are vital aspects of any privacy paradigm. When it comes to CEUD, our privacy practice states,

> *Xcel Energy recognizes your expectation of privacy for your personal information and Energy Usage Data. We will not sell this information and will not disclose it to third parties except as described in our Privacy Policy, which is available at* ***xcelenergy.com/Privacy****. This means that we will only disclose your information in limited circumstances, such as when*

[4] *See* Initial Comments of the Citizens Utility Board of Minnesota, Page 4, Docket No. E002/M-17-775 (February 5, 2018

*permitted or required by law or applicable regulations, where necessary to provide you with service or operate our business (for example, to our vendors), or with your explicit consent.*

Our privacy policy has provided our customers with the expectation that their data will be kept private and we do not believe this Pilot necessitates changing that expectation.

Before considering the release of CEUD, the risks inherent in such a release should be considered. The Commission explored a number of aspects of customer data privacy in Docket No. E,G999/CI-12-1344 (CEUD Docket). As a part of the CEUD Docket, a Workgroup was established consisting of Utilities, advocacy groups, and municipal and state agencies. One of the issues addressed by the Workgroup was the risks associated with the release of customer data to third-parties. Early in this process,

> *the CEUD Workgroup (Workgroup) identified several possible risks associated with disclosure.[5] Certain types of CEUD can reveal energy usage patterns from which it could be determined whether a residential property is regularly occupied, the schedules maintained by residents, and perhaps the existence of specific energy-dependent activities or devices such as the use of medical equipment. Knowledge of this type could be combined with other publicly available information to construct a profile of a customer's activities and finances.[6]*

While the Workgroup did not make any specific recommendations about sharing CEUD, these concerns are a good representation of the risks involved and show some of the concerns customers may have if there data were to be released without their explicit consent.

The Commission acknowledged similar concerns to the Workgroup when it comes to the release of CEUD. In their January 19, 2017 Order in the CEUD Docket they state,

> *But on the other hand, greater access to CEUD could reveal details about a customer's daily life. The data might disclose facts about a customer's household routine (when the customer sleeps and when the customer is active at home), whether the household has an alarm system, the types of appliances installed, the presence of certain medical equipment, and so on. Data*

[5] The CEUD Workgroup acknowledges that the protection of personally identifiable information is not within its charge, as specified in the Commission's Order dated June 17, 2013. As such, the CEUD Workgroup did not discuss or make any recommendations regarding the disclosure of personally identifiable information in connection with efforts to meet public policy goals.

[6] *See* Final Report of the CEUD Workgroup, Office of Administrative Hearings, Page 2, Docket No. E,G999/CI-12-1344 (September 17, 2014)

*from industrial customers might reveal competitively sensitive information. And, conceptually, disclosure of CEUD could reveal vulnerabilities in the energy distribution system.*

*The evolving state of technology involving data collection and analysis, as well as the evolving state of privacy law, prompt the Commission to adopt a cautious approach. Balancing these considerations, the Commission concludes that utilities should refrain from releasing CEUD without the customer's consent unless the utility adequately protects the anonymity of the data. Among other things, this means that where a customer's data would be so distinctive as to defy anonymization, a utility must secure the customer's consent before releasing the data to third parties.*[7]

We do not believe that CUB's recommendation that individual customer data be anonymized would be protective enough to alleviate the concerns inherent in the release of CEUD. CUB has requested that the usage data be combined with each customer's ZIP+4, income, household size, and additional characteristics. It is a concern that anonymity of individual customer data could be easily removed by simply cross-referencing the customer characteristics requested by CUB with readily available demographic research tools.

The sharing of granular customer and grid data that will be collected through new technologies is also at issue in our Grid Modernization docket. An additional discussion of these topics is also available in our Reply Comments in said docket.

## E. Compliance Reports

We appreciate parties' interest in a mid-period report, and we committed to file a report following year one of the pilot. As stated in our Petition, we intend to submit two reports, one 15 months after the Pilot starts and another at the conclusion of the Pilot. These reports will include key learnings and analysis, and will convey the metrics of the Pilot. We respond to the Department's request for Pilot metrics and other potential topics to be addressed in our reports. Finally, we will also briefly discuss the OAG's comment about the potential for monthly reporting, and why we think this is of limited value.

[7] *See* ORDER GOVERNING DISCLOSURE OF CUSTOMER ENERGY USE DATA TO THIRD PARTIES, REQUIRING FILING OF PRIVACY POLICIES AND COST DATA, AND SOLICITING COMMENT, Page 7, Docket E,G999/CI-12-1344 (January 19, 2017)

### *1. Metrics*

The Department has requested the metrics that we propose to report and how these metrics will inform our future decision making. Our compliance reporting will include these key metrics:

- Customer satisfaction and engagement
  - Measure and track customer satisfaction, preferences, attitudes, acceptance, and comprehension.
  - Better understand drivers for active customer participation.
- Demand savings
  - Assess how various customers groups within the Residential class change their consumption behavior during peak times in response to the propose rate structure.
  - Analyze how certain household characteristics impact responsiveness to peak price signals.
- Customer bill impacts
  - Quantify the relative impacts of the TOU rate on customers' bills as compared to the current residential rate.
  - Identify customer groups that are disproportionately impacted either positively or negatively.
- Energy usage changes
  - Measure how various customer groups within the Residential class change their overall consumption patterns in response to the propose rate structure.
  - Determine how consumption changes during off-peak (high renewable hours).
- Post Pilot takeaways
  - Evaluate the new capabilities of advanced meter infrastructure (AMI) meters
  - Assess impact of the TOU rate on the Company's revenue recovery

The Company intends to hire an M&V consultant that will provide guidance in building out a plan to analyze and study the results from the Pilot. This consultant will be a part of the development of highly detailed metrics for the M&V study. The Company will issue a request for proposal to procure a consultant once we have received approval for the Pilot.

Beyond metrics, the Department has also requested we include revenue collection data in our reports, and we are not opposed to providing this information. Also, we are not opposed to the OAG's request for "information about customer consumption patterns, bill impacts, the accuracy of the forecast used to develop the pricing, and the effectiveness of different customer education strategies that have been employed."[8]

Finally, the OAG requests that the Company track the data for self-identified LIHEAP eligible customers separate from those customers who are LIHEAP recipients. While this is not a type of reporting we could complete currently within our billing system, the data that we will be gathering from the pre-Pilot surveys and usage data from the new AMI meters may allow us to do this as a part of the Pilot. If the Commission finds this to be a useful area of study, the Company would work with its M&V consultant to develop this.

*2. Reporting Frequency*

The OAG also proposed a monthly report providing limited Pilot statistics. The Company believes that monthly reporting of statistics such as enrollment percentages and customer bill impacts would be of limited value. The Pilot will evolve over time, and we believe that the statistics will be more meaningful when included as a comprehensive review of the Pilot, a review that will provide greater context than any standalone number could provide. However, if the Commission views more frequent data as important, the Company would be willing to consider developing a one-page "dashboard" view that could provide a limited number of enrollment statistics and other easily provided data sets.

## F. Post-Pilot Issues and Planning

The Company has not yet presented a proposal for rate succession or a transition to a broader rollout at the conclusion of the Pilot. The Department's comments included two possible alternatives for how customer rates could be treated after the Pilot ends, but before a potential wider rollout of TOU rates.[9] The first is temporarily extending the pilot until new rates go into effect. The second is to return customers to their previous rate plan.

[8] *See* COMMENTS OF THE OFFICE OF THE ATTORNEY GENERAL, Page 19, Docket No. E002/M-17-775 (February 5, 2018)

[9] *See* Comments of the Minnesota Department of Commerce, Division of Energy Resources, Page 7, Docket No. E002/M-17-775 (February 5, 2018)

We believe both of these options would be acceptable alternatives as temporary succession plans after the Pilot ends. However, we are open to further evaluation of the possibilities during the Pilot duration.

The Department also requested additional specific information about future plans for exploring technologies and rate design proposals that could complement TOU rates.[10] We appreciate the Department's agreement that additional alternative rate designs and options complementary to TOU could be beneficial. As demonstrated by the development process used for the proposed TOU Pilot, specific rate design proposals often involve several considerations and analyses. We have begun the process of engaging a robust stakeholder process to discuss and develop new ideas and proposals related to demand response. The Customer Engagement plan also describes the Company's openness to additional tools to enhance customer data views during the TOU pilot. The demand response stakeholder process will be important in the development of proposals that could complement our TOU Rate, and accordingly, the Company is committed to leveraging the benefits of input gained in that process before charting the course for other tools.

## CONCLUSION

We appreciate the opportunity to respond to parties' comments and to provide clarifying details as requested. We continue to believe our Pilot proposal strikes the right balance of program features, and that the rate design is supported with rigorous analysis. We respectfully request the Commission approve the Company's proposal as modified by these Reply Comments.

Dated: February 26, 2018

Northern States Power Company

[10] Ibid., Page 13

# Minnesota Time-of-Use Pilot
# Customer Education & Engagement Plan

*Working Draft February 2018*

As the Company prepares to roll out the installation of advanced meters and group customers into treatment and controls groups for the Minnesota Time-of-Use (TOU) Rate Pilot (Pilot), transparent, proactive communications will help ensure customer trust and comfort with the new meters and the Pilot, especially for those customers who will participate in the Pilot treatment group.

It is important to note that this is a preliminary, working plan that presents an effective, wide-reaching customer education, engagement and communication plan. It could be subject to final decisions and clarity regarding specific details of the advanced meter and rate Pilot rollout. Changes in customer needs and communication methods based on additional research, testing and plan refinement are likely to occur as we get closer to launch. Furthermore, a wide variety of customer-insights platforms will be evaluated on a cost/benefit basis as final decisions are made regarding energy-usage data availability, and how the Company is able to most efficiently translate that data into meaningful and accessible information and insights to help customers be successful on the Pilot rate.

Customer information and engagement efforts will be grouped into two phases that will create a positive customer experience and help the Company better understand customers' interest, concerns and response to advanced meter installations and the TOU Rates, and provide the data and information customers need to engage in and be successful on these rates.

1. Phase one will focus on raising awareness of the advanced meter installation and ensuring effective change management, customer satisfaction and engagement. The target will be all customers in the Pilot areas receiving new meters.
2. Phase two will focus on the TOU rates, educating and advising on when to use energy to optimize savings, and sharing communication, tools and insights regarding how to successfully participate in the Pilot and what options exist.

## Early Research Informing Budget and Approach

### Industry Best Practices for TOU and Metering Rate Communications

Successful meter roll-outs and new rate design launches have been completed by utilities around the country. Lessons and best practices will be drawn from these experiences and incorporated into the Pilot's customer information and engagement efforts. There are four main outreach categories informed by other successful initiatives. First is audience, ensuring that communications are targeted and designed in a way that reaches the relevant customer segments. Second is channels, using prime channels to reach the targeted audience. Third is timing, addressing the frequency, duration and sequencing of messaging in preferred channels to reach the target audience. Fourth is packaged

content, the actual messaging content that be delivered to customers at each stage of the engagement. A sample of best practices linked to each of these four categories follows:

Audience

- Customized messaging based on Pilot area demographics
- Non-English speaking support
- Proficient customer representative training and support
- Adequate labor and information technology (IT) bandwidth linked to audience size

Channels

- Utilize a diversity of channels to reach the audience (e.g. physical advertisements, bill inserts, direct mail postcards, email.)
- Collaborate with local stakeholders, leaders, and community organizations
- Provide customers with a choice to select their preferred channels

Timing

- Staging the education and feedback to maximize impact
- Allow customer choice for frequency of touch points
- Convenient scheduling for meter swaps

Packaged content

- Effective content that does not overwhelm or confuse customers
- Relevant tips and feedback
- Secure data sharing (e.g. Green Button Connect My Data®)

**Journey Mapping the Customer Experience**

As an initial effort to understand the impacts and information needs for both of these phases, a cross-functional team of Company subject matter experts conducted a full-day journey mapping exercise to consider the customer response, experience and needs as we contemplated how to approach the new meter installation and Pilot participation. This effort led to a set of initial recommendations to incorporate a variety of channels, tactics and messages into the customer engagement plan across a wide variety of touch points to raise awareness, educate customers and help them to get the most out of this new technology.

Journey mapping focused on the following questions that will be further explored and validated through primary research, both in terms of customer needs and message perceptions:

- How frequently should we engage with meter recipients and TOU Pilot participants?
- What are the key moments in each phase where we are most likely to be successful in engaging and educating customers?
- How should we message the end-to-end customer experience during each of the two phases?
- What information are our customers looking for through each interaction?

- What tools can we offer and which channels should we leverage to provide a seamless and positive customer experience?
- What technology is needed to enable the designed experience and how is it represented on various development teams? How do we learn from industry best practices and incorporate industry learnings into our efforts?

## Phase 1: Advanced Meter Installation

### Phase 1 Research

Research of customer needs, perceptions and messaging, and preparation of materials and will begin summer 2018. This research will be gathered from numerous sources, including but not limited to:

- focus groups;
- customer interviews;
- conversations with program managers from other utilities to gather lessons learned; and
- researching reports developed by the Department of Energy (DOE), consultants and other sources on best practices.

### Phase 1 Communications

Phase 1-A: Early Awareness

Phase 1-A aims to raise awareness and introduce those in the Pilot areas to the proposed advanced meter rollout in their neighborhoods. Both Pilot treatment and control group customers will receive similar treatment during this phase. All customers receiving new meters will be included in this effort.

Phase 1-A will build understanding among impacted customers as to why they are getting a new meter, with a focus on customer benefits. Customers will receive information about what to expect during the upcoming process and any steps they will need to take. There will be a focus on providing just enough information in an easily understood way, with the ability for customers to obtain a deeper understanding if they wish. Strategies to achieve this are likely to include:

- Educate and engage public officials, reporters, neighborhood liaisons and others who can help spread the word using the Company's existing network of community and government relations experts, as well as email and mail outreach.
- Educate and engage opinion leaders and advocates trusted by the communities.
- Educate Company employees, with a strong focus on those likely to have direct customer contact.
- Provide preliminary, high-level information to help educate Pilot-neighborhood customers about the proposed installation of advanced meters in their area.
- Update the involved neighborhoods and impacted customers on the status, timeline and benefits of the advanced meters to be installed in their neighborhood as details are known.

Training and education of stakeholders will commence shortly after regulatory approval and peak approximately eight weeks prior to field activity, and efforts to communicate directly with customers will begin approximately four weeks in advance of neighborhood field activity

Phase 1-B: Meter Installation Awareness and Outreach

Phase 1-B aims to help ensure successful meter installations and a solid customer experience throughout this process by deploying individually targeted customer outreach on a block-by-block and house-by-house basis as meter installations are scheduled.

Objectives during this portion of Phase I are:

- Conduct advance outreach and notification about installation to affected customers on a rolling basis.
- Ensure that customers understand the installation process and any steps they must take to enable a successful meter installation.
- Provide communications that minimize confusion by anticipating and answering questions before customers ask them.

Phase 1-C: Customer Engagement

Phase 1-C focuses on follow-up communication to customers who have had an advanced meter installed to ensure satisfaction with their new meter and ensure a full understanding of any next steps based on whether they are in the treatment or control group.

Objectives during this portion of Phase I are:

- Educate customers who have had their advanced meter installed about the Pilot design and inform them of their selection into a treatment or control group for the purpose of measuring Pilot impacts.
- Provide information about what to expect from their new meter and anticipate and answer questions that arise.
- Provide contact information and resources for ongoing questions if needed.

**Phase 1 Tactics**

Potential tactics to achieve these objectives include direct communication efforts targeted toward customers receiving new meters such as: door hangers, targeted email messages, outbound phone messaging and calls, a status hotline, social media, bill onserts, direct mail, blog posts, promotion/sponsorships and events, information sheets, FAQs, and information posted on our website. Additional outreach to community leaders through Company communication channels and representatives will ensure a robust understanding of community impacts and an opportunity for input in advance of physical activity in the neighborhood. Training for Company employees will help ensure that personal contacts are professional and help direct customers to the best resources to meet their needs.

The exact timing and mix of customer education and communication activities will remain flexible to respond to any shifts in regulatory approvals, advanced meter implementation schedules, exact

timing of new technology functionality and ongoing customer feedback. The Company will use a variety of industry best practices regarding advanced meter rollout communications to ensure that customers are well informed in advance of, during and after meter installation.

## Phase 2: Time-of-Use Pilot Participant Engagement & Education

Phase 2 of the plan will last for the two-year duration of the Pilot and will focus on educating customers participating in the Pilot treatment group. Included in the Pilot education topics are the following (but not limited to):

- how the rate works,
- educating on how to read their bills,
- identifying when their peak use occurs and if it falls within the high cost hours,
- helping customers know what drives usage at various times of day and ways to shift when they use energy to take advantage of off-peak hours,
- explaining the non-monetary benefits of participating in TOU rates, such as environmental benefits from accommodating more renewables into our energy mix and the potential to offset the need for future power plants to meet customers' energy needs, and
- identifying other resources for strategies and support.

In addition to helping customers understand the rate Pilot details and what they need to do, these education and engagement components will help customers be aware of opt-out options and what happens after the Pilot concludes.

Because the Pilot is proposed to begin after several months post meter installation, we intend to allow participants to see their own time-of-day energy information on their bills before billing impacts occur if possible. As such, customers will be able to tell in advance when they need to shift usage to optimize their performance on the Pilot rate. This will require a series of educational communications to help customers understand what they are seeing, why they are seeing it, what it means, and how it will impact them once the new rates begin.

Objectives during this phase are:

- Educate participating customers through multi-channel communications, emphasizing the Pilot's greater transparency about usage, environmental benefits and possible savings.
- Provide proactive, practical tips and advice to participants on how they can shift their usage to save money during the Pilot.
- Focus on addressing potential customer questions and concerns before they come up, in order to increase customer satisfaction with the Pilot and minimize opt-outs.
- Educate and engage opinion leaders and advocates trusted by the communities about the benefits of the Pilot.

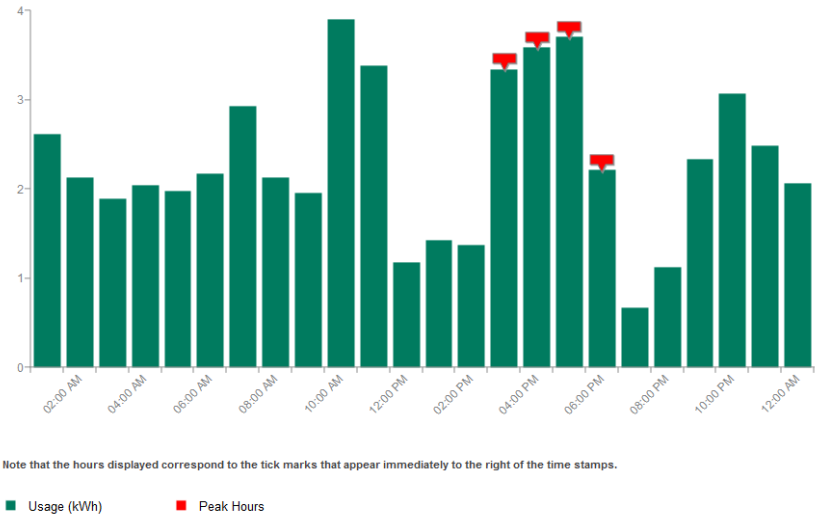
## Phase 2 Rate Pilot Implementation Research

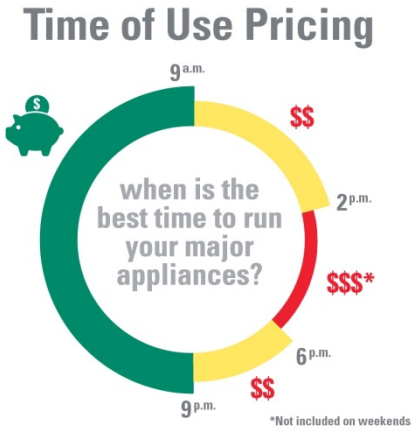
Research of customer needs, perceptions and messaging, data presentment, and preparation of materials and insights tools will occur concurrently with the Phase 1 implementation. This research will be gathered from numerous sources, including but not limited to:

- focus groups;
- customer interviews;
- ongoing conversations with program managers from other utilities to gather lessons learned;
- researching reports developed by DOE, consultants, and other sources on best practices; and
- input from insights platform providers.

Potential tactics to achieve these objectives include:

| Tactic | Execution |
|---|---|
| xcelenergy.com Website | Program pages will include information that helps customers understand the options, their likelihood to save money, and how they could change their energy use behaviors to maximize savings. Key elements are likely to include:<br>• Rate infographics<br>• Educational videos<br>• Tips to save<br>• Example customers profiles<br>• Application energy use information<br>• Frequently asked questions<br>• Information about available customer data and/or insights |
| Participant Welcome Kit | Welcome Kit materials will be distributed electronically or physically so all participants have access to program details in a consolidated format. Welcome Kit contents are likely to include:<br>• A welcome letter setting expectations on what customers will hear from us during the Pilot, such as information on bill impacts from rate changes, tips, notices of new tools and services, and requests for feedback via surveys.<br>• Pilot program overview materials, including infographics about the rate pilot timelines<br>• TOU enrollment door hanger reminder of peak times<br>• Inforgraphic appliance decals<br>• Customer Service contact information where they can call with concerns<br>• A guide to understanding TOU bills<br>• Tips for ways to shift energy use and save<br>• Decals for appliances |

| | |
|---|---|
| My Account | Pilot participants will continue to be able to see their monthly usage, usage trends, bill trends, and detailed bill information as previous. In addition, customers will be able to see detailed usage information on a daily and hourly basis so that they can understand how their usage influenced their bills.<br><br>Enabling customers to access interval energy use through an online portal is critical to providing relevant and timely information to take action. While usage data alone can help customers understand their consumption, translating that data into actionable insight at an appliance level and identifying optimal behaviors within the home remains a challenge. The Pilot participants will have access to this type of consumption breakdown and have the opportunity to translate that data into bill impacts and identify the necessary changes to save money.<br><br>The following screen shot shows an illustrative example from the TOU Rate Pilot in Colorado, showing hourly usage with the peak time period highlighted.<br><br>  |
| Notifications | The Company anticipates offering options to allow customers to opt-in to high-usage notifications during peak hours, so that they can look into what is driving their usage and take action to adjust future usage before receiving a higher-than-expected bill at the end of the month. |
| Tips | In addition to offering energy-use data, we anticipate offering tips to align with customers' energy-use patterns and information they provide so as to help them understand how to adjust and save. |
| Customer Call Center | Develop call center representative knowledge base content to inform reps about the Pilot rate, how to answer customer questions |

| | |
|---|---|
| | on the Pilot Rate, how to answer customer questions concerning meter installations, how to reschedule meter installation, and tools available for assisting customer with rate decision making and 'why is my bill so high' questions.<br><br>Hold training for all call center reps, including content on post-enrollment customer contact. |
| Infographic Decals | Infographics for widespread use that also can be converted into clings for customers, along with instruction on how to use. Clings are to be applied to high electrical use appliances. An example of an infographic that has high customer approval and decal use in Xcel Energy's Colorado TOU Pilot is shown below:<br><br>  |
| Participant Outreach | Periodic direct mail and email communications with tips and advice on how to save money through shifting energy usage during the Pilot. Also consider outbound phone messaging and calls on how customers can optimize their participation in the Pilot. |
| Video Channel | Create a tips channel to promote through participant social media groups and other communication channels to help customers learn more about how to change behavior and succeed on the rates. Emphasize seasonal content and use existing footage and tools, or create new information in-house as available. |
| Influencer Outreach | Identify and recruit trusted influencers in the communities, to help grow awareness and acceptance; engage in local neighborhood meetings, social media or events to improve education and awareness. |
| Updated FAQ | Customer Frequently Asked Questions (FAQs) are constantly updated with new questions and are re-organized as needed. |
| Additional website content | Additional links will be created in an on-going fashion to respond to customer needs as they occur. |

**Insights Platform**

Encouraging customers to make changes to how and when they use electricity starts with presenting customers their data in an easy to understand format and directing them to specific action-based recommendations. The Company aims to explore an Insights Platform that would utilize the new interval data to provide customers with customized insights and analysis specific to the new pricing structures to further drive engagement, behavior change, and ultimately lead to bill savings, load reduction, and higher customer satisfaction.

The solutions provided by the tool would include, but not be limited to:

- helping customers understand their energy use,
- helping customers understand their bills,
- helping customers understand how to control their bills, and
- helping call center agents use data and insights better serve customers' needs.

Many emerging software solutions promise to turn interval usage data into actionable insights. These solutions are likely to improve Pilot satisfaction and individual customer outcomes. Such tools could include online or app-based analysis tools, alerts of high usage during peak periods, reminder notifications, data disaggregation tools to identify which appliances likely are driving electric use at given times, and tips to help customers take actions that are most likely to give them the right mix of conveniences and affordability.

Xcel Energy has been monitoring market developments in this space, and explored deploying one of these tools in its Colorado Rate Pilot. While the potential improvement in customer experience and bill savings promised by these tools is great, they are also relatively untested, and costly and complex to deploy.

A variety of tools will be evaluated for technical alignment with our systems, costs to implement internally and externally, proven performance, functionality and applicability to our customers' energy use and ability to integrate in a timely manner. The decision of whether to implement such tools or rely on lower-cost, less-personalized information to help customers succeed will depend on the results of this research, and the ability to apply these or similar tools and the learnings from them to future rate rollouts. The budget quoted at the end of this section is an early estimate of the cost to implement the tools for the duration of a 10,000 customer participants in the treatment group. Even if it is determined that full deployment is too costly and complex for this limited pilot, there is a great opportunity to test specific elements of the proposed tools to inform a future deployment decisions and help customers succeed on the rates.

**Messaging**

The Company will develop and test a comprehensive set of messages tailored for each specific target audience. Messages will address topics such as advanced meter benefits, installation, resources for assistance, advanced meter concerns, TOU rate questions, system and environmental benefits of TOU rates, details of participation in the TOU rates, and how to opt out if they decide that the Rate Pilot is not a good option for them.

**Anticipating Key Issues**

While individual customer issues will receive attention, we will also track issues on a broader scale. We will actively monitor sources where customer issues or concerns may originate including, but not limited to:

- Customer Care Call Centers (both residential and business inquiries);
- inquiries to company executives, regional leaders, front-line managers;
- inquiries to field and other employee personnel;
- our Community Relations, Account Management, State and Government Affairs teams;
- media relations;
- Minnesota Public Utilities Commissioners and staff;
- community groups and consumer advocacy groups; and
- letters, phone calls, social media posts, and emails from customers.

**Addressing Concerns**

Across the board, we will use existing processes and procedures for handling escalated issues. Our communication materials will attempt to address key issues and possible advanced meter concerns, potentially including but not limited to:

- high bill concerns,
- TOU rate confusion,
- Radio Frequency emissions, privacy, and security,
- accuracy,
- deployment expectations,
- opt-out policies, and
- fixed and limited-income customers.

Communication and education materials that could be customized for this segment of customers may include:

- FAQs, Web content and fact sheets addressing these specific concerns and needs.
- Customized presentations for Community Relations managers to share with their constituents.
- Outreach to organizations serving low-income customer segments, with an emphasis on providing ready-to-use materials that can be distributed via their communication channels, online resources, events, meetings, and social media platforms.

Portions of the proposed Pilot areas have diverse populations and may not speak or understand English communications. We will develop communications customized to reflect that diversity, reaching audiences with a range of income levels and understanding of their electric service. We will work on a local level to provide resources for those with non-English language preferences where those efforts would enable us to better reach a large number of customers.

## Budget

The Company is proposing a robust, multi-faceted plan to support, inform and engage customers throughout the deployment of advanced meter and smart grid technology.

These preliminary estimates are based on previous customer education campaigns we have executed, including the recent introduction of tiered rates in Colorado by our affiliate Public Service Company of Colorado as well as utility best practices.

This budget does not include IT implementation costs for things such as integrating interval meter data into MyAccount or into our billing systems. The proposed budget includes external resources and support for this program (i.e., goods and services), but does not include internal labor needed to produce these resources, as that is included in standard operating budgets.

The forecasted costs are broken out in the following table. Costs will be spread over a three-year period, starting prior to meter installations currently scheduled for 2019 and concluding with the Rate Pilot's 2021 conclusion with essential communications continuing to impacted customers as needed. Using available in-house communications resources and distribution channels for creative elements and adapting materials from TOU Pilots in other jurisdictions, supplemented with a potential contract program manager and marketing assistant to coordinate details and implementation of the communications plan and other program administration details, we anticipate an efficient approach to a robust customer experience throughout both phases of the project.

| **Phase 1: Advanced Meter Installation Awareness & Education** | 2018 Estimate | 2019 Estimate | 2020 Estimate | 2021 Estimate | Total Estimate |
|---|---|---|---|---|---|
| **Communications / Messaging Market Research** | | | | | |
| Focus groups, surveys and message testing | $ 25,000 | $ 25,000 | $ - | $ - | $ 50,000 |
| **Customer Experience Implementation** | | | | | |
| Includes tactics to notify and educate customers about upcoming meter installations and benefits. Tactics could include direct and mass communication efforts targeted toward impacted customers, such as: blog artides, media outreach, targeted email messages, outbound phone messaging and calls, social media, bill onserts, direct mail, door hangers, promotion/sponsorships and events, and other promotional tactics during the period leading up to and immediately following advanced meter installation. | $ 21,250 | $ 63,750 | $ - | $ - | $ 85,000 |
| **Phase II – Rate Pilot Awareness & Education** | | | | | |
| **Communications / Messaging Market Research** | | | | | |
| Focus groups, surveys and message testing | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 100,000 |
| **Customer Experience Implementation** | | | | | |
| Includes efforts to notify and educate customers about the Time Of Use pilot, their options as pilot participants, and how to shift energy use to succeed on the pilot. Tactics could include direct and mass communication efforts targeting impacted customers, such as outbound calls, Web page development, employee training and materials, stakeholder/neighborhood influencer outreach, direct mail, door hangers collateral materials, Time-of-Use appliance reminder decals, email messages, instructional videos, neighborhood events and outreach, and promotion, sponsorships and events, and other promotional tactics over a two-year pilot period. | $ 9,250 | $ 64,750 | $ 74,000 | $ 37,000 | $ 185,000 |
| **Communications Budget Subtotal** | $ 80,500 | $ 178,500 | $ 99,000 | $ 62,000 | $ 420,000 |
| **Customer Insights Tools** | | | | | |
| **Customer Insights Tool Integration Ballpark Estimate** | | | | | |
| Range of costs based on prior exploratory efforts for somewhat similar tools. Actual cost and decision to proceed with depend on the results of a market analysis of available tools, functionality, ability to assist customers by integrating data and personalized recommendations, cost to implement, and ability to integrate tools and/or learnings into future rate and technology rollouts. | $ 275,000<br>to<br>$ 400,000 | $ 660,000<br>to<br>$ 960,000 | $ 110,000<br>to<br>$ 160,000 | $ 55,000<br>to<br>$ 80,000 | $ 1,100,000<br>to<br>$ 1,600,000 |
| **Total Budget Range with Customer Insights Tools** | $ 355,500<br>to<br>$ 480,500 | $ 838,500<br>to<br>$ 1,138,500 | $ 209,000<br>to<br>$ 259,000 | $ 117,000<br>to<br>$ 142,000 | $ 1,520,000<br>to<br>$ 2,020,000 |

# Redline

**RESOURCE ADJUSTMENT**
Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider. N

**ENVIRONMENTAL IMPROVEMENT RIDER**
Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

**MONTHLY MINIMUM CHARGE**
Customer Charge.

**SURCHARGE**
In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

**LOW INCOME ENERGY DISCOUNT RIDER**
Bills are subject to the adjustment provided for in the Low Income Energy Discount Rider.

**REVENUE DECOUPLING MECHANISM RIDER**
Bills are subject to the adjustments provided for in the Revenue Decoupling Mechanism Rider.

The following are terms and conditions for service under this tariff.

**LATE PAYMENT CHARGE**
Any unpaid balance over $10.00 is subject to a 1.5% late payment charge or $1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

**LOW INCOME ENERGY DISCOUNT**
Energy discount is available to qualified low income customers under this schedule subject to the provisions contained in the Low Income Energy Discount Rider.

**BILL PROTECTION**
Billing charges considered for bill protection will include customer and energy charges, fuel cost charges and if applicable, the Residential Controlled Air Conditioning and Water Heating Rider discounts. Bill protection will be considered only for customers that have been pilot participants at the same residential location for 12 months from the effective date of this rate schedule, based on the first 12 months of participation in the pilot program. Any Pilot program billing charge in excess of 10 percent of the corresponding billing charge that would have been applied had the customer not been a pilot participant will be credited to the customer's account, including any applicable taxes. The bill protection in this paragraph will terminate after the first 12 months of participation in the pilot program.

Customers that have received LIHEAP assistance within the 12 months prior to participation in the pilot program will have bill protection determined monthly for the first 12 months of pilot participation for any billing charges in excess of the corresponding billing charge that would have been applied had the customer not been a pilot participant. This will be determined on a monthly basis for the first 12 months of pilot participation. For the second 12 months of pilot participation, the bill protection will continue to be provided for these LIHEAP assistance customers for billing charges in excess of 10 percent of the corresponding billing charge on an annual basis for the second 12 months of pilot participation. Customers that start to receive LIHEAP assistance after their participation in the pilot has begun will receive monthly bill protection up to the first 12 month anniversary of the pilot, and shall receive annual bill protection for the second 12 month period of the pilot. Customers who opt out or leave the pilot area will forego the annual protection otherwise offered for this second 12 month period. N

(Continued on Sheet No. 5-4.3)

# Clean

**RESOURCE ADJUSTMENT**
Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider. N

**ENVIRONMENTAL IMPROVEMENT RIDER**
Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

**MONTHLY MINIMUM CHARGE**
Customer Charge.

**SURCHARGE**
In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

**LOW INCOME ENERGY DISCOUNT RIDER**
Bills are subject to the adjustment provided for in the Low Income Energy Discount Rider.

**REVENUE DECOUPLING MECHANISM RIDER**
Bills are subject to the adjustments provided for in the Revenue Decoupling Mechanism Rider.

The following are terms and conditions for service under this tariff.

**LATE PAYMENT CHARGE**
Any unpaid balance over $10.00 is subject to a 1.5% late payment charge or $1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

**LOW INCOME ENERGY DISCOUNT**
Energy discount is available to qualified low income customers under this schedule subject to the provisions contained in the Low Income Energy Discount Rider.

**BILL PROTECTION**
Billing charges considered for bill protection will include customer and energy charges, fuel cost charges and if applicable, the Residential Controlled Air Conditioning and Water Heating Rider discounts. Bill protection will be considered only for customers that have been pilot participants at the same residential location for 12 months from the effective date of this rate schedule, based on the first 12 months of participation in the pilot program. Any Pilot program billing charge in excess of 10 percent of the corresponding billing charge that would have been applied had the customer not been a pilot participant will be credited to the customer's account, including any applicable taxes. The bill protection in this paragraph will terminate after the first 12 months of participation in the pilot program.

Customers that have received LIHEAP assistance within the 12 months prior to participation in the pilot program will have bill protection determined monthly for the first 12 months of pilot participation for any billing charges in excess of the corresponding billing charge that would have been applied had the customer not been a pilot participant. This will be determined on a monthly basis for the first 12 months of pilot participation. For the second 12 months of pilot participation, the bill protection will continue to be provided for these LIHEAP assistance customers for billing charges in excess of 10 percent of the corresponding billing charge on an annual basis for the second 12 months of pilot participation. Customers that start to receive LIHEAP assistance after their participation in the pilot has begun will receive monthly bill protection up to the first 12 month anniversary of the pilot, and shall receive annual bill protection for the second 12 month period of the pilot. Customers who opt out or leave the pilot area will forego the annual protection otherwise offered for this second 12 month period. N

(Continued on Sheet No. 5-4.3)

## CERTIFICATE OF SERVICE

I, Carl Cronin, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota

xx electronic filing

**Docket Nos. E002/M-17-775**
**E002/M-17-776**

Dated this 26th day of February 2018

/s/
_____
Carl Cronin
Regulatory Administrator

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| David | Aafedt | daafedt@winthrop.com | Winthrop & Weinstine, P.A. | Suite 3500, 225 South Sixth Street<br>Minneapolis, MN 554024629 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Christopher | Anderson | canderson@allete.com | Minnesota Power | 30 W Superior St<br>Duluth, MN 558022191 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Alison C | Archer | aarcher@misoenergy.org | MISO | 2985 Ames Crossing Rd<br>Eagan, MN 55121 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Mara | Ascheman | mara.k.ascheman@xcelenergy.com | Xcel Energy | 414 Nicollet Mall Fl 5<br>Minneapolis, MN 55401 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Andrew | Bahn | Andrew.Bahn@state.mn.us | Public Utilities Commission | 121 7th Place E., Suite 350<br>St. Paul, MN 55101 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Ryan | Barlow | Ryan.Barlow@ag.state.mn.us | Office of the Attorney General-RUD | 445 Minnesota Street<br>Bremer Tower, Suite 1400<br>St. Paul, Minnesota 55101 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| James J. | Bertrand | james.bertrand@stinson.com | Stinson Leonard Street LLP | 50 S 6th St Ste 2600<br>Minneapolis, MN 55402 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Brenda A. | Bjorklund | brenda.bjorklund@centerpointenergy.com | CenterPoint Energy | 505 Nicollet Mall<br>Minneapolis, MN 55402 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| William A. | Blazar | bblazar@mnchamber.com | Minnesota Chamber Of Commerce | Suite 1500<br>400 Robert Street North<br>St. Paul, MN 55101 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| James | Canaday | james.canaday@ag.state.mn.us | Office of the Attorney General-RUD | Suite 1400<br>445 Minnesota St.<br>St. Paul, MN 55101 | Electronic Service | No | OFF_SL_17-775_M-17-775 |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Jeanne | Cochran | Jeanne.Cochran@state.mn.us | Office of Administrative Hearings | P.O. Box 64620<br>St. Paul,<br>MN<br>55164-0620 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| John | Coffman | john@johncoffman.net | AARP | 871 Tuxedo Blvd.<br>St, Louis,<br>MO<br>63119-2044 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Generic Notice | Commerce Attorneys | commerce.attorneys@ag.state.mn.us | Office of the Attorney General-DOC | 445 Minnesota Street Suite 1800<br>St. Paul,<br>MN<br>55101 | Electronic Service | Yes | OFF_SL_17-775_M-17-775 |
| Corey | Conover | corey.conover@minneapolismn.gov | Minneapolis City Attorney | 350 S. Fifth Street<br>City Hall, Room 210<br>Minneapolis,<br>MN<br>554022453 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Carl | Cronin | Regulatory.records@xcelenergy.com | Xcel Energy | 414 Nicollet Mall FL 7<br>Minneapolis,<br>MN<br>554011993 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Joseph | Dammel | joseph.dammel@ag.state.mn.us | Office of the Attorney General-RUD | Bremer Tower, Suite 1400<br>445 Minnesota Street<br>St. Paul,<br>MN<br>55101-2131 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| James | Denniston | james.r.denniston@xcelenergy.com | Xcel Energy Services, Inc. | 414 Nicollet Mall, Fifth Floor<br>Minneapolis,<br>MN<br>55401 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Ian | Dobson | residential.utilities@ag.state.mn.us | Office of the Attorney General-RUD | 1400 BRM Tower<br>445 Minnesota St<br>St. Paul,<br>MN<br>551012130 | Electronic Service | Yes | OFF_SL_17-775_M-17-775 |
| John | Farrell | jfarrell@ilsr.org | Institute for Local Self-Reliance | 1313 5th St SE #303<br>Minneapolis,<br>MN<br>55414 | Electronic Service | No | OFF_SL_17-775_M-17-775 |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Sharon | Ferguson | sharon.ferguson@state.mn.us | Department of Commerce | 85 7th Place E Ste 280<br>Saint Paul,<br>MN<br>551012198 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Stephen | Fogel | Stephen.E.Fogel@XcelEnergy.com | Xcel Energy Services, Inc. | 816 Congress Ave, Suite 1650<br>Austin,<br>TX<br>78701 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Edward | Garvey | edward.garvey@AESLconsulting.com | AESL Consulting | 32 Lawton St<br>Saint Paul,<br>MN<br>55102-2617 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
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| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
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| Richard | Johnson | Rick.Johnson@lawmoss.com | Moss & Barnett | 150 S. 5th Street<br>Suite 1200<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
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| Dan | Juhl | djuhl@juhlenergy.com | Juhl Energy Inc. | 1502 17th St SE<br><br>Pipestone,<br>MN<br>56164 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
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| Peder | Larson | plarson@larkinhoffman.com | Larkin Hoffman Daly & Lindgren, Ltd. | 8300 Norman Center Drive<br>Suite 1000<br>Bloomington,<br>MN<br>55437 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Douglas | Larson | dlarson@dakotaelectric.com | Dakota Electric Association | 4300 220th St W<br><br>Farmington,<br>MN<br>55024 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Paula | Maccabee | Pmaccabee@justchangelaw.com | Just Change Law Offices | 1961 Selby Ave<br><br>Saint Paul,<br>MN<br>55104 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
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| Pam | Marshall | pam@energycents.org | Energy CENTS Coalition | 823 7th St E<br>St. Paul,<br>MN<br>55106 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
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| David | Moeller | dmoeller@allete.com | Minnesota Power | 30 W Superior St<br>Duluth,<br>MN<br>558022093 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
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| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
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| Jeff | Oxley | jeff.oxley@state.mn.us | Office of Administrative Hearings | 600 North Robert Street<br><br>St. Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Kevin | Reuther | kreuther@mncenter.org | MN Center for Environmental Advocacy | 26 E Exchange St, Ste 206<br><br>St. Paul,<br>MN<br>551011667 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Richard | Savelkoul | rsavelkoul@martinsquires.com | Martin & Squires, P.A. | 332 Minnesota Street Ste W2750<br><br>St. Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Inga | Schuchard | ischuchard@larkinhoffman.com | Larkin Hoffman | 8300 Norman Center Drive<br>Suite 1000<br>Minneapolis,<br>MN<br>55437 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
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| Byron E. | Starns | byron.starns@stinson.com | Stinson Leonard Street LLP | 50 S 6th St Ste 2600<br><br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-775_M-17-775 |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
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| James M. | Strommen | jstrommen@kennedy-graven.com | Kennedy & Graven, Chartered | 470 U.S. Bank Plaza<br>200 South Sixth Street<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Eric | Swanson | eswanson@winthrop.com | Winthrop & Weinstine | 225 S 6th St Ste 3500<br>Capella Tower<br>Minneapolis,<br>MN<br>554024629 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Lisa | Veith | lisa.veith@ci.stpaul.mn.us | City of St. Paul | 400 City Hall and Courthouse<br>15 West Kellogg Blvd.<br>St. Paul,<br>MN<br>55102 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Samantha | Williams | swilliams@nrdc.org | Natural Resources Defense Council | 20 N. Wacker Drive<br>Ste 1600<br>Chicago,<br>IL<br>60606 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Joseph | Windler | jwindler@winthrop.com | Winthrop & Weinstine | 225 South Sixth Street, Suite 3500<br><br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Cam | Winton | cwinton@mnchamber.com | Minnesota Chamber of Commerce | 400 Robert Street North<br>Suite 1500<br>St. Paul,<br>Minnesota<br>55101 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Daniel P | Wolf | dan.wolf@state.mn.us | Public Utilities Commission | 121 7th Place East<br>Suite 350<br>St. Paul,<br>MN<br>551012147 | Electronic Service | Yes | OFF_SL_17-775_M-17-775 |
| Jeff | Zethmayr | jzethmayr@citizensutilityboard.org | Citizens Utility Board | 309 W. Washington, Ste 800<br><br>Chicago,<br>IL<br>60606 | Electronic Service | No | OFF_SL_17-775_M-17-775 |
| Patrick | Zomer | Patrick.Zomer@lawmoss.com | Moss & Barnett a Professional Association | 150 S. 5th Street, #1200<br><br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-775_M-17-775 |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
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| David | Aafedt | daafedt@winthrop.com | Winthrop & Weinstine, P.A. | Suite 3500, 225 South Sixth Street<br>Minneapolis,<br>MN<br>554024629 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Christopher | Anderson | canderson@allete.com | Minnesota Power | 30 W Superior St<br>Duluth,<br>MN<br>558022191 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Alison C | Archer | aarcher@misoenergy.org | MISO | 2985 Ames Crossing Rd<br>Eagan,<br>MN<br>55121 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Ryan | Barlow | Ryan.Barlow@ag.state.mn.us | Office of the Attorney General-RUD | 445 Minnesota Street<br>Bremer Tower, Suite 1400<br>St. Paul,<br>Minnesota<br>55101 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| James J. | Bertrand | james.bertrand@stinson.com | Stinson Leonard Street LLP | 50 S 6th St Ste 2600<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| William A. | Blazar | bblazar@mnchamber.com | Minnesota Chamber Of Commerce | Suite 1500<br>400 Robert Street North<br>St. Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| James | Canaday | james.canaday@ag.state.mn.us | Office of the Attorney General-RUD | Suite 1400<br>445 Minnesota St.<br>St. Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Jeanne | Cochran | Jeanne.Cochran@state.mn.us | Office of Administrative Hearings | P.O. Box 64620<br>St. Paul,<br>MN<br>55164-0620 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| John | Coffman | john@johncoffman.net | AARP | 871 Tuxedo Blvd.<br>St, Louis,<br>MO<br>63119-2044 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Generic Notice | Commerce Attorneys | commerce.attorneys@ag.state.mn.us | Office of the Attorney General-DOC | 445 Minnesota Street Suite 1800<br>St. Paul,<br>MN<br>55101 | Electronic Service | Yes | OFF_SL_17-776_M-17-776 |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Corey | Conover | corey.conover@minneapolismn.gov | Minneapolis City Attorney | 350 S. Fifth Street<br>City Hall, Room 210<br>Minneapolis,<br>MN<br>554022453 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Carl | Cronin | Regulatory.records@xcelenergy.com | Xcel Energy | 414 Nicollet Mall FL 7<br><br>Minneapolis,<br>MN<br>554011993 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Joseph | Dammel | joseph.dammel@ag.state.mn.us | Office of the Attorney General-RUD | Bremer Tower, Suite 1400<br>445 Minnesota Street<br>St. Paul,<br>MN<br>55101-2131 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Ian | Dobson | residential.utilities@ag.state.mn.us | Office of the Attorney General-RUD | 1400 BRM Tower<br>445 Minnesota St<br>St. Paul,<br>MN<br>551012130 | Electronic Service | Yes | OFF_SL_17-776_M-17-776 |
| John | Farrell | jfarrell@ilsr.org | Institute for Local Self-Reliance | 1313 5th St SE #303<br><br>Minneapolis,<br>MN<br>55414 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Sharon | Ferguson | sharon.ferguson@state.mn.us | Department of Commerce | 85 7th Place E Ste 280<br><br>Saint Paul,<br>MN<br>551012198 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Edward | Garvey | edward.garvey@AESLconsulting.com | AESL Consulting | 32 Lawton St<br><br>Saint Paul,<br>MN<br>55102-2617 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Janet | Gonzalez | Janet.gonzalez@state.mn.us | Public Utilities Commission | Suite 350<br>121 7th Place East<br>St. Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Kimberly | Hellwig | kimberly.hellwig@stoel.com | Stoel Rives LLP | 33 South Sixth Street<br>Suite 4200<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
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| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
|---|---|---|---|---|---|---|---|
| Julia | Jazynka | jjazynka@energyfreedomcoalition.com | Energy Freedom Coalition of America | 101 Constitution Ave NW<br>Ste 525 East<br><br>Washington,<br>DC<br>20001 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Alan | Jenkins | aj@jenkinsatlaw.com | Jenkins at Law | 2265 Roswell Road<br>Suite 100<br>Marietta,<br>GA<br>30062 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Linda | Jensen | linda.s.jensen@ag.state.mn.us | Office of the Attorney General-DOC | 1800 BRM Tower 445 Minnesota Street<br><br>St. Paul,<br>MN<br>551012134 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Richard | Johnson | Rick.Johnson@lawmoss.com | Moss & Barnett | 150 S. 5th Street<br>Suite 1200<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Sarah | Johnson Phillips | sarah.phillips@stoel.com | Stoel Rives LLP | 33 South Sixth Street<br>Suite 4200<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Mark J. | Kaufman | mkaufman@ibewlocal949.org | IBEW Local Union 949 | 12908 Nicollet Avenue South<br><br>Burnsville,<br>MN<br>55337 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Thomas | Koehler | TGK@IBEW160.org | Local Union #160, IBEW | 2909 Anthony Ln<br><br>St Anthony Village,<br>MN<br>55418-3238 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
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| Peder | Larson | plarson@larkinhoffman.com | Larkin Hoffman Daly & Lindgren, Ltd. | 8300 Norman Center Drive<br>Suite 1000<br>Bloomington,<br>MN<br>55437 | Electronic Service | No | OFF_SL_17-776_M-17-776 |

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| Douglas | Larson | dlarson@dakotaelectric.com | Dakota Electric Association | 4300 220th St W<br>Farmington,<br>MN<br>55024 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Paula | Maccabee | Pmaccabee@justchangelaw.com | Just Change Law Offices | 1961 Selby Ave<br>Saint Paul,<br>MN<br>55104 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Peter | Madsen | peter.madsen@ag.state.mn.us | Office of the Attorney General-DOC | Bremer Tower, Suite 1800<br>445 Minnesota Street<br>St. Paul,<br>Minnesota<br>55101 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Kavita | Maini | kmaini@wi.rr.com | KM Energy Consulting LLC | 961 N Lost Woods Rd<br>Oconomowoc,<br>WI<br>53066 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Pam | Marshall | pam@energycents.org | Energy CENTS Coalition | 823 7th St E<br>St. Paul,<br>MN<br>55106 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Joseph | Meyer | joseph.meyer@ag.state.mn.us | Office of the Attorney General-RUD | Bremer Tower, Suite 1400<br>445 Minnesota Street<br>St Paul,<br>MN<br>55101-2131 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| David | Moeller | dmoeller@allete.com | Minnesota Power | 30 W Superior St<br>Duluth,<br>MN<br>558022093 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Andrew | Moratzka | andrew.moratzka@stoel.com | Stoel Rives LLP | 33 South Sixth St Ste 4200<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| David | Niles | david.niles@avantenergy.com | Minnesota Municipal Power Agency | 220 South Sixth Street<br>Suite 1300<br>Minneapolis,<br>Minnesota<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Carol A. | Overland | overland@legalectric.org | Legalectric - Overland Law Office | 1110 West Avenue<br>Red Wing,<br>MN<br>55066 | Electronic Service | No | OFF_SL_17-776_M-17-776 |

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
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| Jeff | Oxley | jeff.oxley@state.mn.us | Office of Administrative Hearings | 600 North Robert Street<br>St. Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Kevin | Reuther | kreuther@mncenter.org | MN Center for Environmental Advocacy | 26 E Exchange St, Ste 206<br>St. Paul,<br>MN<br>551011667 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Richard | Savelkoul | rsavelkoul@martinsquires.com | Martin & Squires, P.A. | 332 Minnesota Street Ste W2750<br>St. Paul,<br>MN<br>55101 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Inga | Schuchard | ischuchard@larkinhoffman.com | Larkin Hoffman | 8300 Norman Center Drive<br>Suite 1000<br>Minneapolis,<br>MN<br>55437 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
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| Ken | Smith | ken.smith@districtenergy.com | District Energy St. Paul Inc. | 76 W Kellogg Blvd<br>St. Paul,<br>MN<br>55102 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Byron E. | Starns | byron.starns@stinson.com | Stinson Leonard Street LLP | 50 S 6th St Ste 2600<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| James M. | Strommen | jstrommen@kennedy-graven.com | Kennedy & Graven, Chartered | 470 U.S. Bank Plaza<br>200 South Sixth Street<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Eric | Swanson | eswanson@winthrop.com | Winthrop & Weinstine | 225 S 6th St Ste 3500<br>Capella Tower<br>Minneapolis,<br>MN<br>554024629 | Electronic Service | No | OFF_SL_17-776_M-17-776 |

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| Lisa | Veith | lisa.veith@ci.stpaul.mn.us | City of St. Paul | 400 City Hall and Courthouse<br>15 West Kellogg Blvd.<br>St. Paul,<br>MN<br>55102 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Joseph | Windler | jwindler@winthrop.com | Winthrop & Weinstine | 225 South Sixth Street, Suite 3500<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Cam | Winton | cwinton@mnchamber.com | Minnesota Chamber of Commerce | 400 Robert Street North<br>Suite 1500<br>St. Paul,<br>Minnesota<br>55101 | Electronic Service | No | OFF_SL_17-776_M-17-776 |
| Daniel P | Wolf | dan.wolf@state.mn.us | Public Utilities Commission | 121 7th Place East<br>Suite 350<br>St. Paul,<br>MN<br>551012147 | Electronic Service | Yes | OFF_SL_17-776_M-17-776 |
| Patrick | Zomer | Patrick.Zomer@lawmoss.com | Moss & Barnett a Professional Association | 150 S. 5th Street, #1200<br>Minneapolis,<br>MN<br>55402 | Electronic Service | No | OFF_SL_17-776_M-17-776 |